



D5.1: WP5 Fact sheet

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DIK(W) approach in MSP



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List of acronyms

D	Data
DIK(W)	Data Information Knowledge (Wisdom)
EMFAF	European Maritime, Fisheries and Aquaculture Fund
EBA	Ecosystem-Based Approach
EMODnet	European Maritime Observation and Data network
eMSP-NBSR	Emerging ecosystem-based Maritime Spatial Planning topics in North and Baltic Sea Regions
EC	European Commission
EU	European Union
EEZ	Exclusive Economic Zone
FAIR	Findable, Accessible, Interoperable, Reusable
GNSBI	Greater North Sea Basin Initiative
HELCOM	Helsinki Commission
I	Information
INSPIRE	Infrastructure for Spatial Information in Europe
IHO	International Hydrographic Organization
K	Knowledge
MS	Member State(s)
MSFD	Marine Strategy Framework Directive
MSP	Maritime Spatial Planning
MSPD	Maritime Spatial Planning Directive
MSPdF	Maritime Spatial Planning Data Framework from TEG on data for MSP
NESBp	Northern European Sea Basins project
ReMAP	Reviewing and Evaluating the Monitoring and Assessment of Maritime Spatial Planning
SBE	Sustainable Blue Economy
sDTS	Spatial Decision Support Tool
Shom	French Hydrographic and Oceanographic Service – <i>Service Hydrographique et Océanographique de la Marine</i>
TEG on Data for MSP	Technical Expert Group on Data for MSP
VASAB	Vision and Strategies around the Baltic Sea
WP	Work Package(s)

I. Introduction

1.1. Northern European Sea Basins project

The Greater North Sea and the Baltic Sea are among the most heavily used seas in the world. They have historically fulfilled a crucial role for coastal communities and currently host all blue economy sectors and subsectors identified by the European Union (EU) [1]. These two “industrial sea basins” are the scene of a variety of human activities, both established and emerging, such as fishing and aquaculture, maritime transport and port activities, energy production and related utilities/uses. At the same time, they are home to a rich marine biodiversity, which has been in poor ecological condition since at least the 1970s-1980s, due to the combination of various anthropogenic pressures from catchment basins and maritime areas¹, and the profound long-term effects of Climate Change (CC)².

To tackle this complexity, an integrated spatial planning and management approach with the potential to balance demands from socio-economic sectors for sea space, coupled with environmental and climate regulation is required. Maritime Spatial Planning (MSP) has emerged as the political and technical cross-cutting mechanism for organising and rationalising this balance [2], holding the potential to deliver both ocean conservation and sustainable use or development objectives [3]. According to academic and expertise fields, MSP is a process for analysing and informing the spatial and temporal distributions of ocean uses through zoning tools, to achieve ecological, economic, and social objectives [4]. It offers a more holistic approach to coordinate and regulate the blue economy by identifying sites for new sea uses and compatible uses (e.g., fisheries and artificial reefs), mitigating conflicts, enabling adaptation to changing conditions and priorities, fostering collaboration, and promoting capacity building [5]; all in an efficient, safe and sustainable way.

Based on identified characteristics of an effective theoretical MSP³, the EU adopted specific legislation with the Maritime Spatial Planning Directive (MSPD) 2014/89/EU. Currently in revision, the MSPD has made it possible to implement different national

¹ https://www.eea.europa.eu/publications/report_2002_0524_154909/regional-seas-around-europe/NorthSea.pdf/view

² https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Europe.pdf

³ (1) ecosystem-based, (2) integrated, (3) place-based or area-based (hereafter, place-based), (4) adaptive, (5) strategic and anticipatory (hereafter, strategic), and (6) participatory [4].

maritime development plans and linked zoning areas, reflecting the different administrative contexts of European Member States (MS) concerned. Under the umbrella of the [Baltic Marine Environment Protection Commission](#), also known as the Helsinki Commission (HELCOM), and the [Vision and Strategies around the Baltic Sea](#) (VASAB), the eight European Baltic Sea countries collaborate in the implementation, monitoring and evaluation of their MSP processes in the Baltic Sea basin since 2010. Through the Joint HELCOM-VASAB Maritime Spatial Planning Working Group (HELCOM-VASAB MSP WG), they strive to move towards greater coherence in approaches to monitoring and evaluation, the improvement of assessment practices to build a regional MSP knowledge base, and the capacity of MSP practitioners and decision-makers [6].

With this same intention in enhancing/improving strategic, cross-sectoral and international cooperation on the interlinked transitions for the marine environment, energy, food, and transport, the [Greater North Sea Basin Initiative](#) (GNSBI) was established in 2023 between the nine North Sea countries (including the United Kingdom). The initiative intends to build on current cooperative frameworks such as the North Seas Maritime Spatial Planning collaboration group, the North Seas Energy Cooperation ([NSEC](#)), and the Oslo-Paris ([OSPAR](#)) conventions, to reinforce these, and to create synergies for optimal alignment of the ongoing work⁴. The GNSBI now provides a regional platform for spatial integration of all uses in the Greater North Sea basin, by making proposals for aligning national MSP initiatives to ensure better integration of all uses, efficient management processes, and coordinating sectoral interests across boundaries applying an Ecosystem-Based Approach (EBA).

In this context, the [Northern European Sea Basins project](#) (NESBp) aims to support the GNSBI in fostering international cooperation in MSP in the extended North Sea basin, with close ties to the Baltic Sea basin. By linking GNSBI with HELCOM-VASAB MSP WG, the project promotes knowledge sharing and networking across sea basins to enable strategic and efficient MSP, building on insights from the eMSP NBSR project (see the Policy brief on Sustainable Blue Economy (SBE) about Multi-Use in the North and Baltic Sea)⁵, and other EU Green Deal (EGD) MSP initiatives. Through six Work Packages (WPs), the key objectives of NESBp are to:

- Ensure coherent MSP implementation and maritime policy alignment across borders in the North Sea basin;
- Evaluate cross-border cooperative interactions among authorities and inter-ministerial bodies ;

⁴ <https://data.consilium.europa.eu/doc/document/ST-16422-2023-INIT/en/pdf>

⁵ <https://www.emspproject.eu/>

- Establish a structure for cross-border collaboration and learning with North and Baltic Sea Countries
- Promote integrated, ecosystem-based governance in the Greater North Sea Basin;
- Facilitate the application of ecosystem-based MSP approaches;
- Provide practical solutions to enhance multi-use of marine areas;
- Support sea basin-level decision-making through a knowledge and data-sharing platform.

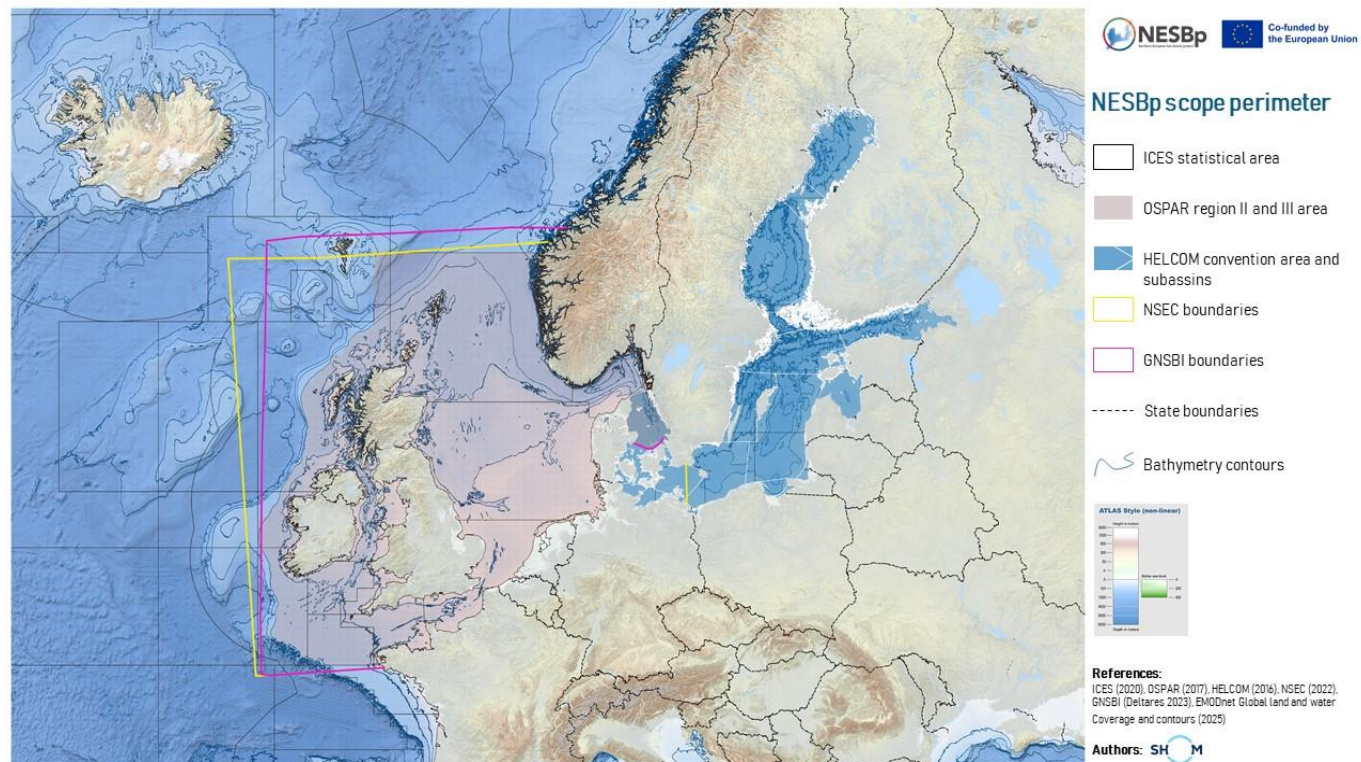


Figure 1: NESBp Scope perimeter

1.2. WP5 description

NESBp WP5 “*Knowledge transfer & sharing (for MSP)*” aims to provide significant advances must rely on the DIK(W) - Data-Information-Knowledge-(Wisdom) - approach as “backbone” of this WP, to support decision-making for a sea basin and digital MSP approach, linking the North Sea in the GNSBI context, and the Baltic Sea in the context of HELCOM-VASAB regional MSP cooperation. To plan geographical areas, whether on land or at sea, it needs a holistic view of the situation by drawing on a wide range of knowledge, must rely on geographical information derived from processed data.

□ *Key findings*

- **Data:** facts, signals or symbols numbered (quantitative) or lettered (qualitative), extract from a phenomenon studied, that have no meaning outside of the human mind.
→ the “foundation”
- **Information:** assemblage emerges through cognitive processing of data conveying certain meanings, arranged and ordered in a consistent way.
→ establish: what, when and where?
- **Knowledge:** collection of information linked with its associated context, giving a specific human understanding, which is reached through.
→ predict: know why and how?

Sources: [7] [8] [9]

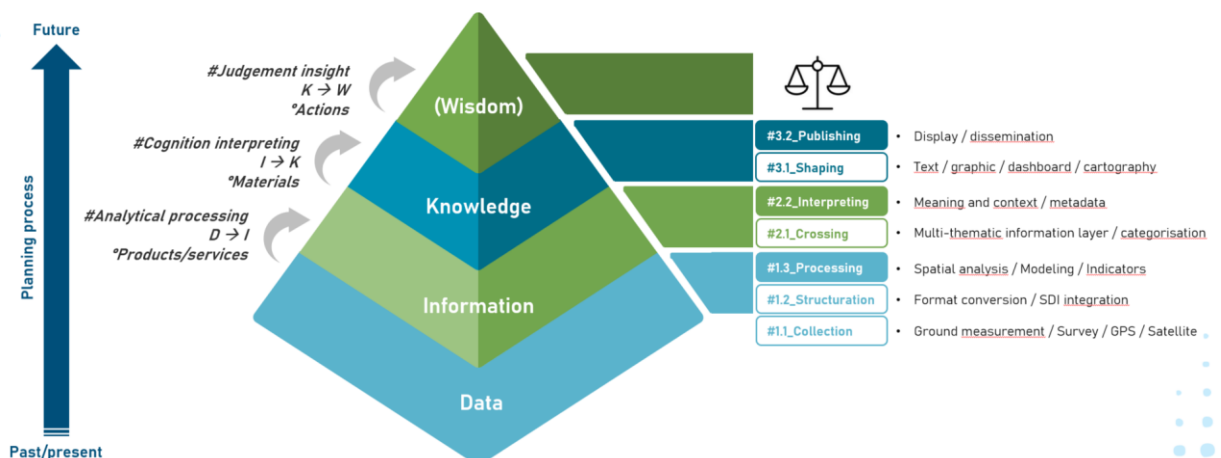


Figure 2: DIK(W) approach in MSP

In this framework, WP5 should contribute to informing the existing and future bio-physical and human environment at sea to improve MSP, and its principles [3] (Appendix 1). This includes providing practical support to different profiles of stakeholders involved in the various stages of the MSP process (holistic scope: scientists, MSP planners, policy makers, interest groups and citizens, etc.). This will ultimately enable an optimal development of human activities at sea in a sustainable manner within the carrying capacity of the marine ecosystem.

This WP5's objective fits into MSPD, Marine Strategy Framework Directive (MSFD), EGD EU, sea basin strategy frameworks, and the expertise provided by the [Technical Expert Group \(TEG\) on Data for MSP](#).

1.2.1. MSP informational challenge and gap analysis outputs

Since MSP became the contemporary mechanism for the rational organisation of national maritime spaces, certain issues/challenges have arisen. One of these concerns what we call “informational challenges”, in correspondence with the “digital turn” observed [10], i.e. all issues relating to Data-Information-Knowledge integration and quality in MSP. In this digital landscape, “Information” seems to be the keystone dimension. WP5 will focus on certain aspects through the following four tasks:

Tasks		Perimeter	DIK(W) scope	Leader
T5.1	<i>Evaluation of national plans consistency on maritime safety stakes for sea-basin coordination</i>	Improve one of the strategic geographic information as “missing layer”	<ul style="list-style-type: none"> ▫ Data (D) ▫ Information (I) 	Shom
T5.2	<i>Strengthen data services in EMODnet for MSP stakeholders</i>	Improve the European Marine Observation and Data Network marine <i>in situ</i> service as key player for MSP process	<ul style="list-style-type: none"> ▫ Data (D) ▫ Information (I) 	SSBE
T5.3	<i>Geographic dashboard/synthetic map</i>	Assess the quality of the information available in MSP geoportals (or MSP section in marine geoportals)	<ul style="list-style-type: none"> ▫ Information (I) ▫ Knowledge (K) 	Cerema
T5.4	<i>Development of knowledge-sharing platform</i>	Produce a type of geoportal focused on	<ul style="list-style-type: none"> ▫ Data (D) ▫ Information (I) 	Deltares

Tasks		Perimeter	DIK(W) scope	Leader
		knowledge sharing to support GNSBI	<ul style="list-style-type: none"> ▫ Knowledge (K) 	

Table 1: WP5 tasks

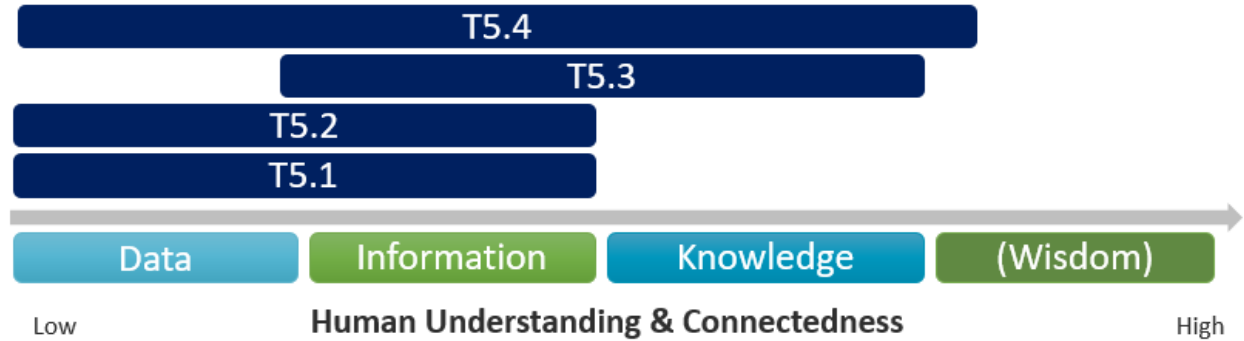


Figure 3: Different WP5 tasks within the DIK(W) scope

The NESBp's gap analysis phase (1st phase) identified a number of challenges at different scales, that were equally highlighted recently in academic literature [10] [11] [12] and by other European MSP projects [13] [14] [15]:

- ❖ **Immense number of thematic datasets available within the NESBp scope, but...**
 - ✓ Spatio-temporal and institutional coverage fragmented, outdated data or lack of data series, discrepancies in vocabularies used for tagging, sparse content/attribution information (including metadata), content not directly adapted for spatial planning exercise, not enough future-oriented;
 - ✓ No clear validation of and distinction between among other data originator, data provider and data disseminator;
 - ✓ Lack of clear data, metadata standardization process at national and sea basin level, and harmonised data model, wide disparity in terms of FAIR and INSPIRE compliance.

- ❖ **Missing in the Data-Information-Knowledge field:**
 - ✓ Misinterpretation between what is (geographic) "information" and what is (spatial) "data";

- ✓ “Missing layer” of strategic geographic information (e.g. “spatial squeeze” area, maritime safety risk heat maps, etc.);
- ✓ Heterogeneous interoperable quality of national MSP geoportals for addressing MSP stakes;
- ✓ Knowledge (understanding of the information acquired) divided and trapped in an unlimited present;
- ✓ Lack of specific knowledge requirements (e.g. “ecological collapse”, “spatial squeeze”, “maritime safety risk”) to strengthen the DIK challenges.

This initial overall assessment therefore enabled the identification of levers for action for the four tasks of WP5 during the NESBp's mapping phase (2nd phase).

The theme of this WP makes it a potential cross-cutting entity for all the other WPs in the NESBp. Finally, it will work in synergy with the MEDIGREEN project and its T4.4 Knowledge sharing and transfer, to strengthen the EGD components of data in MSP6.

⁶ <https://medigreenproject.eu/structure-of-the-project/>

II. DIK(W) approach in progress

2.1. T5.1 in progress

2.1.1. Presentation

In the spatial planning view, maritime safety (or navigation safety)⁷, is a key dimension to integrate for operational MSP initiatives, through the effectiveness of national MSP plan. Because it can provide strategic geographic information to define existing and future situation of the geographic area concerned on [16] [17] [18]:

- (i) The occurrence of hazards to maritime navigation, and therefore as a corollary, the potential risk areas;
- (ii) The possibilities for deployment and development of human activities at sea in function, particularly those with a fixed spatial and temporal footprint, such as Offshore Wind Farm (OWF);
- (iii) The environmental conditions of this geographic area.

If this dimension is clearly identified in Article 6.2.b of the MSPD, despite the gradual change in the maritime space occupation regime, and therefore the emergence of new potential risks for navigation, it is still not sufficiently integrated in the form of geographic information to guide the lifecycle of maritime spatial plans in European Member States (MS) waters⁸. While navigation safety is most often dealt with at sectoral level, for instance as part of a maritime traffic analysis or the planning of offshore wind farm projects, it is becoming essential to “scale up” this dimension in the context of a digital European MSP, coordinated at the level of sea basins.

To improve one of the strategic “missing layer”, the actions in T5.1 are structured as follows:

⁷ <https://www.imo.org/en/ourwork/safety/pages/navigationdefault.aspx>

⁸ <https://misp-or.eu/wp-content/uploads/2022/05/shom-technical-report-feasibility-study-fr-misp-or-extension-vf.pdf>

Project phase	Order	Objectives	DIK(W) scope
Gap analysis	5.1.1	<ul style="list-style-type: none"> Assessment of the national MSP plans and geoportals linked on safety of navigation integration → Are there types of plans that facilitate the integration of navigation safety?	DI
Mapping	5.1.2	<ul style="list-style-type: none"> Survey on how navigation safety is considered at national level → Referential of interoperable/harmonized input datasets to inform safety of navigation stakes at NESB scale	D
	5.1.3	<ul style="list-style-type: none"> Improve MSPex (MSP geocatalogue explorer) and Navisafe, (spatial Decision-Supporting tool - sDST - for maritime safety) currently in development into ReMAP 	DI
Completion and reflection	5.1.4	<ul style="list-style-type: none"> Feed new outputs for sharing on EMODnet (T5.2) & Knowledge sharing platform (T5.4) 	I

Table 2: WP5 T5.1 structure

This task primarily operates at the Data-Information levels of the DIK(W) framework, by working on data layers reference related to navigation safety and processing them into structured geographic information layers to support decision-making.

Some synergies with other tasks are highlighted:

- T5.2: geoportal assessment, navigation safety datasets identified
- T5.3: geoportal assessment
- T5.4: geoportal assessment, knowledge platform inputs for navigation safety

2.1.2. Gap analysis outputs

The gap analysis targeted to understand current national MSP initiatives, their legal and spatial frameworks in the NESBp scope perimeter. This baseline highlights the need to consider the latest developments in MSP research about the "digital turn" of MSP and the need for "recycling data" for an MSP effectiveness.

Methodology

The work was structured into two sub-tasks:

❖ T5.1.1.a – typology of national MSP plans

On the basis of research carried out by the research conducted by the University of Nantes on MSP⁹, the national MSP plans were cross-checked against key indicators: implementation cycle, geographic scope, spatial zoning detail, legal force, future orientation, digitalisation type & language (Appendix 2: glossary and indicators, Appendix 3: intermediate results).

❖ T5.1.1.b – evaluation of MSP national geoportals

Geoportals are crucial being one of the MSP governance processes pilar. DIK(W) indicators have been developed to assess geoportal scope on (Appendix 4):

- Data (technical inputs, predictive datasets, harmonised flows, eHILUCS values);
- Information (aggregated outputs, zoning, indicators, policy links);
- Knowledge (refined information, thematic analysis tools);
- Visualisation (static/dynamic viewers, EMODnet link, cross-border display).

Results

- Comparative table of MSP plan typologies for 17 NESB national political entities;
- Geoportal functionality matrix (DIK(W) criteria).

❑ **Key findings**

- **MSP plans across the NESBp scope perimeter show high heterogeneity** in structure, content and regulatory value;
- **Navigation safety requires fine-scale spatial analysis** to be effectively considered into MSP frame; some types of plans appear more suited for integrating it;
- **Geoportals are essential to address maritime safety**, but their quality and content vary widely across the NESBp:
 - *Different types of information are shared*
 - *Some portals offer functionalities adapted to plan types*
 - *A lack of coherence with the DIK(W) framework is observed*

⁹ Chapter 1: <https://theses.hal.science/tel-01961744v1/document>

2.1.3. Mapping phase and perspectives

Gap analysis validation

Intermediate results of national MSP plans typology need to be validated by relevant NESBp and GNSBI members.

Assessment for navigation safety integration in MSP

Two targeted surveys will be conducted to identify actionable improvements for navigation safety integration in MSP initiatives and refine tool development:

- MSP planners: to capture planning needs and assess the link with navigation safety side
- Navigation safety experts: to capture operational needs and assess the link with MSP side

A draft survey is ready and will be launched in October. Results will inform the data referential for navigation safety and the *Navisafe* development).

Tools development

This sub-task aims to:

- Upgrade *MSPex* for MSP planners and experts looking for key relevant datasets ;
- Develop *Navisafe* v2.0 for maritime safety-focused decision support in MSP.

A workshop is scheduled in Summer 2026 in cooperation with T5.2 (MS15) to share and discuss the results of the gap analysis and the surveys, and the *Navisafe* and *MSPex* development.

2.2. T5.2 in progress

2.2.1. Task presentation

T5.2 (Strengthen data services in EMODnet for MSP stakeholders) investigates the fit-for-use of the data offer of the European Commission marine *in situ* data service European Marine Observation and Data Network (EMODnet) for MSP practitioners. More

specifically, this task analysed (i) the percentage of data listed as relevant for MSP according to the MSP data Framework (MSPdF) detailed – produced by the [Technical Expert Group on Data for MSP](#) – represented in the EMODnet Map Viewer and/or EMODnet metadata Catalogue; and (ii) the share of map layers available in the EMODnet Map Viewer relevant for MSP. The results help understanding the fit-for-use of EMODnet’s data offer and identify the service’s main data gaps.

Within the DIK(W) framework, T5.2 strengthens the Data and Information pillars by assessing the availability, coverage, accessibility and interoperability of marine datasets in EMODnet relevant for MSP, thus improving the reliability of inputs used for knowledge generation in subsequent tasks.

Task 5.2 runs throughout the project lifetime and contributes to Data and Information of the DIK(W) concept. A workshop will be co-organised with T5.1 in Summer 2026, to discuss opportunities for EMODnet as the Spatial Data Infrastructure for MSP practitioners.

2.2.2. Gap analysis outputs

Methodology

To analyse the fit-for-use of the data offer of EMODnet, the data products in the EMODnet Map Viewer were cross-checked against the data categories in the seven data clusters of the Maritime Spatial Planning Data Framework (MSPdF), completed by Shom in the [MSP-OR](#) and ReMAP projects. When no EMODnet map layer could be found to match the data category, the EMODnet metadata Catalogue was searched for availability of relevant datasets/products.

Data sources and tools used

The mapping exercise was done in April-May 2025, based on the data clusters as defined in the Maritime Spatial Planning Data Framework (MSPdF) and cross-checking against the EMODnet data products freely accessible in the [EMODnet Map Viewer](#) (version 3.3.0 at the time of the exercise), and complementary the [EMODnet metadata catalogue](#) (running on GeoNetwork version 3.8 at the time of the exercise).

The MSPdF lists seven thematic data clusters, each containing multiple parameter categories, to structure spatial information and data that need to be considered within the full MSP process. These data clusters are: 1) marine & coastal environment, 2) marine & coastal conservation/designated sites, 3) oceanographic characteristics & climate, 4) coastal land use & planning, 5) operative maritime activities & planning, 6) socio-economic information, and 7) governance information. Thus, each data cluster in

MSPdF is structured with a standard architecture composed by a hierarchy of five scalable strata as an “umbrella” (see below example for data cluster 1):

CATp.1.1	Parent category - 1st level = MARINE BIODIVERSITY
CATp.1.2	Parent category - 2nd level = Flora life
CATc.1.3	Child category = Phytoplankton
CLAc1.3.1	CLAss child - 1st rank = Phytobenthos
CLAc1.3.2	CLAss child - 2nd rank = Specific species

Table 3: MSPdF completed by Shom

Results

Table 4 and Figure 4 below, demonstrate the share of MSPdF parameters represented in EMODnet. Based on the numbers, cluster 1 ‘Marine & coastal environment’ is best represented by EMODnet (80.82%), cluster 7 ‘Governance information’ is the least represented in EMODnet (19.15%). MSPdF cluster 6 ‘Socio-economic information’ is not represented in EMODnet, which corresponds to it not being in the scope of EMODnet as defined by EC DG MARE.

At the time of this exercise, i.e. April-May 2025, the EMODnet Map Viewer contained 639 data layers/products across the seven EMODnet thematics (excluding Data Ingestion and EMOD-PACE data layers). Of this, 339 data layers or 53% from the EMODnet Map Viewer could be mapped onto one or multiple parameter categories as defined by the MSPdF. When including EMODnet data layers related to the (relative) errors that accompany some data, this results in 437 data layers or 68.39% of EMODnet Map Viewer layers deemed relevant for MSP. The following table shows the total number of data entries in each cluster which could be relevant for MSP and are thus listed in this Gap Analysis exercise. It highlights the number of identified data gaps (not represented in EMODnet) and percentage of data entries that are represented by EMODnet for each MSPdF cluster.

MSPdF Clusters, documented by TEG on Data for MSP	Total number of MSPdF parameters	Number of data gaps in EMODnet	Number and percentage of MSPdF parameters per cluster represented in EMODnet
1 ‘Marine & coastal environment’	73	14	59 (80.82%)

MSPdF Clusters, documented by TEG on Data for MSP	Total number of MSPdF parameters	Number of data gaps in EMODnet	Number and percentage of MSPdF parameters per cluster represented in EMODnet
2 'Marine & coastal conservation/designated sites'	25	9	16 (64.00%)
3 'Oceanographic characteristics & climate'	75	28	47 (62.67%)
4 'Coastal land use & planning'	6	6	0 (0.00%)
5 'Operative maritime activities & planning'	189	94	95 (50.26%)
6 'Socio-economic information'	8	8	0 (0.00%)
7 'Governance information'	47	38	9 (19.15%)
TOTAL	423	197	226 (53.43%)

Table 4: Number of identified data gaps in EMODnet and percentage of data entries represented for each MSPdF cluster.

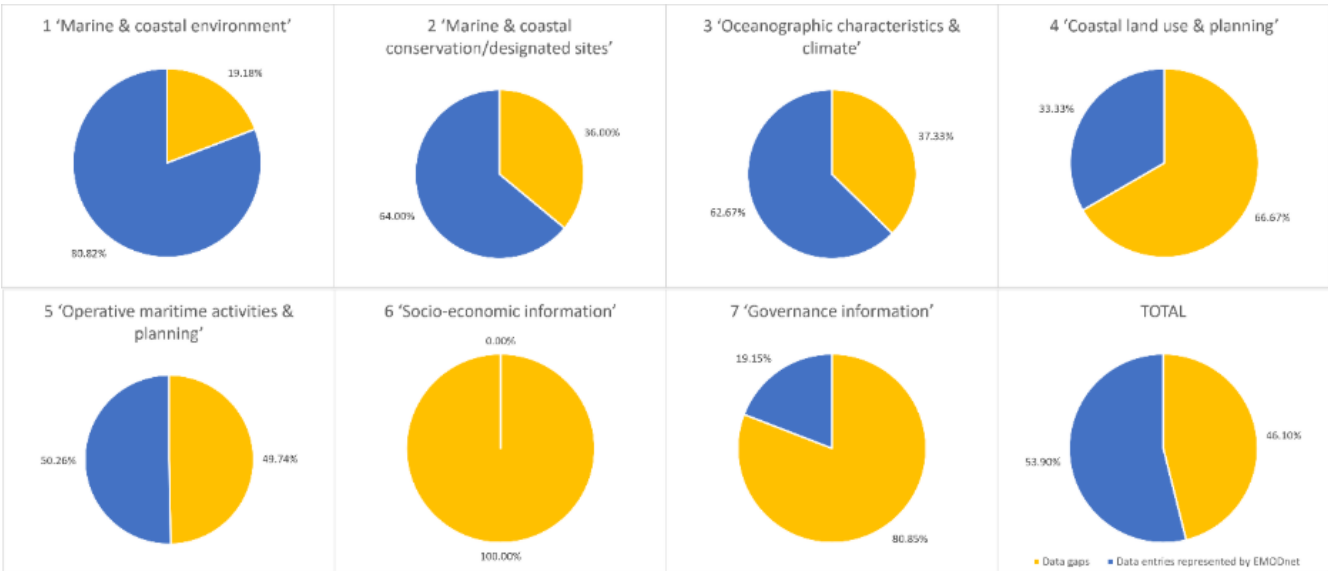


Figure 4: Percentage of data entries represented by EMODnet for each MSPdF cluster.

□ **Key findings**

- **EMODnet already makes available an elaborate data offer relevant for MSP practitioners, encompassing *in situ* marine environmental and human activities data, and data products across seven themes (bathymetry, biology, chemistry, geology, human activities, physics and seabed habitats);**
- **Outputs and recommendations from the study regarding the improvement of metadata and attribution information of EMODnet data products will be directly fed to the EMODnet Technical Working Group.**

2.2.3. Mapping phase and perspectives

Outcomes and insights resulting from the gap analysis phase will be reported back to EMODnet through the EMODnet Technical Working Group¹⁰ and ongoing metadata review. Targeted actions will be aimed towards improving the metadata of EMODnet data products, and as such to improve the fit-for-use of EMODnet for stakeholders, among which MSP practitioners.

In a next step, a survey will be developed to enquire insights into the about the availability and usability of EMODnet data and data products for MSP practitioners. The survey will be complemented by a workshop in Summer 2026, co-organised by Seascope Belgium and Shom (MS15), to discuss survey results, the results of the gap analyses and identify the needs of MSP practitioners from EMODnet.

2.3. T5.3 in progress

2.3.1. Task presentation

T5.3, integrated into WP5 “knowledge transfer and sharing”, aims to define synthetic geographic reference information and associated dashboards, to inform decision makers and stakeholders and contribute to a fair and efficient MSP process.

¹⁰ The EMODnet Technical Working Group gathers the coordinators and technical experts of the EMODnet thematic and data ingestion lots, as well as the EMODnet Secretariat and Central Portal Technical Team, and EC DG MARE.

This task addresses the Information–Knowledge interface of the DIK(W) framework by evaluating how information available in geoportals is transformed into actionable knowledge through interpretation, synthesis and visualisation tools.

Main steps

- Assessing the quality of information disseminated during MSP processes in some cases studies of the Greater North Sea basin (Step 1);
- Establishing guiding principles for the quality of information displayed in participative maritime spatial planning processes;
- Delivery of a set of synthetic maps and dashboard to improve public awareness on maritime spatial planning processes at the scale of the Greater North Sea basin (Step 2).

Task synergies WP5 & NESBp (relevance to WP5 and broader NESBp goals)

- Synergies within WP5, mainly with T5.2 (Strengthen data services in EMODnet for MSP stakeholders) and T5.4 (development of a knowledge- sharing platform), but also T5.1 (in particular T5.1.1.b – evaluation of MSP national geoportals).

2.3.2. Gap analysis outputs

A methodology was established in 2024, based on a study carried out by a group of master graduate students belonging the Ecole Nationale des Ponts et Chaussées (ENPC - french engineering school), and proposed by Cerema, during the public debate organized prior to the French MSP update process (2nd cycle). Tested on the information available concerning biodiversity in the French Mediterranean Sea basin, it concluded that the quality of the available information was lacking in several respects. Building on this initial work, the methodology was adapted to the specific context of NESBp. The assessment will focus on the information that can be found in geoportals of the North Sea region, using the inventory carried out under T5.1.1.b. This task also shows that in the DIK(W) typology, the K category is deficient.

A description of the methodology has been communicated to the WP5 partners and is available in a specific note (Appendix 6). The overall work of this task consists in several points:

- 1) Finalisation of the methodology (end of September 2025);

- 2) Assessment of the information made available on geoportals using the methodology developed;
- 3) Select and establish synthetic geographic reference information and associated dashboards at national (French) and North Sea levels.

❑ **Key findings**

- **High disparity in the quality of information** provided within geoportals (GNSBI scope perimeter);
- The information available on geoportals is **not sufficiently knowledge-based**, according to the DIK(W) approach.

2.3.3. Mapping phase and perspectives

- Final validation of the methodology;
- Implementation of the assessment, at national level (France by Cerema and, if possible, in a second Country with another NESBp partner) and regional level, of geoportals: for the latter, ENPC master graduate students will be in charge of interviews with targeted audience at GNSBI level. This work should be completed by surveys (Appendix 7). A similar work with HELCOM- VASAB secretariat at Baltic Sea level is envisaged;
- Workshop (first half of 2026) to share and validate the results;
- Guidelines for improving knowledge;
- Establishment of a set of geographic reference information and associated dashboards, to feed the French national geoportal “Géolittoral” and the future knowledge sharing platform at GNSBI level.

2.4. T5.4 in progress

2.4.1. Task presentation

T5.4 aims to further develop a knowledge-sharing platform for GNSBI/NESBp as an application for maps, data and information exchange, in order to facilitate integrated, cross-sectoral and cross-boundary cooperation in Marine Spatial Planning decision-making. It is expected to deliver a prototype of an information service tool, integrating existing modelling/digital twin tools in the Greater North Sea Region. It will, where possible, make use of the data, information and experience obtained in EMODnet, HELCOM Basemaps, OSPAR, ICES, and the proof-of-concept map viewer and information service that has been developed in GNSBI.

T5.4 corresponds to the upper level of the DIK(W) continuum, by structuring the Knowledge produced with Data and Information in previous tasks into a shared, interactive platform. In later stages, this task will initiate the transition towards the “Wisdom” level, enabling cross-basin learning and strategic foresight within GNSBI and HELCOM-VASAB frameworks.

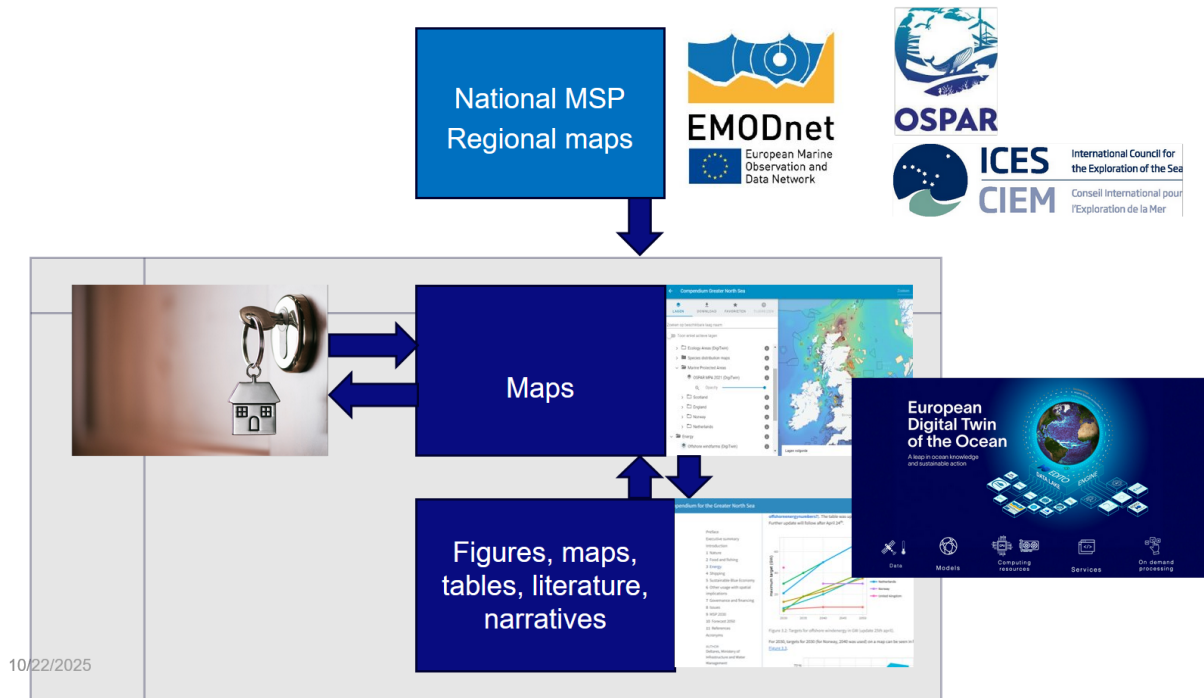


Figure 5: Elements of the roadmap towards a knowledge-sharing platform

Further elements of the roadmap were defined in GNSBI, and contain a secure environment for sharing sensitive data, and to explore the assimilation of the platform into EDITO (Figure 5).

2.4.2. Gap analysis outputs

A gap analysis was conducted for existing data, information and/or knowledge sharing platforms, in order to identify whether there are existing tools that already provide (part of) the service aimed for in this task.

Results from previous EU projects and the GNSBI gap analysis were used as a basis.

Portals were rated by:

Rating subject	Requirement
Type of content	MSP-related maps and information
Geographical extent	Greater North Sea
Thematic scope	Nature, Fisheries, Energy, Shipping, other...
Type of content DIK(W)	Not just data and maps, but also information and knowledge products to provide wisdom for decision making process

Table 5: Portal rating

The conclusion was that no platform met all the requirements for GNSBI/NESBp yet. EMODnet and European Atlas of the Seas were among the highly rated. Most portals convey data and information. The exchange of knowledge connected to the geographic data and information, which indeed is less defined and therefore more difficult, was rarely encountered (Appendix 7).

We conclude that there is a strong need and an opportunity for a new platform in order to share data, information and especially knowledge in the maritime spatial planning scope between the NESBp countries (Appendix 8).

Key findings

- There are portals that overlap greatly with the requirements of a GNSBI MSP knowledge sharing platform. **But there is none with exactly the needed geographical, thematic scope and content.**

- It appears to be especially challenging to find ways to share knowledge related to MSP processes in a structural way for different users.

2.4.3. Mapping phase and perspectives

Further development of the knowledge sharing platform

In the framework of GNSBI, a proof-of-concept platform was made to share data, information and knowledge, consisting of a web map viewer and a separate online document (compendium) with an overview of relevant knowledge (see Figure 6). The products are fully functional but only contain limited information. Although it was possible to link from the compendium to the map viewer, no thorough connection was made yet.

In a series of workshops/brainstorms the following elements were identified as further important features of the platform:

- Set-up platform to tailor to different users (policymakers, MSP experts, Sectoral actors, General public) and;
- Set-up to effectively provide different types of information (input data, knowledge base, MSP zoning) depending on the requirements of user(s).

In order to better define the needs of different users with respect to the knowledge platform, a large number of key questions were identified for the different users and types of information. Awaiting the outcome of surveys over the summer, a step was taken for a better integration of the existing geographic map viewer and the content-based compendium. A minimal working version was made by Deltares in collaboration with SHOM during an intensive workshop at the SHOM institute and presented to colleagues from Seascope Belgium (T5.2) for first feedback. The platform consists of a user interface with input choices depending on type of user and type of information, with linked output maps and interpretative text.

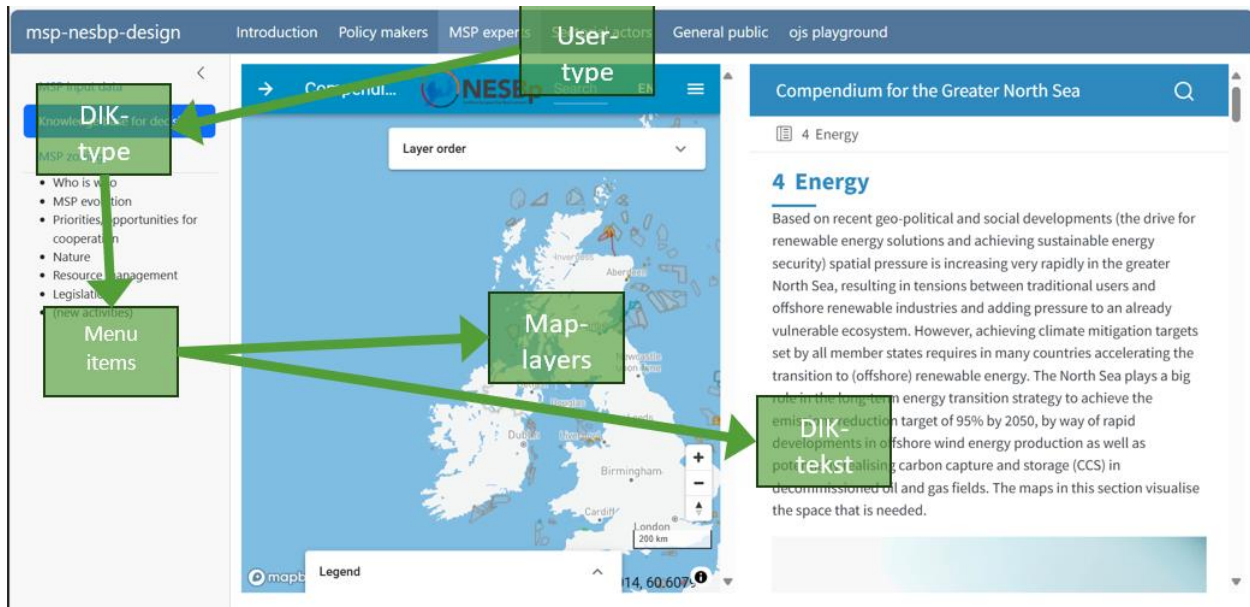


Figure 6: Minimal working version of the knowledge platform

This version consists of a web framework where the map viewer and compendium are intimately connected. The side bar directs to web content in the main window (map viewer and compendium) depending on the type of user and requested information. A database is built which feeds into the user interface and distils the presented information as maps and interpretive text (Figure 6). Next steps include receiving feedback from the GNSBI community and constructing the database for the platform.

Secure environment for data

Within GNSBI there is a need for sharing sensitive data (e.g. raw data on fisheries). A secure environment was set up within the Deltares ICT infrastructure. The elements that are used are compatible with the file sharing and user management routines that are used in EDITO (see next section).

Next steps are to test the user-friendliness of the secure environment by GNSBI working track members.

Exploration of integration in EDITO

The GNSBI steering group has indicated that the knowledge platform should at a later stage be able to be hosted by and interact with other elements of EDITO. Exploratory discussions between GNSBI and EDITO steering groups have taken place. There appears to be a mutual interest for integration of GNSBI knowledge platform and EDITO. Next steps are to explore in detail the technical requirements for transfer of a knowledge platform to EDITO.

Conclusion

As an initial deliverable concluding the gap analysis phase of the project, this fact sheet provides a necessary analytical baseline to complete WP5 objectives. By applying the DIK(W) framework, WP5 has clarified the key informational challenges in Maritime Spatial Planning, for instance identified critical data and information-knowledge gaps, and therefore mapped priority areas for action. These insights establish a solid foundation for the next WP5 project phases to improve/develop tools, dashboards and knowledge-sharing platforms, and strengthen EMODnet to support MSP decision-making at sea-basin level.

❑ *Key findings*

- **High heterogeneity of national MSP plans and geoportals** across the NESBp scope perimeter;
- **Fragmented spatiotemporal datasets**, limited interoperability (FAIR/INSPIRE compliance uneven) and weak harmonisation process (data model standard);
- **Confusion between “data” and “information”**, and insufficient integration of strategic geographic information to support MSP decision-making;
- **Lack of future-oriented knowledge** (e.g. climate refugia areas);
- **Need for user-oriented knowledge platforms** to connect data, information, and knowledge to improve MSP decision-making at a sea basin level.

While the present deliverable focuses on the Data–Information–Knowledge dimensions, the “Wisdom” level has not yet been explicitly implemented. This choice reflects the current maturity of MSP data and information systems: most available datasets remain fragmented and are only starting to be converted into structured information and shared knowledge.

The integration of “Wisdom” subpart, understood as the capacity to use consolidated knowledge for strategic foresight and adaptive governance, will occur progressively through the development of the knowledge-sharing platform (T5.4). This platform aims to provide the environment and community processes required to transform collective knowledge into actionable insights for cross-basin MSP coordination.

WP5 next steps and priorities:

Task		Priorities and next steps	DIK(W) scope	Sea-basin level objectives
T5.1	<i>Evaluation of national plans consistency on maritime safety stakes for sea-basin coordination</i>	<ul style="list-style-type: none"> ✓ Validate MSP plan typology ✓ Launch surveys with MSP practitioners and maritime safety experts ✓ Develop MSPex and Navisafe v2.0 	DI	Strengthen MSPD implementation and ensure safer and global planning across sea basins.
T5.2	<i>Strengthen data services in EMODnet for MSP stakeholders</i>	<ul style="list-style-type: none"> ✓ Assess user needs ✓ Coordinate and implement EMODnet improvements for MSP users (extending metadata, tagging and interoperability) 	DI	Improve the reference European data platform for MSP
T5.3	<i>Geographic dashboard/synthetic map</i>	<ul style="list-style-type: none"> ✓ Finalise methodology; ✓ Assess quality of geoportal information ✓ Produce reference dashboards validate results in workshop 	IK	Support transparency, participation and evidence-based decision-making in line with the MSPD and Green Deal principles.
T5.4	<i>Development of knowledge-sharing platform</i>	<ul style="list-style-type: none"> ✓ Continue the development of the knowledge platform, ✓ Collect feedback from GNSBI ✓ Test secure environment ✓ Explore EDITO integration 	DIK	Provide a digital platform for cross-border cooperation for North Sea governance frameworks

Table 5: WP5 priorities by task

Moreover, the four tasks of WP5 are designed to be complementary:

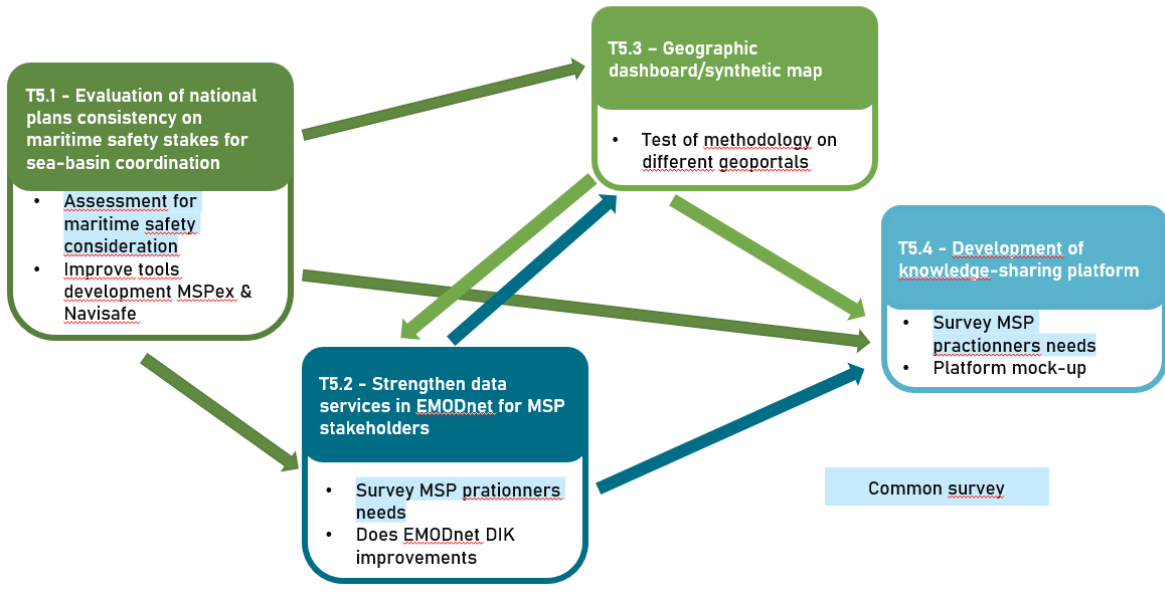


Figure 7: WP5 synergies

This interconnection ensures that the outputs are not fragmented, but mutually reinforcing, progressively building a robust “digital backbone” for basin-scale MSP. The analytical work presented here is a strategic starting point, ensuring that subsequent activities will be better targeted, interoperable, and directly relevant to MSP decision-makers and practitioners across the Greater North and Baltic Sea basins.

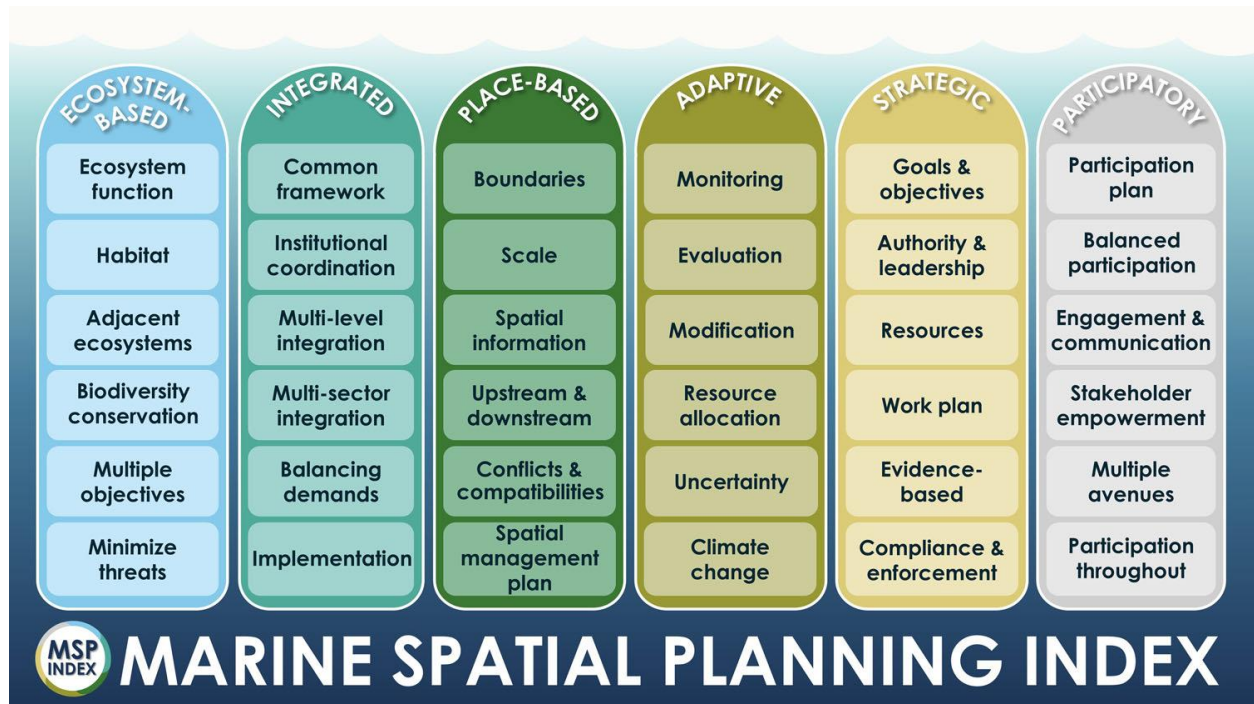
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Appendix

Appendix 1: Features of the MSP Index under the six foundational principles



Source: [3]

Appendix 2: T5.1_Glossary and indicators for national MSP plans typology

Indicators	Code	Description
MSPD 1st impl ^o	year	Year of first implementation
Cycle	1st, 2nd, 3rd, etc +	Number of cycle of the binding plan
Geographic scope	EEZ	Exclusive Economic Zone
	TS	Territorial Sea
	IW	Internal Waters
	other	
Nbr of plans	XX	Number of plans
I1-area: location	<i>free text</i>	Indication of the location
I2 - spatial pattern	BROAD	BROAD Zoning: large-scale zoning, without detailed spatial distribution for specific sea-use category - "fuzzy zoning"
	FINE	FINE Zoning : fine-scale zoning, with clearly defined spatial distribution for specific sea-use category - "lacy zoning"
I3-legal force	INDI	INDI cative: general objectives without legal requirement, legal requirement is implemented in parallel at national or local strategy level - MSP as an "implementer/disseminator"
	PRESC	PRESC riptive: zoning with legal requirement, direct or indirect with legal requirement on the national or local strategies - MSP as a "driver/decision maker"
I4 - Future oriented	PROSP	PROSP ective: broad scenario (even sectorial) based on exploring open future situation -> Example: general overview of IPCC rates/indicators (e.g. +1.5°C and so on...)
	PREDI	PREDI ctive: fine scenario (even sectorial) based on modeling (tools/models) exploring specific/restrictive future situation, often with spatial impact consideration -> Example: "climate refugia area" produced by Sweden MSP strategy
I5-digitalisation: sharing	DATAp	DATA portal: map viewer with no possible interfacing & no information
	GEOInp	GEOin formation portal: map viewer with possible interfacing & metadata information completed
	KNOWp	KNOWLEDGE platform: map viewer with informational structure and knowledge content linked
	UN	UN determined
I5bis-digitalisation: language	ORIG	ORIG in language only, different than english
	ENG	ENG lish version only
	DIFF	Available DIFF erent langugaes (origin + ENG/ + other)

Appendix 3: T5.1_Intermediate results of national MSP plans typology

		MSP national plans						Indicators					
Sea basin	Country	MSPD 1st impl ¹	Cycle	Geo scope	Nbr of plans	11-area		12- legal force	13-spatial pattern	14-future oriented	Sharing	Language	Links
						location							
GNS	Belgium	2014	2nd MSP plan (2019)	EEZ+TS	1	Belgian north sea	PRESC	FINE	PREDI	DATAp	DIFF	https://www.atlasmarin.be/	
GNS	Netherlands	2009	3rd (2009/2015/2021)	EEZ+TS	1	Dutch north sea	PRESC	FINE	PREDI	DATAp	DIFF	https://viewer.openearth.nl/water-info-extra-viewer/	
GNS+BS	Germany	2009	3rd (2009/last 2021)	EEZ	2	German NS + BS	PRESC	FINE	PROSP	DATAp	DIFF	https://www.geoseaportal.de/mapapps/resources/apps/meeresnutzungen/index.html?lang=en	
GNS+BS	Denmark	?	2nd (2021, agreement 2023)	EEZ+TS+HW	1	Danish NS+BS	PRESC	FINE	PROSP	GEONp	DIFF	Danmarks Havplan	
BS	Poland	2021	1st (2021)	EEZ+TS+HW	1	Polish Baltic Sea	PRESC	FINE	PROSP	DATAp	ORIG	https://siadam.gov.pl/geoportals	
BS	Lithuania	2015	2nd (2015/2021)	EEZ+TS+HW	1	Lithuanian Baltic Sea	INDI	FINE	PROSP	DATAp	ORIG	https://tdr.pl/nuolustatau.lt/map/main.html?lang=lt&tol=52.605	
BS	Latvia	2019	1st (2019)	EEZ+TS+HW	1	Latvian Baltic Sea	INDI	FINE	PROSP	DATAp	ORIG	https://geolab.lv/main?geoproductsopen	
BS	Estonia	2022	1st (2022)	EEZ+TS+HW	3	Estonian Baltic Sea	INDI/PRESC (Hiumea)	FINE	PROSP	DATAp	DIFF (EE,EN)	https://experience.arcgis.com/experience/6f58b9a06a994e7bb76e0ca1262f932d24e2771487995a7cc41fdca11c4	
BS	Finland	2020	1st (2020), 2nd (revision in process, started 2024)	EEZ+TS+HW	3	*The Northern Bothnian Sea, Quark and Bothnian Sea, Archipelago Sea and Southern Bothnian Sea, *The Gulf of Finland	INDI	FINE	PREDI	DATAp	DIFF (FI,EN,SE)	https://mspfinland.maaps.arcgis.com/apps/webappviewer/index.html?id=597f9d24e2771487995a7cc41fdca11c4	
GNS+BS	Sweden	2022	1st (2022), 2nd (revision in process started 2025.01)	EEZ+TS	3 in 1	*The Gulf of Bothnia, *Swedish Baltic Sea, *Western Waters (Skagerrak/Kattegat) (NS)	INDI	FINE	PREDI	DATAp/NOT AVAILABLE	ORIG	https://www.havochvatten.se/vagledning/foreskrifter-och-lagar/vagledning-ar/haussolamer/osterstern.html	
GNS	England	2014	1st (2014/2021/2021/2018)	EEZ+TS+HW	11	East inshore&offshore+North east	PRESC	BROAD	PREDI	GEONp	ENG	Explore marine plans	
GNS	Scotland	2014	1st	EEZ+TS+HW	2	Inshore and offshore / North sea, Atlantic sea	PRESC	BROAD	PROSP	DATAp	ENG	Marine Scotland - National Marine Plan, Interacting	
GNS	Wales	2019	1st (2019)	EEZ+TS+HW	2	Inshore and offshore regions	PRESC	BROAD	PROSP	DATAp	ENG	Wales Marine Planning Portal	
GNS	Ireland	2021	1st (2019)	EEZ+TS+HW	1	National Maritime planning framework	INDI	BROAD	PREDI	DATAp	ENG	https://www.marineplan.ie/Pages/Activities-Map-%28BRET%29	
GNS	Norway	2013	3rd (2013/XXXX/2020)	EEZ	3 in 1	North sea, Skagerrak	INDI	BROAD	PROSP	X	?	no.seoportal dedicated to MSP	
GNS	France	2017	1st (2017), 2nd (revision in process)	EEZ+TS+HW	4	East Channel North sea/North	INDI	BROAD	PROSP	DATAp	ORIG	https://geolittoral-data.cerema.fr/parts/apps/experiencebuilder/experience?id=18c9fad68426	
GNS	Northern Ireland	2018 draft	2018 - draft, not published yet	EEZ+TS+HW	2	Inshore and offshore	INDI	BROAD	PROSP	NOT AVAILABLE	ENG	https://ais.dpera-ni.gov.uk/acaps/apps/webappviewer/index.html?id=44a8e27333241bf62bf6fa	

Appendix 4: T5.1_Glossary and indicators for the typology of national geoportals

DIK(W) indicators	N°	Scope	Criteria	Description
ID1 Data	1	Tech	Input data (background data)	Data taken into account in the planning process
	2	Tech	Predictive data (future-oriented)	Data from predictive analytics during plan development
	3	*MSP	Logical data categorisation	MSPdF framework
	4	Tech	eHILUCS value	Code from extended Hierarchical INSPIRE Land Use Classification System (HILUCS) https://www.geoportal.ulpgc.es/registro/plannedLandUse/HilucExt/index.html
	5	Tech	Data harmonisation	Data layers harmonised into EU data model framework (e.g. EMODnet data model) to ensure interoperability
	6	*MSP	Data automatic updating	Harmonized data layers format (using/harvesting of data flows), standardized format WFS and WMS flows to ensure interoperability and automatic updates
	7	Tech	Adding data (layer)	Functionality - ability to add a user layer (specified formats) from the browser
	8	Tech	Data download	Functionality - ability to download data (selected data) from the browser
ID2 Information	1	*MSP	Output data layers harmonized / aggregation of uses and co-uses data	A single layer showing all the uses data with particular attribute for each of one
	2	*MSP	Output data zoning/plan	MSP zoning areas available
	3	Tech	Raw information	Metadata completed
	4	Tech	Restricted access	Access to some information only for selected user groups, login required
	5	*MSP	Indicators	Indicators resulting from the combination/comparison (analysis) of several data (monitoring)
	6	Tech	Data overlay (creation of new informations)	Possibility to create a new information layer
	7	*MSP	Obtaining spatial information	Possibility to select a location (point) / area (polygon) and obtain aggregate information about this zone
	8	*MSP	Link to policy	Link to policy (sectorial policies) or planning documents
ID3 Knowledge	1	Tech	Refined information	Collection of information linked with its associated context for cross-cutting thematic (e.g. climate change impacts for MSP plans)
	2	Tech	Editing tool	Possibility to edit some shared layers (limited access, only for designated user groups) - draw a specific area
	3	Tech	Analysis tool	A tool provide information on transversal thematic as navigation safety, CIA, etc.
ID4 Visualisation	1	Tech	Static map viewer	Classic map viewer, often with a fixed zoom, often without basic user functions like turning layers on/off, zooming in/out, taking an information
	2	Tech	Dynamic map viewer	Dynamic map viewer, fully interactive and functional - user can modify and explore the map freely using basic and advanced map tools: zoom, pan, click information, turn on/off layers etc.
	3	Tech	Smooth/efficient/GIS-enabled	The application runs smoothly and efficiently, using GIS environment
	4	*MSP	Link with EMODnet	MSP output data is implemented and visible in the EMODnet portal
	5	*MSP	Cross-border MSP	Cross-border area, with visible MSP zoning areas data layers from the neighboring country
	6	*MSP	Module dedicated to MSP practitioners	Possibility to switch to advanced mode, available after logging in for authorized users (administration, practitioners)

Appendix 5: T5.2_Example of the analytical grid for MSPdF data cluster 5

OPERATIVE MARITIME ACTIVITIES & PLANNING				DATA MODEL			DATA QUALITY				Notes
CATS.1	CATS.2	CATS.3	CATS.3.1	CATS.3.2	MSP EMOdnet	EMOdnet sub-items	Spatial coverage	Temporal coverage	Metadata	Catalogue results (if applicable)	Notes
Fishery Production											
Acquaculture (syn: Fish Farming)											
<i>Marine Farming</i>											
				1	Gap	Human Activities; Aquaculture	/	/	/	/	/
			Regulatory marine farm zones (syn: aquaculture concession)								
			Fish production	1		Human Activities; Aquaculture	Europe	unknown: not immediately/obviously	Yes		Points
			Shellfish/molluscs production	1		Human Activities; Aquaculture	Europe	unknown: not immediately/obviously	Yes		Points
			Seaweed production	1		Human Activities; Aquaculture	Europe	unknown: not immediately/obviously	Yes		Points
			Freshwater finfish production	1		Human Activities; Aquaculture	Europe	unknown: not immediately/obviously	Yes		Points
			Fishery (syn: fishing)								
			Professional fisheries/fishing (syn: commercial)			Human Activities; Fisheries	/	/	/	/	/
			Fishing area	1		Human Activities; Fisheries	Global	unknown: not immediately/obviously	Yes		Multiple datasets presented in multiple layers/multiple representation. Also available: fish Quotas by FMZ and Level; Fish Quotas by FMZ and Species
			Regulatory fishing zone (syn: fishing restriction)	1		Human Activities; Fisheries; Fish Quotas	Global	1950-01-01 to 2016-12-31	Yes		Multiple datasets presented in multiple layers/multiple representation. Also available: fish Quotas by FMZ and Level; Fish Quotas by FMZ and Species
			Fishing effort	1		Human Activities; Fisheries; Fishing Effort by FAO Area/GFCM Subareas and Country	Europe	1950-01-01 to 2016-12-31	Yes		Multiple datasets presented in multiple layers/multiple representation. Also available per Vessel type
			Fishing intensity	1		Human Activities; Fisheries; Fishing Intensity	Northeast Atlantic	2017-01-01 to 2022-12-31	Yes		Multiple datasets presented in multiple layers/multiple representation. Also available: Average Surface Swept Area Ratio
			Fishing gears	1		Human Activities; Fisheries; Fishing Intensity	Northeast Atlantic	2017-01-01 to 2022-12-31	Yes		/
			<i>Dredges</i>								
			more data available in the catalogue								Search term "trawling" also gives results for beam trawling and bottom trawling (bottom pair trawling and/or bottom otter trawling?) the period 2013-2017* and *1990-2001
			<i>Trawling</i>	1							

Appendix 6: T5.3_A methodology for the assessment of the quality of information from existing geoplatforms dedicated to MSP, in terms of contribution to public debate

Definitions

- **Responsible authority:** the public body or group of public bodies in charge of a political process and organising a consultation/participation procedure, and providing related information to the participants
- **Target groups:** the public identified or chosen by the responsible authority as being the stakeholders
- **Information:** a set of knowledge and data given or received concerning one or several topics
- **Object:** medium transmitting information (image, sound, text, graphics, maps, etc. in our study we focus on maps/GIS layers)
- **Corpus:** set of objects
- **Transmission mode:** conditions defined by a targeted public, a mediator, a place, a duration and rules established for the public information and participation
- **Arena:** element of the public participation organisation consisting in an information corpus and a transmission mode

to be completed if needed

Objectives

Task 5.3, integrated into WP5 “knowledge transfer and sharing”, aims to define synthetic geographic reference information and associated dashboards, to inform decision makers and stakeholders and contribute to a fair and efficient maritime planning process.

To achieve this, T5.3 involves the following main steps: establishing guiding principles for the quality of information displayed in participative maritime spatial planning processes by geoportals, based on results from cases studies of the greater North Sea (Step 1); and the delivering of a set of synthetic maps and dashboard to improve public awareness on maritime spatial planning processes at the scale of the Greater North Sea basin (Step 2).

This document focuses on Step 1. As background experience, this step 1 first involves gathering feedback about the information made available to target audiences in several case studies at national and sea basin levels, in order to better define both the nature of the synthetic information that would be relevant to communicate and the form in which it should be presented. Then, the case studies will consist in an assessment of the quality of the geographic information provided by geoportals in particular political processes:

- In France: The geoplatform *Géolittoral* (section “reference informations for maritime planning”) in the context of the 2024 public debate prior to the updating of the French sea basin strategy of the Eastern Channel and North Sea;

- In another Country, to be determined, for a second national assessment;
- At GNSBI scale, to be determined, two options possible: 1/ the information provided by OSPAR and NSEC in a virtual mutual planning process; 2/ EMODnet Atlas confronted with the GNSBI;
- (optional) In the Baltic: HELCOM Map and Data service (section indicators and assessments) and HOLAS 3 in the context of the Baltic Sea Ministerial Meeting 2024.

The objective consists in assessing how far the information provided to the target groups by the responsible authority, in a particular consultation/participation process, considering the concerns of both parties, is efficient and meeting the expectations, based on criteria applied to the corpus of objects and objects constituting the information. To narrow the scope of the assessment, case studies should focus on information available in geoportals concerning the development of offshore wind farms and the designation of strictly protected areas.

Method (can be adapted to better address each case study)

The methodology is derived from a study carried out by a group of students supervised by Cerema (*GENTRIC, Jessica, NIEL Quentin, SUIRE, Matthieu, TEMAM-BASSE, Stanislas, Cerema, Informer efficacement le débat public sur la biodiversité marine - rapport d'étude*) which assessed the quality of the geographic information about marine biodiversity made available to the public, in the context of the 2024 public debate prior to the updating of the French Mediterranean Sea basin strategy.

The results of this step should enable us to improve the grid of quality criteria and better identify the corpus of information to be developed at the second step.

The methodology includes the following stages:

- 1- The description of the decision process at stake and the role of the consultation/participation in it, who is the responsible authority, who are the target groups and the arenas set up.
- 2- The identification of the concerns of both parties in the consultation/participation process:
 - a. Responsible authority: e.g. satisfying legal obligations, raising awareness, gathering empirical knowledge, improving political decisions, dealing with questions source of conflict... (list to be completed);
 - b. Target groups: preserving their activity, gaining opportunities, influencing political decisions... (tbc);
 - c. Hidden concerns: resulting from an inconsistency between concerns expressed by the above parties (for example, incomplete information on a subject of debate), or between their concerns and larger political frameworks (e.g. OSPAR, EU Policies, UNFCC...).
- 3- The confrontation of the information corpus (geographic layers, maps, dashboards, ...) to the state of the art of available knowledge¹
- 4- The critical analysis of the information corpus and their objects (a selection of them) through the following criteria:

- a. Corpus: completeness, parsimony;
- b. Object: legitimacy, credibility, relevance, readability, accessibility.

Criteria

Corpus

Completeness: it covers all issues at stake to avoid bias in their understanding; it provides all information necessary to deal with the questions in debate.

Parsimony: balance between simplicity and completeness; avoid redundancy.

Object

Legitimacy: it is in relation with the effective concerns of the target audience; it does not present obvious bias.

Credibility: referenced sources proceeding from agreed scientific processes.

Relevance: usefulness in relation to the issues under discussion, it displays the constraints under which is the forthcoming decision, and it presents a precision enough for decision making, both in terms of scale and temporality.

Readability: synthetic character (providing the strictly necessary information) and easiness (standardised and simple vocabulary).

Accessibility: make the public aware of it and easy to find and to visit.

Analysis grids

The following grids give more insights in the different criteria and provide a scoring system to guide the assessment and quantify the results.

Analysis grid applied to objects

Legitimacy	
1/4	Does not address any concerns.
2/4	Responds to an identifiable concern of one stakeholder.
3/4	Responds to a concern spontaneously expressed by one or more stakeholders.
4/4	Responds to a concern spontaneously expressed by several stakeholders, including the general public.
-1	Eliminates an area of concern unilaterally, includes a bias.
Credibility	
1/5	Some of the object's essential information is unsubstantiated (absence of explicit sources), or even false (contradicted by evidence) or in contradiction with the scientific consensus.
2/5	The essential information in the object is substantiated, but with a low level of evidence (isolated expert opinion, case study or grey literature) and/or a lack of traceability of sources that prevents the quality of the evidence from being assessed.

3/5	The object's essential information is based on a level of evidence limited to expert opinion from a scientific body or an isolated scientific publication, but established in accordance with the state of the art.
4/5	The object's essential information is based on strong evidence (body of evidence established in accordance with the state of the art, meta-analyses) and explicit sources but is the subject of scientific controversy (discordant evidence identified).
5/5	The object's essential information is based on a high level of evidence (body of evidence established in accordance with the state of the art, meta-analyses) and explicit sources and is the subject of strong scientific consensus (no significant discordant evidence identified).
Relevance	
1/5	The information is not useful for answering one of the questions raised.
2/5	The information is potentially useful for answering one of the questions in the debate, but is not sufficiently specific (wrong scale, etc.).
3/5	The information is useful for answering a question in the debate but is difficult to link with other relevant considerations for answering the same question.
4/5	The information is useful for answering a question in the debate and is articulated or easily articulated with other relevant considerations but remains difficult to articulate with certain other essential considerations (and therefore may not be suitable for certain decision-makers).
5/5	The information is useful for answering a question in the debate and is articulated with all other relevant considerations in a format that can be easily adapted to a decision-maker's specific objectives.
Readability (score starts at 1/5)	
+1/5	Clear legend.
+1/5	Vocabulary understandable to the general public.
+2/5	Synthetic document.
Accessibility	
1/4	Object almost impossible to find in its arena.
2/4	Object accessible in a particular corpus.
3/4	Object accessible via different corpuses and modalities.
4/4	Clearly highlighted object.

Analysis grid applied to corpus

Completeness	
1/5	The corpus contains no information relevant to the questions posed.
2/5	The corpus includes relevant information but omits information on key issues.
3/5	The corpus includes information on multiple issues that are contextualized, but omits information needed to answer the questions posed.
4/5	The corpus covers all the information needed to meet the objectives of the debate, but there is an imbalance in the presentation of information that may lead to biases in the perception of the issues at stake.
5/5	The corpus includes all the information needed to understand the issues and meet the objectives of the debate (arbitration, information) and is balanced.

Parsimony	
1/4	The corpus includes unnecessary or superfluous details that complicate understanding.
2/4	The corpus presents a simple explanation but lacks conciseness and contains redundant elements.
3/4	The corpus offers a relatively concise explanation and avoids unnecessary detail but could be simplified further.
4/4	The corpus strikes an optimal balance between simplicity and completeness, offering a concise explanation that covers all relevant aspects in a clear and accessible way.

Material

The material for the assessment consists in the documents related to the case study and in surveys dedicated respectively to three types of audiences:

- Responsible authorities: semi-directive interviews;
- Experts: semi-directive interviews;
- Target groups: online questionnaire and sample of interviews.

What for	Material
Description of the decision process	- Documents (legal framework, overarching policy, political decisions...) - Survey Authority
Concerns of responsible authority	- Documents (presenting the consultation/participation) - Survey Authority
Concerns of target groups	- Documents (stakeholders' contributions, reports) - Survey Target groups
Hidden concerns	- Documents (overarching European or International frameworks assessments) - Survey Experts - Survey Target groups
Confrontation of the information to the state of the art	- Survey Experts
Critical analysis of the information corpus and their objects	- Survey Experts - Survey Target groups

Documents, survey with responsible authorities and survey with experts are implemented first and are considered to select the objects considered as most important, which will be included in the survey with target groups.

Case studies

❖ Updating of the French sea basin strategy of the Eastern Channel and North Sea

Responsible authority and its concerns

State Authority represented by: Direction interrégionale de la mer (DirM) Manche Est- mer du Nord, Direction régionale de l'environnement, de l'aménagement et du logement (Dreal) Normandie, Préfecture maritime de la Manche

Particular concerns: defining areas for the next offshore wind farm tenders and identifying potential areas for marine strictly protected areas.

Target groups

Members of the Sea basin council (Conseil maritime de façade Manche Est-mer du Nord).

Experts

Office français de la biodiversité (OFB), Service hydrographique et océanographique de la marine (Shom), Institut français de recherche pour l'exploitation de la mer (Ifremer), Cerema.

Corpus

A general corpus is made of the documentation provided for the public debate ("Document du Maître d'ouvrage"), and a second corpus consisted in the reference layers for maritime planning displayed on the *Géolittoral* website, freely accessible at the following address:

[Planification de la mer et du littoral](#)

❖ Greater North Sea Basin initiative (DRAFT PROPOSAL)

Responsible authority and its concerns

Delegations participating to the GNSBi.

On this scale, offshore wind power can be considered a cross-cutting theme, addressed by the GNSBi initiative through the issues of multi-use and the assessment of cumulative impacts. The issue of protecting the marine environment should be discussed within the "Nature" working track, particularly the question of strictly protected areas, if deemed relevant at this scale.

Target groups

The idea of GNSBi is to set up a stakeholder forum at the scale of the wider North Sea, which could correspond to the public to be questioned on the quality of the information thus made available.

Experts

In terms of scientific expertise, the NSEC could be the key contact for questions relating to offshore wind power, and experts involved in the Ospar convention for environmental protection issues.

Corpus

EMODnet atlas could be considered as the corpus. Or, in the absence of a dedicated platform already in place at this scale, this work could be carried out in collaboration with the team in charge of its development within the project. The idea would be to contribute to the identification and development of reference synthesis layers for the wider North Sea.

❖ **Baltic Sea (TO BE DEVELOPED WITH VASAB)**

Responsible authority and its concerns

HELCOM

Baltic Sea Ministerial Meeting 2024.

Target groups

Baltic Stakeholder Conference(tbc)

Experts

VASAB and its network.

Corpus

HELCOM Map and Data service (section indicators and assessments) and HOLAS 3.

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Appendix 7: T5.4_Rating of platforms based on MSP related themes

Platform	Nature protection	Renewable Energy	Food & Fisheries	Shipping	Blue Economy	Other spatial usage
ODIMS	Yes	Yes	Partly	yes	yes	yes
EMODnet	Yes	Yes	Yes	Yes	Yes	Yes
HELCOM Basemaps	Partly	Partly	Partly	Partly	Partly	Partly
TrilaWatt	No	Partly	Partly	No	Partly	Yes
European Atlas of the Seas	Yes	Yes	yes	Yes	Yes	yes
CMEMS MyOcean Viewer	No	No	No	No	No	Yes
NOOS	No	No	No	No	No	Yes
SEANSE project	Yes	Yes	Yes	Yes	Yes	Yes
MSP Challenge	Yes	Yes	Yes	Yes	Yes	yes
ICES platform	Yes	No	Yes	No	No	Yes
INSPIRE platform	Yes	Yes	Yes	No	Partly	Yes
WISE Marine	Yes	No	No	No	No	Yes
North Sea Energy Atlas	Yes	Yes	Partly	Partly	Partly	Yes
Tethys	Yes	Yes	Partly	No	No	No
EU Aquaculture assistance mechanism	No	No	Yes	No	No	No
OSPAR MPA	Yes	No	Yes	No	No	No
MPA Europe	Partly	No	Yes	No	Yes	No
MSP Europe	Partly	No	Yes	No	Yes	No
MSP Danmark	Partly	Partly	Partly	Partly	Partly	Partly
Protected Planet	Yes	No	No	No	No	Partly
Offshore Renewable – OSPAR	No	Yes	No	No	Partly	No

Appendix 8: T5.4_Summarized rating of platforms based on geographical extent, MSP relevant products (maps, information), FAIR parameters, and integration of DIK(W) (see text for more explanation)

Platform	North Sea Area	Data viewer	FAIR	Relevant Data & Information to MSP	Integrates data and information to knowledge
ODIMS	Yellow	Green	Green	Yellow	Red
EMODnet	Yellow	Green	Green	Green	Yellow
HELCOM Basemaps	Red	Green	Green	Green	Yellow
TrilaWatt	Red	Green	Green	Yellow	Yellow
European Atlas of the Seas	Green	Green	Green	Green	Yellow
CMEMS MyOcean Viewer	Green	Green	Green	Green	Yellow
NOOS	Green	Green	Yellow	Yellow	Yellow
SEANSE project	Green	Red	Green	Green	Green
MSP Challenge	Green	Blue	Yellow	Green	Green
ICES platform	Green	Green	Green	Yellow	Yellow
INSPIRE platform	Green	Yellow	Green	Yellow	Red
WISE Marine	Green	Yellow	Green	Yellow	Green
North Sea Energy Atlas	Green	Green	Yellow	Yellow	Yellow
Tethys	Green	Yellow	Yellow	Yellow	Yellow
EU Aquaculture assistance mechanism	Red	Green	Green	Green	Red
OSPAR MPA	Green	Green	Yellow	Green	Yellow
MPA Europe	Green	Green	Green	Green	Green
MSP Europe	Green	Green	Green	Green	Green
MSP Danmark	Green	Red	Yellow	Green	Yellow
Protected Planet	Green	Green	Yellow	Green	Red
Offshore Renewable – OSPAR	Green	Green	Green	Green	Yellow



D5.1 Summary

This factsheet, concluding the gap analysis phase, provides the analytical foundation of WP5 on knowledge transfer for Maritime Spatial Planning. Using the DIK(W) framework, it identifies gaps and fragmented data coverage, heterogeneous national plans and geoportals, and the lack of interoperable, future-oriented knowledge layers. The four WP5 tasks are complementary: navigation safety assessment (T5.1), EMODnet for improving data products and services (T5.2), both supporting geoportal evaluation and dashboards (T5.3), and feeding the knowledge-sharing platform (T5.4). Together, they establish a coherent pathway towards targeted, interoperable and user-oriented MSP tools. This analytical phase ensures that subsequent outputs will directly support MSP practitioners and decision-makers across the extended North and Baltic Sea basins.



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