EMODnet Thematic Lot n°5 - Chemistry

EASME/EMFF/2020/1.3.1.11/Lot 5/SI2.846161

Start date of the project: 03/10/2021 (24 months + 24 months)

Centralisation Phase

Quarterly Progress Report (12th)

Reporting Period: 01/07/2024 – 30/09/2024

Contents

Disclaimer

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the CINEA or of the European Commission. Neither the CINEA, nor the European Commission, guarantee the accuracy of the data included in this study. Neither the CINEA, the European Commission nor any person acting on the CINEA's or on the European Commission's behalf may be held responsible for the use which may be made of the information.

1. Highlights in this quarter

*[List the quarterly progress for each of the tasks specified in Section 1.4.1 of the Tender Specifications; provide an explanation for any tasks in which progress has not been noted. Provide in the table a list of **all** Milestones and Deliverables as from the technical workplan in numerical order, the date due, status and date delivered. Max 2 pages]*

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

EMODnet Chemistry uses the SeaDataNet infrastructure and standards to integrate and harmonise the marine chemistry datasets managed by its network of expert data centres (mainly NODCs). During the reporting period, 8,308 new datasets were added to the EMODnet Chemistry distributed CDI system, which manages eutrophication, contaminant and marine litter data. These new data sets were provided by 12 organisations, which are all members of the EMODnet Chemistry consortium. At the recent Plenary Meeting an overview was presented of the CDI population activity by all Consortium members and as follow up several data providers indicated that new CDI – data records were underway to meet the next harvesting deadlines.

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

The regionally aggregated, harmonised and validated data collections for eutrophication and contaminants that were released in the previous period (May 2024) have been described in the Sextant catalogue and published in the Central portal (as part of the EMODnet catalogue and with direct links in the narrative). 21 new maps for contaminants showing measurements counts (All Years) for 12 parameters, monitored matrices (All Years) for all available contaminants and the group of marine organisms where contaminants have been measured for 8 parameters were generated and the publication process (in the catalogue and in the viewer) has started. In parallel, the micro litter data sets harvested in June 2024 were harmonized, validated and transmitted to Ifremer for the generation of maps.

In September 2024 a data harvest has been undertaken for beach litter data sets. Following the harvest, the data packages were delivered to OGS as coordinator for the marine litter data collections. Upon request a second harvest was made, now dividing all beach litter data setsc over the MSFD regions which are also used for eutrophication and contaminants harvest deliveries. This is done to facilitate easier handling of the beach litter substance records in Excel. The delivery included lists indicating which data sets were newly added or had been updated since the previous harvesting round, and which data sets were still the same as before. The latter helps OGS as it implicates that they do not have to repeat their validation and harmonisation activities again for those 'old' data sets. In a later stage, new harvests will be undertaken, starting with seafloor litter.

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

All EMODnet Chemistry data products are hosted in the Ocean Browser by ULiege (for the eutrophication maps), in HCMR Geoserver (for the contaminants maps) and in IFREMER Geoserver (for the marine litter maps). These map layers are accessible via the EMODnet Map Viewer. In addition, all interpolated DIVA eutrophication maps are available via the EMODnet ERDDAP service.

During the reporting period, further progress was made with working out the work flow for the publication of the eutrophication data collections via ERDDAP and the software for the different steps was developed. Due to the large amounts of metadata present in the collections and coded through standard vocabularies, further work is needed to provide meaningful sets of information. The final goal is to create an ERDDAP instance for discovery and access to all regional aggregated, validated and harmonised data collections for eutrophication and pollutants (including marine litter) and a WMS service to display the stations on the CP Map Viewer.

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

All EMODnet Chemistry data, data products and content are made available through the EMODnet Map Viewer, the EMODnet Product Catalogue and the narrative in the central portal. Use is made of machine-to-machine services from EMODnet Chemistry partners to the Central portal services to feed the map viewer and the catalogue by which data and data products are made directly available for download.

During the reporting period, the Sextant product catalogue (harvested by the EMODnet central catalogue) was updated with metadata records for the global eutrophication and contaminants data collections while work started for the compilation of the records related to the new contaminants maps.

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

During the reporting period, EMODnet Chemistry completed the entire revision and update of its narrative section and contributed to the sections: Reports, MoU, Partnership and Guidelines. Finally, 1 use case (data collections about contaminants and eutrophication) was published and 2 news items were published on the portal and included in the monthly newsletter.

Task 6: Ensure the involvement of regional sea conventions:

During the reporting period, EMODnet Chemistry maintained active dialogue with all RSCs through the MSFD Technical Groups (see Task 7 for more details) and with them directly. In fact, a survey was created and distributed by ICES to the MSFD board of experts to better tune the list of chemical parameters and ancillary parameters to be included in the next harvest.

In addition, a webpage dedicated to the MSFD Board of experts was proposed by EMODnet Chemistry and requested to the Secretariat. The proposal was accepted and OGS has drafted the content of the webpage following the framework provided by ICES. The content is currently being revised by ICES.

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

EMODnet Chemistry contributes to the implementation of EU legislation by maintaining communication with and participating in the MSFD Working Groups and Technical Groups (DIKE, Data, ML, Contaminants).

During the reporting period, the Technical Group on Data (TG Data) met on 27 September 2024 and discussed the role of EMODnet in data reporting according to Article 19(3) of the MSFD Directive. Surprisingly, the EEA proposed a workflow that does not include EMODnet to look at the available data and formats, while defining a data template. This proposal came out despite JRC confirming the voluntary adoption by Member States of EMODnet Chemistry as data platform for the collection of marine litter data, HELCOM confirmed the adoption of EMODnet platform for the collection of beach litter data in the Baltic sea, and JRC explained the work done in the analysis of EMODnet Chemistry eutrophication and contaminants data and metadata. Although EMODnet is not considered as the official data platform, several countries already include their MSFD monitoring data as part of the EMODnet Chemistry network.

Finally, EMODnet Chemistry coordinator signed the subcontract with VLIZ for EDITO-Infra.

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

Since centralisation, the use of the Chemistry narrative at the Central Portal is monitored via Europa Analytics and the EMODnet secretariat provides quarterly statistics. Chemistry has developed a new tool (Graylog) to monitor the viewing and downloading of EMODnet Chemistry data products from their providers (notably ULiege Ocean Browser, IFREMER Geoserver, HCMR Geoserver and DOI landing pages), which has been configured to produce the overall download statistics presented in quarterly reports. The EMODnet Chemistry Helpdesk is also centralised: all user interactions are recorded by the EMODnet Secretariat Helpdesk and forwarded to the lots via JIRA tickets. Relevant JIRA tickets are answered immediately.

Task 9: Maintain the existing thematic web portal for a maximum of 6 months from the start of the project:

This Task refers to the first project phase. No activity is reported for the renewal period.

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
D1.1 Quarterly concise progress reports	WP1	M3 (03/01/2024), M6 (03/04/2024), M9 (03/07/2024), M12 (03/10/2024), M15 (03/01/2025), M18 (03/04/2025), M21 (03/04/2025)	Delivered (M3 Q42023, M6 Q12024, M9 Q22024, M12 Q32024)	15/01/2024, 15/04/2024 15/07/2024 15/10/2024	
D1.2 Annual Interim report	WP1	M13			
D1.3 Final report	WP1	M26			
D1.4 Handover plan for service continuity	WP1	M26			
D1.5i Short minutes/action list of project meetings	WP1	M1 (03/10/2023), M6 (03/04/2024), M12 (03/10/2024), M18 (03/04/2025, M23 (03/09/2025)	Delivered (M1, M6)	28/11/2023 (PFG meeting) 19/04/2024 (SC meeting) 23-24/09/2024 (PGG+SC meeting)	
D1.6 Providing content to the central portal	WP1	Continuously	Delivered		
D2.2i Training activity for DC	WP2	M4 (03/02/2024)	Delivered	30-31/01/2024	

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
D2.2i Data harvested for eutrophication, including rivers	WP2	M3 (03/01/2024), M12	Delivered (M3) 15/02/2024	15/02/2024	
D2.3i Data harvested for contaminants	WP2	M4 (03/02/2024), M14	Delivered (M4)	28/03/2024	
D2.4i Data harvested for beach and seafloor	WP2	M7, M17	Delivered (beach litter) Delayed (seafloor litter)	26/09/2024	Following TG ML's call for data, we received several contributions. Especially Spain reviewed the data of the last 4 years and Denmark last year. They asked not to publish the old versions (which would be in the harvest). So we decided to postpone the harvesting. This delay should not affect the publication of the new beach and seafloor litter maps planned for M17.
D2.5i Data harvested for microlitter	WP2	M7, M17	Delivered	25/06/2024	
D2.6i Data harvested for new litter types	WP2	M16			
D2.7 Updates on marine litter guidelines	WP2	M6 (03/04/2024)	Delayed	December 2024	Discussed at TG ML in May 2024, needs revision and endorsement by TG ML

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
D3.1 Validated pan-European collections for eutrophication, including rivers	WP3	M7, M19	Delivered (M7)	31 May 2024	
D3.2 Validated collections for contaminants	WP3	M7, M19	Delivered (M7)	31 May 2024	
D3.3 Validated collections for beach and seafloor litter	WP3	M11, M21	Delivered (M11) for beach litter, still pending seafloor litter	30 September 2024 (beach litter)	Seafloor expected by the end of October 24 (including alignment with ICES data)
D3.4 Validated collections for microlitter	WP3	M11, M21	Delivered (M11)	12 September 2024	
D3.5 Validated collections for new litter types	WP3	M20			
D3.6 High-resolution DIVA maps near river mouths	WP3	M21			
D3.7 New maps for contaminants	WP3	M15			
D3.8 New pan-European and regional DIVA maps for eutrophication	WP3	M21			
D3.9 New maps for microlitter	WP3	M17			
D3.10 New maps for beach and seafloor litter	WP3	M17			
D4.1 Standard machine- to- machine services	WP4	M3	Delivered	January 2024	
D4.2 Dedicated machine- to- machine services and APIs adapted / delivered for special functionalities	WP4	M9	Delivered		
D4.3 Upgraded databases for new litter types	WP4	M12	Delayed		This is prevented by the lack of defined guidelines (D2.7). They are still being revised and amended in cooperation with the TG ML
D4.4 Improved services for eutrophication	WP4	M10	Delivered		

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
D4.5 Improved services for marine litter	WP4	M10	Delivered		
D4.6 Improved services for contaminants	WP4	M12	Delivered		
D4.7 Improved webODV tool and integration in central portal	WP4	M18			
D4.8 Monitoring data about visits and usage	WP4	Continuously	Ongoing		
D5.1 Operate Help-desk via Jira tickets	WP5	Continuously	Delivered		
D5.2 Meetings of Board of MSFD experts	WP5	M16, M18,M22	Delivered (an extra meeting to show EMODnet Chemistry webODV data explorer and extractor service)	31 May 2024	
D5.3 International cooperation and interoperability	WP5	Continuously	Delivered		
D5.4 Promotional material and up-to-date thematic space at central portal	WP5	Continuously	Delivered		
D5.5 Presentations at relevant conferences	WP5	Regularly	Delivered		

2. Identified issues: status and actions taken

*[Provide an **overview of issues** identified by CINEA/ DG MARE/ Secretariat (Table A) in the past quarter - new as well as pending ones, the status of those issues, and actions taken to address them and/or roadmap with remaining actions planned to resolve the issues. In Table B, provide information about any issues and challenges identified by yourself.]*

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**
EMODnet lots to check if filter values are displayed in the preferred order (EM-957)	Pending	Final revision from EMODnet Chemistry TWG		
EMODnet Catalogue tags Chemistry: add review of Geonetwork interface /EM-533(	Pending			

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**
View and Download in the Products Catalogue (EM-963)	Pending	On 2 October 2024, CP team informs Chemistry that no changes will be made before GeoNetwork is upgraded to a newer version		
No possibility to change the color scale in the climatologies (EM-743)	Pending	Waiting for Geonetwork upgrade		

3. Communication assets

[In Table A, list peer reviewed publications directly (co-)authored by consortium and project partners in the reporting period. In Table B, list all non-peer reviewed publications (co-)authored. In all cases, indicate the type of publication, provide the full reference incl. title, volume and issue etc., and whether the publication is open or closed access.]

A. (Co-)Authored peer-reviewed publications in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
	e.g. paper; conference proceedings; book chapter; …				
May 2024	Conference proceedings	S. Simoncelli, M. Vernet, C. Coatanoan (Eds), (2024). International Conference on Marine Data and Information Systems Proceedings Volume, IMDIS 2024 Bergen (Norway) 2729 May 2024, Misc. INGV, 80: 1398.		https://doi.org/10.13127/misc/80	Yes

B. Other/non-peer reviewed types of publications (co-)authored in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
	e.g. paper; conference				

B. Other/non-peer reviewed types of publications (co-)authored in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
	proceedings; book chapter; …				

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

4. Monitoring indicators

[Refer to the standardised monitoring tool, i.e. Europa Analytics, to complete the indicators excel template, and provide a short explanation in the table below on the numbers and trends for each indicator when possible/applicable. Indicate clearly if monitoring was carried out using tools other than Europa Analytics.]

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	CDI catalogue service	Several new data sets have been entered. This quarter results in a consistent increase of data.
What is your opinion on the data coverage within EMODnet for your thematic?	CDI catalogue service	The data coverage is very good for all European seas and there is a steady increase for most regions
B) Usage of data in this quarter	CDI RSM shopping ledger service and personal requests	The number of CDI downloads is much higher (+2164%) than in the previous quarter.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Sextant Product Catalogue	The number of products increased in the quarter corresponding to the release of new contaminants maps
B) Usage of data products in this quarter	Download Tracking service for data products	There is a general increase in the usage due to the fact that more services are included in the computation of the KPI
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	CDI catalogue service	New data have been supplied by 12 regular data providers.
4. Online 'Web' interfaces to access or view data	Manual compilation	Updates for contaminants maps
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	The Chemistry section is visited every day with a maximum of 30 visitors per day. In this respect there is not much difference between the current and previous quarter.

5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	The numbers in the last quarter are almost the same as in the previous quarter, so quite steady. These numbers only concern the static narrative section, while it wouold be interesting to know how many maps and products are viewed and downloaded from the CP central services for chemistry.

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

5. List of abbreviations and acronyms

AWI: Alfred Wegener Institute.

CDI: Common Data Index, which provides a highly detailed description of the data, answering the questions: where, when, how, and who collected the data, and how to get them. One CDI describes a data series which can be a vertical profile on a fixed location, a timeseries or a trajectory dataset.

CINEA: the European Climate, Infrastructure and Environment Executive Agency.

CMEMS: the Copernicus Marine Environment Monitoring Service (led by Mercator-Océan).

CP: Central Portal

DIVA: Data-Interpolating Variational Analysis, a software tool that allows to spatially interpolate (or analyse) observations on a regular grid in an optimal way.

DOI: Digital object identifier.

EC -JRC: European Commission Joint research Centre.

EDMO: European Directory for Marine Environmental Data.

EEA: European Environment Agency.

HCMR: Hellenic Centre for Marine Research.

HELCOM Convention: Baltic Marine Environment Protection Commission, the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, known as the Helsinki Convention.

ICES: International Council for the Exploration of the Sea.

IFREMER: French Research Institute for Exploitation of the Sea.

MSFD is the Marine Strategy Framework Directive.

NODC: National Oceanographic Data Centre defined within the International Oceanographic Data Exchange (IODE) System of the UNESCO Intergovernmental Oceanographic Commission(IOC).

Ocean Browser: the EMODnet Chemistry data products viewing and downloading service that allows users to visualize gridded fields on-line. It is based on open standards from the Open Geospatial Consortium (OGC), in particular Web Map Service (WMS) and Web Feature Service (WFS).

webODV: the Ocean Data View – online, the online service to explore, subset, visualize, and extract data sets in multiple formats from the harmonized, standardized, validated data collections that EMODnet Chemistry is regularly producing and publishing for all European sea basins for eutrophication and contaminants.

OGC: Open Geospatial Consortium.

OGC CSW: the Open Geospatial Consortium Catalog Service for the Web.

OGC WMS-WFS: the Open Geospatial Consortium Web Map Service and Web Feature Service.

OSPAR Convention: the Convention for the Protection of the Marine Environment of the North- East Atlantic.

RSCs: Regional Sea Conventions.

SeaDataNet: the pan-European infrastructure for ocean & marine data management sponsored within FP7 (grant agreement 283607, 1/10/2011-30/9/2015) linking more than 100 national oceanographic data centres and marine data centres from 35 countries riparian to all European seas.

Sextant products metadata catalogue: the EMODnet Chemistry data products discovery service used for searching Chemistry data products and linking to the viewingservice.

TG Data: the MSFD Common Implementation Strategy Technical Group on Marine Data.

TG ML: the MSFD Common Implementation Strategy Technical Group on Marine Litter.

ULiege: University of Liège.

WG DIKE: Working Group on data, information and knowledge exchange.