



EMODnet Thematic Lot n°7 – Human Activities

EASME/EMFF/2019/1.3.1.9/Lot 7/SI2.835999

Start date of the project: 03/03/2021 (24 months)

Centralisation Phase

Final Progress Report (1)

Reporting Period: 03/03/2021 – 02/03/2023



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1. Introduction

The contract for the this phase of EMODnet Human Activities was signed in March 2021 and ended March 2023. The contract was then renewed automatically for two more years until March 2025. The consortium that was awarded the contract is the same that developed and managed the portal in the previous phases:

- Cogea (lead company), Italy
- AND International, France
- AZTI Tecnalia, Spain
- CETMAR, Spain
- Eurofish International Organisation, Denmark
- Lovell Johns, UK

EMODnet Human Activities has been a member of the EMODnet family since September 2013. Since it was not included in the first EMODnet phase from 2009 to 2012, in the previous EMODnet phases (2013-2016 and 2017-2021) its main objective was to quickly build a base of data, so as to catch up with the other portals.

With the current phase of EMODnet, the focus is on maintaining and enhancing services where marine data and data products on the spatial extent and intensity of human activities in the ocean are made interoperable and freely available. In addition, one of the core obojectives of the current phase is the centralisation process.

According to the contract, the EMODnet Human Activities thematic group is mandated to build the following data themes:

- Aggregate extraction
- Aquaculture (including freshwater)
- Cultural heritage
- Desalination plants
- Dredging (e.g. navigational)
- Fisheries effort
- Fisheries zones
- Military zones
- Oil and gas exploration and extraction
- Ports
- Ocean energy facilities
- Pipelines and cables
- Protected areas
- Waste disposal
- Spatial planning zones
- Wind farms
- Shipping density

Compared with the previous phase, there are some new datasets, such as desalination plants, fisheries effort and military zones, though fisheries effort and military zones had partially been developed in the previous

EMODnet phase on a voluntary basis. Further, even though not requested by the contract, the Human Activities team have also made available a number of additional datasets, such as:

- Algae production facilities (including spirulina)
- State of bathing water
- Fish catches
- Fishing intensity
- Lighthouses
- Monthly first sales of fish
- MSFD Reporting Units
- Nuclear power plants
- Oil and gas licences
- Urban wastewater treatment

Vessel density maps were made available in the previous EMODnet phase. They quickly became EMODnet Human Activities' most downloaded data set. 4 years after publishing the vessel density maps, the interest in the data product does not seem to be fading away. In fact, the number of downloads has increased compared to the previous year.

The general objective of EMODnet Human Activities is to become the entry point for maritime data on the spatial extent and intensity of human activity in the ocean. For this reason, the project team paid special attention to collating accurate data from official sources, as well as to making user experience as friendly as possible.

Finally, the core task of this contract certainly was the centralisation process. This proved to be quite challenging, as merging seven different portals and map viewers into a single facility implied considerable effort, not just for the Human Activities team, but for all the other contractors involved. Nevertheless, the centralisation process was completed successfully on 25 January 2023. Human Activities data themes and services are now fully integrated into EMODnet Central Portal. The custom features developed for the Human Activities portal, based on user feedback, were ported to the new map viewer. Preliminary anecdotal evidence suggests that the radical change has partly disoriented users, who over time had grown accustomed to the Human Activities portal. However, it is believed that the integration of all EMODnet thematic groups into a single, consistent portal will yield enormous benefits in terms of usability and overall experience.

2. Update on the Tasks

Task 1: Maintain and improve a common method of access to data held in repositories

New data sets were made available:

- Desalination plants, sourced from DesalData, a commercial provider
- Fishing intensity was expanded, so as to cover the Azores, Bay of Biscay and the Iberian Coast, Baltic Sea, Barents Sea, Celtic Seas, Faroes, Icelandic Waters, Norwegian Sea and Oceanic Northeast Atlantic, whereas it used to cover only the North Sea before.
- The cable data theme was enriched with power cables – sourced from SHOM (FR), Rijkswaterstaat (NL) and NVE (NO) and BSH (DE) – that were not previously available.
- World database of protected areas: this is an entirely new data set that includes coastal and marine protected areas in the European seas for those countries that are not covered in the EEA's Common Database on Designated Areas (CDDA). The data set is entirely based on data from the World Database of Protected Areas and is fully harmonised with the European Environment Agency's (EEA) data set.

All of the other data sets received their yearly update. For the sake of brevity, only the following is highlighted:

- Maritime Spatial Planning (MSP): 2021 marked the deadline for EU Member States to adopt their spatial plans. While not all of them did so, a certain number of plans is now available on EMODnet, namely: Belgium, Denmark, Estonia, Finland (including the Åland Islands), Germany, Latvia, Netherlands, Poland, Spain and Sweden. The MSP data set is particularly interesting, because EMODnet has potential to fill a gap in the MSP Directive, which does not deal with how plans should be transmitted to the Commission. After developing a common data model for MSP, some Member States submitted their plan via the EMODnet Data Ingestion portal and eventually to EMODnet.
- Cables: coverage increased considerably by adding SHOM as a data source. Further, power cables were also added to the database, thus complementing telecommunication cables. Coverage is still limited (France, Germany, Netherlands and Norway), but there is room for improvement.
- Wrecks: once again coverage was improved by adding SHOM as a data source.
- Aquaculture: slow but constant progress is being made. It may be worth noting that, after years of negotiation, it was finally possible to ingest data on shellfish aquaculture in Spain. Slovenia was also added, through data received via EMODnet Data Ingestion. Contacts are ongoing with Finland, Sweden, Romania, Croatia and Slovakia with an aim to further improve coverage.

Task 2: Construct products from one or more data sources that provide users with information about the distribution and quality of parameters in time and space

- Both vessel density and route density maps received regular updates. Both remain EMODnet Human Activities' most downloaded data sets. The method developed by the EMODnet Human Activities team to make vessel density maps has become a de facto standard used worldwide. Besides being often cited in literature, it has been used by the US National Geospatial-Intelligence Agency to map shipping traffic worldwide, by the US Coastguard, and in South Korea.

Task 3: Develop procedures for machine-to-machine connections to data and data products

- The server was migrated from the UK to Germany. All web services were also migrated, using the latest version of GeoServer.
- GeoNetwork was installed and metadata were imported. GeoNetwork available under SSL (<https://ows.emodnet-humanactivities.eu/>)
- Cross origin resource sharing for Open Geospatial Consortium (OGC) webserver was enabled (requested by EMODnet Seabed Habitats)
- Completion of the serving of Vessel Density and Route Density GeoTIFFs as ImageMosaics in GeoServer allowing the data to be served as a single WMS for each vessel type with a time dimension, both to the Central Portal and direct to users.
- Created legend images in GeoServer for Web Map Service (WMS) and use by Central Portal.
- Tested download and web service request logs via GeoNetwork which will form the basis of statistics going forward.
- Created HTML templating in GeoServer to return attribute data in a more concise manner

Task 4: Contribute data, data products and content to a central portal that allows users to find, view and download data and data products

- Migration fully completed. All data and data products are fully available on the Central Portal. Old links now all redirect to corresponding pages on the Central Portal.

Task 5: Contribute content to dedicated spaces in the Central Portal

- EMODnet Human Activities related content was migrated to the Central Portal. Only blog posts are not available, as there is no corresponding section on the Central Portal.

Task 6: Ensure the involvement of Regional Sea Conventions

The Black Sea Commission (BSC) is using EMODnet Human Activities' data sets (algae production, dredging, fishing effort, fish sales, port traffic, aquaculture, urban wastewater treatment, shipping density) to prepare publications such as the Black Sea State of Environment Report, the Black Sea Strategic Action Plan Implementation Report (SAPIR), and the Implementation Report for Regional Action Plan on Marine Litter management in the Black Sea. Overall, they judge EMODnet's data sets as timely and reliable. When asked whether there can be room for improvement, the BSC reported that the data sets could be harmonised with their annual reporting obligations, though the official decision on how to do so is pending. The next meeting with the BSC is due to take place in Istanbul in October/November 2023 and a representative from the EMODnet Human Activities thematic group.

The United Nations Environment Programme - Mediterranean Action Plan (UNEP-MAP, Barcelona Convention): generally speaking, EMODnet Human Activities' data and data products are not currently used by the Barcelona Convention but they might become useful in the future, as UNEP-MAP is considering including information on pressures from human activities. UNEP-MAP is not using EMODnet Human Activities' data and data products currently, as they mostly rely on data of the Chemistry, Biology and Seabed Habitats thematic groups for their reporting. However, UNEP-MAP is currently working on gathering data related to the eleven ecological objectives of the Marine Strategy Framework Directive. In the last interview, which took place in February 2023, UNEP-MAP recommended that contacts be established with:

- The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) – in charge of the implementation of the prevention and emergency protocol – regarding hydrocarbon dataset;
- The Priority Actions Programme/Regional Activity Centre (PAP/RAC) – in charge of the implementation of the ICZM protocol – regarding Marine Spatial Planning;
- The General Fisheries Commission for the Mediterranean (GFCM) – in charge of fisheries and aquaculture – regarding aquaculture dataset;
- The Information and Communication/Regional Activity Centre (INFO/RAC), in charge of a system called Integrated Monitoring and Assessment Programme ([IMAP](#)) – INFO/RACs data was supposed to be available through an interactive viewer, but it is not yet the case.

The EMODnet Human Activities will enquire whether the coordinators of these programmes are available for a quick interview.

Helsinki Commission (HELCOM) and OSPAR (Oslo and Paris Conventions) Commission: With these two organisations, there is a long history of cooperation. Both are at the same time data sources and data providers of EMODnet Human Activities' data. Notably, OSPAR uses EMODnet HA's data sets on aquaculture, urban wastewater treatment plans, aggregate extraction, cables, vessel density, etc.; Helcom uses data sets on wind farms, cables, ports, fishing intensity, aggregate extraction. EMODnet's data sets are used either to fill gaps or to cross-check the data collected under the organisations' remit. Further, Helcom played a crucial role in supporting the design and development of EMODnet's data model on MSP. The coordination meetings with these RSCs are mainly aimed at providing quick updates on what is new, as cooperation is now mutual and well-established.

Further, collaboration with Helcom takes place on a regular basis, as a result of the mutual involvement in the Technical Expert Group (TEG) on MSP data.

Task 7: Contribute to the implementation of EU legislation and broader initiative for open data

In the previous EMODnet phase, the Human Activities team compared EMODnet data models with INSPIRE's, in view of increasing compliance with INSPIRE standards. In 2020, this work culminated with the publication of a report that identified 17 different INSPIRE application schemas as potentially applicable to 66 EMODnet HA data sets, with more or less direct alignment depending on the themes. Other issues related with incomplete code lists and inconsistent semantic definitions are also pointed out.

Further to this work, we have been working on the design of a single INSPIRE-compliant data model for EMODnet human activities data, based on the recommendations from the report last year. As INSPIRE data models cannot fully fit EMODnet Human Activities' data sets, the idea is to take as much as possible from the existing INSPIRE land use model, and adapt it to create INSPIRE-compliant data models that can be used for EMODnet Human Activities' data sets and products. The work has been informed, amongst other things, by the experience with the recently-released MSP data sets, which was also an adaptation from INSPIRE's land use model. Guidelines have been written and the plan is to make all data set available both with the EMODnet and the INSPIRE data model. A pilot exercise was developed by AZTI. It envisages creating new data models loosely based on INSPIRE's land use data model, as done by the [MarSP project](#).

In addition, the EMODnet Human Activities team took active part in the Technical Expert Group on data for MSP. The process culminated in the publication of an EMODnet data model for MSP, which is fully INSPIRE-compliant, and fully compatible with similar exercises carried out at regional level by Helcom and by the MarSP

project. As of today, cooperation is still ongoing, and the EMODnet Human Activities team sits in the TEG, whose meetings take place regularly.

There is considerable room for further improving cooperation with Member States and with the EU MSP platform to support planning authorities in their implementation of the MSP Directive. The EMODnet HA team confirmed to DG MARE and to the EU MSP platform full availability to assist Member States in the preparation of their MSP data sets. A meeting with the Italian authorities took place in October 2021; as a result, when Italy's MSP is adopted, it will be compliant with the EMODnet data model.

Albeit few, some Member States have spontaneously submitted their spatial plans through the EMODnet Data Ingestion facility.

Task 8: Monitoring quality / performance and deal with user feedback

Nothing to report.

Task 9: Maintain the existing thematic web portal for a maximum of six months from the start of the project

The EMODnet Human Activities portal has been fully phased out.

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
e.g. M1: xxx	WP1	Dd/mm/yyyy	Delivered	Dd/mm/yyyy	...
e.g. D1.1: xxx	WP1	Dd/mm/yyyy	Delayed		...

3. Work Package updates

As per the Technical Proposal submitted with the tender, there are no Work Packages in EMODnet Human Activities, other than the project tasks reported in the Tender Specifications.

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4. Identified issues: status and actions taken

A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
EM-772 Investigate how to expose vector attribute as time dimension in WMS, without suffering performance impact	Pending	This needs to be further investigated. Upon adding an index there was no improvement in speed. Therefore we removed the time dimension from the relevant layers. At the moment it is not critical, as on the CP Viewer we are just filtering the data by date attribute fields (Eg. Port traffic), which seems to work well		
EM-632 Provide input to the Tools & Guidelines section	Pending	Update the vessel density method: the publication is being transposed to CINEA's template, so to get a DOI		
EM-612 EMODnet Catalogue Tags & Filters	Pending	This was completely overlooked. It will be fixed as soon as possible.		
EM-79 Human Activities to report on status or plans to support INSPIRE Compliant CSW	Resolved	Geonetwork installed (will be made live in October)		September 2021
EM-86 Web Services MetadataUrl and DataUrl fields	Resolved	To evaluate again after we have made the web services live on the new server. Once this is done we can look at any further work to make compliant		28/02/2023
EM-41 - TWG4 - Action point 7: Implement support of time dimension in EMODnet Human Activities Geoserver (WMS-Time, WCS-Time)	Resolved	Support implemented.		10/02/2023
EM-345- Collect fields/forms used on Human Activities Thematic Portal	Resolved	Feedback provided		
EM-337 Collect names of Portal editors	Resolved	Done		29/11/2021
Review of the new CP map viewer	Resolved	Review completed		17/11/2022
Human Activities to add links to WMS and WFS or WCS in the metadata documents	Resolved	WMS, WFS and download links have been added for all the Human Activities datasets.		02/03/2023

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Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
EM-772 Investigate how to expose vector attribute as time dimension in WMS, without suffering performance impact	Pending	This needs to be further investigated. Upon adding an index there was no improvement in speed. Therefore we removed the time dimension from the relevant layers. At the moment it is not critical, as on the CP Viewer we are just filtering the data by date attribute fields (Eg. Port traffic), which seems to work well		
EM-632 Provide input to the Tools & Guidelines section	Pending	Update the vessel density method: the publication is being transposed to CINEA's template, so to get a DOI		
EM-612 EMODnet Catalogue Tags & Filters	Pending	This was completely overlooked. It will be fixed as soon as possible.		
Human Activities to report on number and volume of downloaded data and data products	Resolved	Numbers provided		02/02/2022
Inaccurate GetLegendGraphic returned for Human Activities EEZ layer	Resolved	When the spacing of the hatching style is small, the legend seems not to show correctly. We have increased the width of the hatch style and it displays OK now.		24/02/2022
Human Activities WMTS broken: GeoWebCache out of synch	Resolved	GetCapabilities is now working correctly.		08/08/2022
Human Activities to report on number and volume of downloaded data and data products by 29th of October 2021	Resolved	Done		27/10/2021
Converting vessel density maps from GeoTIFF to NetCDF	Pending, though the problem has been circumvented by using a different approach.	Conversion is technically feasible but the initial approach envisaged a change in the coordinate reference system from Lambert Azimuthal Equal Area to WGS84. This would create issues to users who have downloaded data in the past, making it incomparable. Therefore, it has been decided to reconvert the maps again and keep Lambert as the coordinate reference system.		

A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT

Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
EM-772 Investigate how to expose vector attribute as time dimension in WMS, without suffering performance impact	Pending	This needs to be further investigated. Upon adding an index there was no improvement in speed. Therefore we removed the time dimension from the relevant layers. At the moment it is not critical, as on the CP Viewer we are just filtering the data by date attribute fields (Eg. Port traffic), which seems to work well		
EM-632 Provide input to the Tools & Guidelines section	Pending	Update the vessel density method: the publication is being transposed to CINEA's template, so to get a DOI		
EM-612 EMODnet Catalogue Tags & Filters	Pending	This was completely overlooked. It will be fixed as soon as possible.		
EMODCOM-136: EMODnet Human Activities: Frontex use case	Resolved	Use case completed and published online		20/10/2022
EMODCOM-137: EMODnet HA: method vessel density maps applied to Korea	Pending	Graduate from Korea Maritime and Ocean University has applied EMODnet HA's method to calculate vessel density to Korean Waters. She agreed to become a use case but asked to wait until she has completed her dissertation	Undefined	N.B.: the author has stopped replying emails
EM-629 Standardise the navigation menu for thematic portal subpage on left hand side	Resolved	Comments provided to the central portal team		01/06/2023
TWG4 - Action point 7: Implement support of time dimension in EMODnet Human Activities Geoserver (WMS-Time, WCS-Time)	Resolved	ImageMosaic was used to group GeoTIFFs. Note that this is a temporary fix as we're working to convert GeoTIFFs to NetCDF.		24/02/2023
EM-670 HA to check if the link to the Wind Farm layer is indeed the correct link	Resolved	Confirmed the layer is the correct one		27/02/2023
Old URL not redirecting to central portal (EM-760)	Resolved	Fixed		Same day

B. Issues / challenges identified by the thematic assembly group itself				
Priority issue / challenge	Status (Pending/ Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved

5. Allocation of project resources

Information on the allocation of project resources	
Categories	Resource usage ¹ (%)
Making data and metadata interoperable and available	40%
Preparing data products	15%
Preparing web-pages, viewing or search facilities	5.5%
Managing user feedback	2%
Project management	5%
Outreach and communication activities	3%
Others	29.5%

¹ Provide the workings of your calculations, *i.e.* percentage allocation of the total amount awarded.

6. User feedback

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
03/03/21	Individual	Technical: feature to download data in tabular format not working with vessel density	E-mail	Same day	Solved	Explained it can't work with vessel density	
11/03/21	Individual	Data: user found inconsistencies in vessel density data	E-mail	One week	Solved	After careful research, it emerged that the user was importing the data in the wrong way.	
16/03/21	Individual	Data: user asked about the source of waste disposal data for Cyprus	E-mail	Same day	Solved	Explained.	
31/03/21	Individual	Data: user asked why there are no African ports in the port data set	E-mail	Same day	Solved	Explained that the data is sourced from Eurostat, which doesn't have a mandate to collect data on African countries.	
01/04/21	Individual	Data: user asked if a data set on EEZs was available	E-mail	Same day	Resolved	Explained where to get it	

Overview of user feedback and/or requests received in this project phase							
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01/04/21	Individual	Data: user asked how to download the wrecks data set	E-mail	Same day	Resolved	Explained that the data source does not make data available for download	
07/04/21	Individual	Technical: user asked questions on the method to calculate vessel density maps	E-mail	Same day	Resolved	Explained	
21/04/21	ICF	Data: questions on underwater munitions for an EC study	E-mail	Same day	Resolved	Answered the question. A conference call took place.	
23/04/21	Individual	Technical: user couldn't add WMS for density maps	E-mail	Same day	Resolved	Explained how to do it	
23/04/21	Individual	Technical: user wanted to know how to single out fishing vessels in density maps	E-mail	Same day	Resolved	Explained how to do it	
29/04/21	Individual	Technical: user asked what vessels are included under 'other' in route density maps (question received via EMODnet Secretariat)	E-mail	Same day	Resolved	Explained	
04/05/21	Individual	Technical: user had issues with WMS for wind farms	E-mail	Same day	Resolved	Explained how to fix it	

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10/05/21	Individual	User needed access to raw AIS data	E-mail	Same day	Resolved	Explained this is not possible	
11/05/21	Individual	Technical: user said download was very slow	E-mail	Same day	Resolved	The problem was on the user side. A file was sent via email.	
12/05/21	Individual	User needed to know catches by type of fishing vessel (question received via EMODnet Secretariat)	E-mail	Same day	Resolved	Explained this is not possible	
13/05/21	Individual	Technical: user needed vessel density around Madeira	E-mail	Same day	Resolved	Explained how to get it	
27/05/21	Individual	Technical: user asked how to download the submerged archaeology data set	E-mail	Same day	Resolved	Explained this is not possible because the data provider only offers a WMS	
01/06/21	Individual	Technical: user thought there were missing farms in the Baltic Sea	E-mail	Same day	Resolved	User didn't realize there are two wind farms data sets, one with polygons and one with points	
17/06/21	Individual	Technical: user asked how to separate the above water installations from the	E-mail	Same day	Resolved	Explained how to do it	

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		shapefile "Offshore Installations"					
22/06/21	Individual	Technical: user asked how to get vessel density rasters available in a greyscale though WMS	E-mail	Same day	Resolved	Explained that this is not possible as WMS essentially returns an image	
24/06/21	Individual	Technical: user asked where to get IMO traffic schemes	E-mail	Same day	Resolved	Explained they're not available on EMODnet HA (not in the contract). The information needs to be sourced country by country	
08/07/21	Undisclosed	User needed to know how to open vessel density maps in QGIS	E-mail	Same day	Solved	Explained how to do it	
20/08/21	Undisclosed	User had troubles converting vessel density grid to epsg:4326	E-mail	Same day	Solved	Explained how to do it	
31/08/21	Undisclosed	User enquired whether offshore wind licences were missing from our offshore wind data set	E-mail	Same day	Solved	Explained that licences are not included in the offshore wind data set. These are being made available in the MSP data set, instead	

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02/09/21	Undisclosed	User asked to obtain vessel density maps prior to 2017	E-mail	Same day	Pending	Issue can't be solved. There are no plans to release vessel density maps before 2017	
16/09/21	Undisclosed	User asked whether yearly density maps report number of hours per year or month	E-mail	Same day	Solved	Explained that yearly density maps report average monthly density values	
09/10/2021	Individual	Info: user asked whether vessel density maps would be updated to 2021	E-mail	Same day	Resolved	Answered positively	
12/10/2021	Individual	Technical: users asked to obtain the routes generated to make the density maps	E-mail	Same day	Resolved	Explained this is not possible as the data are property of a commercial provider	
13/10/2021	Individual	Technical: user asked for maritime boundaries data in GeoJSON format	E-mail	Same day	Resolved	Convert the data set from shp to GeoJSON	
14/10/2021	Individual	Technical: user asked why he couldn't download submerged archaeology data	E-mail	Same day	Resolved	Explained that the data provider only agreed to make data available as WMS	
14/10/2021	Individual	User asked if he could use a screenshot in a publication	E-mail	Same day	Resolved	Answered positively and shared a link to the terms of use	

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29/10/2021	Individual	Technical: user needed historical AIS data	E-mail	Same day	Resolved	Explained these are not available	
01/11/2021	Individual	Technical: user couldn't find an extraction area list on EMODnet on the primary source's website	E-mail	One day	Resolved	Explained where to find it	
02/11/2021	OSPAR	User asked clarification to incorporate wastewater data into their portal	Via EMODnet Secretariat	Same day	Resolved	Explained	
03/11/2021	Individual	Technical: user asked why he couldn't download submerged archaeology data	E-mail	Same day	Resolved	Explained that the data provider only agreed to make data available as WMS	
05/11/2021	Individual	Technical: user needed to import a gdb into QGIS	E-mail	Same day	Resolved	Explained how to do it	
16/11/2021	Individual	Technical: user asked to be given raw AIS data	E-mail	Same day	Resolved	Explained that the raw data is property of a commercial provider	
03/12/2021	Individual	Technical: user asked how to download fishing vessel density maps	E-mail	Same day	Resolved	Explained	
03/12/2021	Individual	Technical: user noticed an issue with the protected areas WMS	E-mail	Same day	Resolved	Fixed	

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03/01/22	Individual	Copyright: user wanted to include an image from the map viewer into this work	E-mail	Same day	Resolved	Explained how to acknowledge EMODnet	
04/01/2022	Individual	Copyright: user wanted to include an image from the map viewer into this work	E-mail	Same day	Resolved	Explained how to acknowledge EMODnet	
10/01/2022	Individual	Data: user asked how to single out vessel routes originating from Brazil, Colombia and Vietnam	E-mail	Same day	Resolved	Explained this can only be done from raw AIS data, to which users can't be granted access	
12/01/2022	Individual	Copyright: user asked how to cite EMODnet	E-mail	Same day	Resolved	Explained how to acknowledge EMODnet	
12/01/2022	EMODnet Seabed Habitats	Technical: error with WMS	E-mail	Same day	Resolved	Fixed a CORS issue	
20/01/2022	Individual	Technical: user asked how retrieve shapefiles of telecom cables	E-mail	Same day	Resolved	Explained how to do it	
04/02/2022	European Court of Auditors	Data: user asked whether: (i) the MSP available on EMODnet are official; (ii) more countries would be made available and (iii) when	E-mail	Same day	Resolved	Explained that (i) the MSPs are indeed official; (ii) data are made available as soon as MSs adopt their plans; (iii) for the same reason it's not possible	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
						to provide a tentative release plan	
14/02/2022	Individual	Data: User informed us that some algae producing facilities were not included in our data set	E-mail	Same day	Resolved	2 out of the 3 facilities actually turned out to be included. For the remaining one, we put the users in touch with the JRC, who are in charge of the data set	
14/02/2022	Individual	Technical: user lamented an error with WMS	E-mail	Same day	Resolved	After a quick check, no error was found.	
17/02/2022	Individual	Data: users asked to be given access to raw AIS data	E-mail	Same day	Resolved	Explained this is not allowed by our licence terms with the data provider	
17/02/2022	Individual	Citation and technical: user asked how to cite EMODnet and how to get WMS and WFS links to the wind farm data sets	E-mail	Same day	Resolved	Redirected user to "Terms of Use" for citation and to metadata for WMS and WFS links	
09/03/2022	Individual	Technical: user asked how to plot vessel density data using Matlab	E-mail	Same day	Resolved	Recommended using Matlab's READGEORASTER function	
16/03/2022	Frontex	Technical: it was suggested that with the vessel density	E-mail	Same day	Resolved	The WMS default legend was created	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
		WMS we display the same legend available on the map viewer				automatically by the software. We replaced it with a pre-created image, and now it's fully aligned with the map viewer	
16/03/2022	Individual	Technical: user was struggling with downloading bathymetric data	E-mail	Same day	Resolved	Put user in touch with EMODnet Bathymetry's coordinator	
18/03/2022	ISMAR CNR	Data: user asked when 2021 density maps would be made available	E-mail	Same day	Resolved	Told user that these would be made available in the coming months. We recommended connecting to our WMS or WCS so to always have the most recent version available	
22/03/2022	Individual	Data: user noted that 3 renewable energy projects were not included in our data set	E-mail	Same day	Resolved	2 out of 3 projects were actually included, but the user was looking at the wrong data set. Explained that the other project had just been launched and for this reason it would be	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
						included in the next update to the data set	
04/04/2022	Individual	Technical: user asked about vessel density sources	E-mail	Same day	Resolved	Redirected user to metadata page	
08/04/2022	Individual	Technical: user asked why wind farm data are available both as polygons and as points	E-mail	Same day	Resolved	Explained that polygons are the preferred format, but when these are not available farms are shown as points	
15/04/2022	Individual	Technical: user asked how to locate wind farms around an area	E-mail	Same day	Resolved	Explained how to do it	
19/04/2022	Individual	Technical: user asked about how to use WMS/WFS	E-mail	Same day	Resolved	Explained how to do it	
22/04/22	Individual	Technical: user asked how to download marine boundaries data	E-mail	Same day	Resolved	Explained how to do it	
25/04/2022	Individual	Technical: user asked about an API to obtain vessel density data	E-mail	Same day	Resolved	Explained that no API is currently available and recommended using WCS	
04/05/2022	Individual	Technical: user asked when vessel density data for November 2021 would be available	E-mail	Same day	Resolved	Explained that the data would have been made available in few weeks	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
06/05/2022	Individual	Technical: user asked how to symbolize vessel density rasters	E-mail	Same day	Resolved	Explained how to do it	
08/06/2022	Individual	Technical: user asked how to symbolize vessel density rasters	E-mail	Same day	Resolved	Explained how to do it	
09/06/2022	Individual	Technical: user asked clarification on vessel density method to replicate the exercise in Korea	E-mail	Same day	Resolved	Clarified	
10/06/2022	Individual	Data: user asked why some countries are missing in the MSP data set	E-mail	Same day	Resolved	Explained that data are not obtained automatically, and so the fact that a Member State has adopted a plan doesn't imply that this can be made available immediately on EMODnet HA	
11/06/2022	Individual	Data: user asked whether data from India are available	E-mail	Same day	Resolved	Explained that the project has an EU focus	
20/06/2022	Individual	Technical: user asked how to download cable data	E-mail	Same day	Resolved	Explained how to do it	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
21/06/2022	Individual	Copyright: user asked whether links to the portal could be disseminated	E-mail	Same day	Resolved	Redirected user to the data policy page and explained that EMODnet data is (generally) free and free of restrictions to use	
05/07/2022	Individual	Data: user asked about construction date of wind farms	E-mail	Same day	Resolved	Explained that this information is not available for all wind farms	
12/07/2022	Individual	Technical: user reported an issue with exporting data on shellfish farm	E-mail	Same day	Resolved	Upon further investigation, it turned out that the issue was on the side of the user	
03/08/2022	Individual	Context information: user asked about activity constraints in wind farm area	E-mail	Same day	Resolved	Explained that EMODnet HA does not deal with legislation	
01/09/2022	Individual	Data: user asked to be given access to AIS data	E-mail	Same day	Resolved	Explained that this is not possible, as the data is property of a commercial provider	
02/09/2022	Individual	Data: user asked to include their company in the macroalgae database	E-mail	Same day	Resolved	Company added	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
14/09/2022	Individual	Technical: user had issues with importing file geodatabase into QGIS	E-mail	Same day	Resolved	Explained how to do it	
19/09/2022	Individual	Technical: user asked how to retrieve coordinates from a shapefile	E-mail	Same day	Resolved	Explained how to do it	
20/09/2022	Individual	Visualization: user noted that in the MSP data set uses often overlap and it is not easy to tell them apart	E-mail	Same day	Pending	Visualization style should be adapted to avoid confusion	
20/09/2022	Individual	Data: user asked to be given access to AIS data	E-mail	Same day	Resolved	Explained that this is not possible, as the data is property of a commercial provider	
28/09/2022	Individual	Data: user need a graphic representation of the Nord Stream pipeline for a famous US newspaper	E-mail	Same day	Resolved	Explained how to obtain it from the shapefile available on EMODnet	
24/10/22	Individual	Data: User asked to add their shellfish farm to the data set	E-mail	Same day	Resolved	Farm added to the data set. Will be included as from the next release	
08/11/22	US Coast Guard	Technical: user asked about technicalities of the vessel density method.	E-mail	Same day	Resolved	Explanation provided. A call was organized to strengthen cooperation	

Overview of user feedback and/or requests received in this project phase							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/ Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
						with the US Coast Guard	
10/11/22	Individual	User noticed that a pipeline reported as “planned” was never built, and so it should be removed from the data set	E-mail	Same day	Resolved	Pipeline deleted	
10/11/22	Individual	Technical: user asked to be given aquaculture data in csv format to import them into Matlab	E-mail	Same day	Resolved	Data sent as a csv file	
20/12/22	Individual	Data: user asked to be given access to raw AIS data	E-mail	Same day	Resolved	Explained that this is not possible as per our licence terms	
29/12/22	Individual	Technical: user asked how about to plot vessel density rasters in ArcGIS and QGIS	E-mail	Same day	Resolved	Explained how to do so	

7. Meetings/events held/attended & planned

A. Meetings/events organised and attended in this project phase					
Date	Location	Type event (internal or external meeting; training/ workshop)	Was a presentation given? (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
24-25/04/21	Remote meeting	Workshop	No	A	Workshop on Marine Data for Aquaculture
14/04/21	Remote meeting	Call conference	No	O	Meeting with the Secretariat on use cases
20/05/21	Remote meeting	Workshop	Yes	A	EMD workshop on Ocean Observation and Marine Data for the Blue Economy
14/06/21	Remote meeting	EMODnet Conference Open	No	A	Presentation of EMODnet HA's main achievements
17/06/21	Remote meeting	EMODnet HA partners meeting	No	O	Amongst other things, discussion on Human Pressure Index, compliance with INSPIRE, how to improve coverage.
02/07/21	Remote meeting	Internal	no	A	Meeting with EMODnet Physics to discuss a framework to integrate EMODnet HA data on vessel density with EMODnet Physics data on noise
16/07/21	Remote meeting	Internal	no	A	Meeting with DG MARE to understand to what extent EMODnet HA may support the MSFD process (oil spills)

20/09/21	Remote meeting	External	no	A	Meeting with the contractor of CINEA/EMFF/2020/3.1.16/Lot2/SI2.85094 who's investigating loss of AIS messages due to satellite collisions.
25/10/2021	Online	External	no	A	Support to Italian MSP and 'ingestion' to the EMODnet Portal. They agreed on the adoption of the EMODnet HA MSP data model for the Italian MSP plan
23/11/2021	Online	External	Yes, short description of the work developed in the sub-group of the socioeconomic impact of MSP	A	Technical Expert Group of Marine Spatial Planning at European level. Sub-groups about metadata, MSFD and socio-economic (among others) explained their advances.
18/10/2021	Remote	Internal workshop	yes	O	First session of Workshop for EMODnet Human Activities' single model proposal: Participants EMODnet's human activities partners. Objective: Presentation and practical testing of the EHA single model for human activities layers in EMODnet portal.
19/11/2021	Remote	Internal Workshop	yes	O	Second session on of Workshop for EMODnet Human Activities' single model proposal: Participants EMODnet Human Activities partners. Objective: Follow on discussions and practical testing of the EHA single model for human activities layers in EMODnet portal.
20/01/2022	Online	MED OSMoSiS workshop	Yes. Presentation of EMODnet Human Activities and benefits of FAIR data	A	
28/03/2022	Online	External meeting	Yes. As chair of the Socioeconomic impact of MSP subgroup a report of the activities developed was introduced.	A	Summary of advances in the data gathering and analysis of MSP (MSFD, input/output variables, metadata, network analysis and socioeconomic). The participants are DG-Mare, CINEA, HELCOM

					and organizations from each of the EU coastal Member States.
28/03/2022	Online	EMODnet meet and greet	No	A	Description of the work carried out by EMODnet Human Activities to Remy Denos
14-15/06/2022	Participation in the “Planning for the future of Europe’s Marine Space – MSP Stakeholder Conference”	Conference	No	A	<p>Networking with key stakeholders and Management Authorities related and in charge of the MSP. The European MSP Stakeholder Conference - Planning for the future of Europe’s Marine Space - took place on 14-15 of June in Brest, France. The conference was split into two halves, on the first day, the event focused on the achievements of Marine Spatial Planning in the EU since the adoption of the MSP Directive in 2014, the challenges encountered in the implementation of MSP and the lessons learnt. The second day focused on the future of MSP until 2030, how the next generation of Plans can respond to climate change, the importance of MSP as an enabler for renewable energy and to meet the goal of 30% for Marine Protected Areas as designated by the EU Biodiversity Strategy.</p> <p>The event attracted more than 450 participants in person and online, from different countries, and sectors: local and national representatives, European Commission, academics, maritime industries, NGOs, members of the AM MSP team. Importantly, this event marked the first occasion that the European MSP Community could come together since the Global Pandemic</p>
17/06/2022	Remote meeting	Call conference	No	A	Meeting with the Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (Brazil) to discuss

					the feasibility of ingesting data on oil and gas from Brazil
06-07/07/22	Las Palmas (Spain)	External meeting	Yes, Technical Expert Group on Maritime Spatial Planning data	A	Presentation of the development of the EU MSP Layer. EMODnet Human Activities portal in the frame of the TEG MSP data group of DG-MARE
13/07/2022	Online	Aquaculture Advisory Council and EMODnet on shellfish farming zoning	No. The meeting was aimed at discussing how to follow up on certain recommendations put forward by the AAC	A	Initial framework was established, but more meetings are needed.
09/09/22	Online	Community of Practice (workshop)	No	A	CoP-meeting of the Ocean Governance learning strand, organized by the “Emerging ecosystem-based Maritime Spatial Planning topics in North and Baltic Seas Region (eMSP NBSR) Project”
01/09/22	Online	Community of Practice (workshop)	No	A	The EMODnet HA Portal participates in the Community of Practice of the European project eMSP. The WS will also focus on terminology use in the different countries regarding MSP implementation as well as data needed for each eMSP-NBSR learning strands (Ocean Governance, Ecosystem based approach, Monitoring and evaluation and Sustainable blue economy). In the case of Denmark, they highlight the cooperation with EMODnet HA and acknowledge the data model for MSP developed in the frame of the TEG. They mention EMODnet (and Basemap – Helcom-) as the international initiatives where they adapt their MSP plan. In the case of Italy, they presented their MSP data model and explained that they are developing a tool to transform their national plan into the EMODnet HA data model for MSP.
20/09/2022	Online	EMODnet-for-business two-day workshop on Offshore energy sector	Yes. Live demonstration of EMODnet HA data for the offshore renewable energy industry	A	https://emodnet.ec.europa.eu/en/emodnet-business-two-day-workshop-offshore-energy-sector

19/10/22	Virtual	ORE & MSP Data sharing	Live demonstration of EMODnet Human Activities' data sets and products	A	
05/12/2022	Virtual	Technical Expert Group - MSP Data	Yes, Presentation on Spatial overlap between human activities and seabed habitats in European Seas: Insights into EMODnet's data for management purposes. Based on paper https://doi.org/10.1016/j.marpol.2021.104551	A	https://maritime-spatial-planning.ec.europa.eu/msp-resources/technical-expert-group-teg-data-msp
14/12/2022	Virtual	Call with US Coast Guard	No, the meeting was aimed at discussing how to use EMODnet's method for vessel density mapping	O	It was agreed that the US Coast Guard will become a use case for EMODnet
SUM				O	Total # of meetings organised = 5
SUM				A	Total # of meetings attended = 20

B. Meetings/events planned in the future					
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes	
December 2023	Bruxelles	EMODnet Human Activities partners meeting	O	Discuss work plan and priorities for 2024	

8. Communication assets

A. Communication products developed				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
16/03/22	News digest	Contributed three news items to EMODnet's News Digest	Announced three new data sets: desalination, fishing intensity in the Baltic Sea and in the Atlantic Ocean, and Latvia's MSP	

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected

A. (Co-)Authoried peer-reviewed publications in this project phase					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
August 2021	Paper	<i>Spatial overlap between human activities and seabed habitats in European Seas: Insights into EMODnet's data for management purposes</i> in Marine Policy Volume 130, August 2021, 104551		https://doi.org/10.1016/j.marpol.2021.104551	No
2/10/2021	Book Chapter	S. Simoncelli, G.M.R. Manzella, A. Storto, A. Pisano, M. Lipizer, A. Barth, V. Myroshnychenko, T. Boyer, C. Troupin, C. Coatanoan, A. Pititto, R. Schlitzer, D.M.A. Schaap, S. Diggs, "A collaborative framework among data producers, managers, and users" in "Ocean Science Data". Ed. Manzella, G.M.R. and Novellino A., Elsevier.	9780128234273	https://doi.org/10.1016/C2019-0-05509-4	
6/11/2022	Paper	Kim, Y.-J.; Lee, J.-S.; Pititto, A.; Falco, L.; Lee, M.-S.; Yoon, K.-K.; Cho, I.-S. Maritime Traffic Evaluation Using Spatial-Temporal Density Analysis Based on Big AIS Data. Appl. Sci. 2022, 12, 11246		https://doi.org/10.3390/app122111246	Yes
8/11/2021	Paper	Pseftogkas, A.; Koukouli, M.-E.; Skoulidou, I.; Balis, D.; Meleti, C.; Stavrakou, T.; Falco, L.; van Geffen, J.; Eskes, H.; Segers, A.; et al. A New Separation Methodology for the Maritime Sector Emissions over the Mediterranean and Black Sea Regions. Atmosphere 2021, 12, 1478		https://doi.org/10.3390/atmos12111478	Yes

B. Other/non-peer reviewed types of publications (co-)authoried in this project phase					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
17/09/21	Paper	<i>Proposal for making harmonized MSP plan data available across Europe</i>	978-92-95225-12-1	10.2926/029516	Yes

For a comprehensive overview of publications referring to/making use of EMODnet data and/or data products, please consult Google Scholar.

9. Monitoring indicators

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	Matomo/ Europe Analytics/ other Matomo	<p>Barring few exception, volume of data increased for all data sets. This was mostly due to the addition of new sources, which led to an improvement in coverage. In some cases, volume of data decreased, though this did not imply lower coverage. For example, there are now fewer oil and gas licences, because these resources are depleting and because they are not in line with environmental policy goals.</p> <p>When it comes to coverage by sea basin, it should be noted that for most Human Activities data set, the calculation is not straightforward and in some cases it is just impossible. Human Activities generally deals with discrete data sets and calculating how much of a sea basin is covered would require having a register or cadastre to benchmark with. At the same time, it should be noted that coverage is always 100% in those cases where a data set is made available as a result of a data reporting obligation. In other cases, it is just impossible to measure coverage. Last but not least polygon data sets often overlap more than a sea basin (e.g. in MSP) and the calculation is not straightforward.</p> <p>As specifically regards the Carribean Sea, Human Activities data sets are often sourced from national authorities. When these report data for outermost regions, coverage of non-European waters can also be ensured. Currently, in the Carribean Seas, the following data sets are available: power cables, telecom cables, ship wrecks, protected areas, state of bathing waters, first sales of fish, main ports, exclusive economic zone, Urban Wastewater Directive discharge points and treatment plans. Data is available only for EU outermost regions and so it is not possible to assess overall coverage of the sea basin.</p>

What is your opinion on the data coverage within EMODnet for your thematic?		
B) Usage of data since the start of the project phase		Coverage is ever increasing, though there is still work to be done. The most critical areas are aquaculture, pipelines and cables.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		Both vessel density and route density volume increase by definition, as the data products are updated regularly
B) Usage of data products since the start of the project phase		Despite being the most downloaded data products, number of downloads continued to increase, compared with the previous report
3. Internal and external organisations supplying/approached to supply data and data products since start of the project phase		New sources are added every year. Apart from that, there's nothing particularly noteworthy
4. Online 'Web' interfaces to access or view data		Nothing to report
6. Statistics on information volunteered through download forms		Number of users increased considerably. About 30% of them are from industry, as can be seen also from "main use cases and application areas"
7. Published use cases		Nothing to report, except the fact that by stopping collecting information on users it's going to be increasingly difficult to write new use cases
9. Technical monitoring		Nothing to report
10. Visibility & Analytics for web pages		Stable trend that seems to have reached a plateau. Might be interesting to see what is happening in the long run as a result of centralisation.
11. Visibility & Analytics for web sections		Blog visibility plummeted, as it stopped being updated in view of the centralisation
12. Average visit duration for web pages		Stable trend

5.1 NEW. Daily number of page views of EMODnet Thematic entry page since the start of the contract		Difficult to make an assessment, as the repatriation occurred on 25/01/2023 and the contract ended on 02/03/2023. However, it is believed that thematic entry pages might become less and less relevant over time.
5.2 NEW. Total number of visitors, page views, unique page views and percentage of returning visitors, since the start of the contract		Difficult to make an assessment, as the repatriation occurred on 25/01/2023 and the contract ended on 02/03/2023. However, it is believed that thematic entry pages might become less and less relevant over time.

The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo and/or Europa Analytics, unless reported otherwise.

10. Recommendations for follow-up actions by the EU

- Maritime Spatial Planning: offer to organise training sessions in the Member States who have not yet adopted or are in the process of revising their plan. It would be a good occasion to make sure that the plan is released in a format that is already compliant with the EMODnet data model. The EMODnet Human Activities team are fully available to participate in these training sessions.
- Vessel density: several users often ask for historical vessel density map. Consider extending the time series. To be noted that this might have budget implications, so pros and cons should be carefully evaluated.
- Reporting obligations: the situation with several data sets (aquaculture, cables, pipelines) has been stable for quite some years, with only little progress being made every once in a while. With no reporting obligations, it is not likely to change any time soon. Introducing reporting obligations would improve data availability considerably.
- Coordination with Regional Sea Conventions as well as with broader EU and non-EU initiatives for open data: it is strongly recommended that these tasks are carried out centrally, rather than by each thematic group individually. Doing it individually would entail duplication of effort and more burden for our counterparts.
- Make available more data on fisheries: the EMODnet Human Activities team have always been available to add new data, even outside contractual obligations. Fisheries data sets currently available on EMODnet such as “monthly first sales of fish”, “fish catches” and “fishing effort” were made available years ago voluntarily. However, to further improve availability of fisheries-related data, the Human Activities team should be given access to Data Collection Framework and VMS data.

11. Annex: List of acronyms

AIS	Automatic Identification System
API	Application Programming Interface
BSC	Black Sea Commission
BSH	Bundesamt für Seeschifffahrt und Hydrographie (Federal Maritime and Hydrographic Agency)
CDDA	Common Database of Designated Areas
CP	Central Portal
EEA	European Environment Agency
EEZ	Exclusive Economic Zone
GDB	GeoDataBase
GFCM	General Fisheries Commission for the Mediterranean
HELCOM	Helsinki Commission
IMAP	Integrated Monitoring and Assessment Programme
INFO/RAC	Information and Communication/Regional Activity Centre
MSP	Maritime Spatial Planning
NVE	Noregs Vassdrags- og Energidirektorat (Norwegian Water Resources and Energy Directorate)
OGC	Open Geospatial Consortium
OSPAR	Oslo and Paris Conventions
PAP-RAC	Priority Actions Programme/Regional Activity Centre
REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
SHOM	Service hydrographique et océanographique de la Marine (Hydrographic and Oceanographic Service of the Navy)
SSL	Secure Socket Layer
TEG	Technical Expert Group
UNEP-MAP	United Nations Environment Programme - Mediterranean Action Plan
WCS	Web Coverage Service
WFS	Web Feature Service
WMS	Web Map Service
WMTS	Web Map Tile Service