



**EMODnet**



European Marine  
Observation and  
Data Network

# **EMODnet Thematic Lot n° 5 - Chemistry**

**EASME/EMFF/2020/3.1.11/Lot 5/SI2.846161**

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

**Centralisation Phase**

**Quarterly Progress Report (7th)**

**Reporting Period: 01/04/2023 – 30/06/2023**

**V2**



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# 1. Highlights in this quarter

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*[List 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 and status. Max 2 pages]*

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

During the reporting period, EMODnet data centres entered several new datasets that were made available through the CDI data discovery and access service. This success is the result of continued interaction with the Partnership to obtain new datasets and update existing ones. Two regional meetings were organised on April 3, 2023, involving data centres in the Mediterranean Sea, Black Sea, and NE Atlantic Ocean, as well as in the North Sea, Baltic Sea, and Arctic Ocean, to push for timely updates to data and metadata, given upcoming data collection deadlines in April 2023 (for eutrophication and other data) and May 2023 (for contaminant and microlitter data).

## **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**

During the reporting period, the regional aggregated, validated and harmonised data collections for eutrophication and contaminants were published in the Central Portal (with new sextant entries for the Products Catalogue and updated descriptions in the narrative section).

The DIVA interpolated maps for eutrophication and associated metadata descriptions (as Sextant and DOI entries) have been completed and a ticket has been opened for their publication in the Central Portal viewer. The third level menu is implemented for eutrophication (by sea regions) and eutrophication (coastal regions).

The data collections on beaches, seabed and microlitter were shared with the JRC and TG ML members for further analysis and with IFREMER for map production.

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

All EMODnet Chemistry datasets are made available through the CDI Data Discovery & Access service, accessible through the central portal. Dedicated OGC WMS-WFS services, which include the locations of datasets per chemical group (P36) and options to click on map objects to return to those group datasets within the CDI service interface, are loaded into the Map Viewer of the Central Portal. All EMODnet Chemistry data products are hosted and made available as OGC layers harvested from the Central Portal Map Viewer by ULiege (Ocean Browser for eutrophication maps), by OGS Geoserver (contaminants maps), and by IFREMER Geoserver (marine litter maps).

The EMODnet Chemistry products catalogue, based on the SeaDataNet Sextant catalogue, is continuously updated in its metadata records. An operational OGC CSW service is maintained for the Sextant products catalogue, which is used by the central portal to add the data product metadata records to the CP Products Catalogue.

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

EMODnet Chemistry maintains two catalogues: 1) the CDI Catalogue, which provides discovery of and access to datasets and continues as an 'external' service that users can access through the narrative area and through the CDI map layers in Map Viewer; 2) the Sextant Product Catalogue, which manages metadata records for

data products and whose content is collected by the central portal for inclusion in the Products Catalogue, while the associated data products are shared with the central portal for direct download.

The Ocean Browser service continues to provide DIVA eutrophication maps to the Map Viewer of the central portal, while marine litter and contaminant maps are provided through the OGC WMS-WFS Geoserver services of IFREMER and OGS.

Finally, the webODV service for viewing, extracting, and exploring eutrophication and pollutant data collections will continue as an 'external' service and will be made available through the narrative.

Open issues to improve publication and functionality for users will be reported as JIRA tickets.

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

During the reporting period, EMODnet Chemistry updated the narrative section with new links and provided regular contributions to news and the monthly newsletter according to the given guidelines.

#### **Task 6: Ensure the involvement of regional sea conventions:**

During the reporting period, EMODnet Chemistry participated in the 21-22 June meeting (TG ML) and continued to support the regional sea conventions in implementing a centralised reporting strategy for marine debris data according to a clearly defined, agreed and methodologically sound data management plan. In addition, the second meeting of the MSFD Expert Panel (June 30, 13-14 CET) was held, also with representatives from the four regional sea conventions, to discuss the new pollutant data products.

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

The EMODnet Chemistry network of NODCs is heavily involved in the management of beach litter, seafloor litter and micro-litter data collected by Member States through MSFD monitoring and at the request of the JRC at the MSFD TG ML and GES meetings. Given the positive experience, the JRC has proposed EMODnet Chemistry as the data portal for collecting eutrophication and pollutant data, and a dialogue has been initiated to decide how best to specify the data set. In terms of planning next activities, we look forward to an official and planned data call to assist Member States in releasing their datasets and to align this activity with the release of EMODnet Chemistry data products.

EMODnet Chemistry participated in the Global Partnership on Plastic Pollution and Marine Litter (GPML) bilateral meeting on data harmonisation (CoP Chemicals Dimension) on May 2 and has been invited to the International Marine Litter Data Harmonisation Workshop scheduled for 29-31 August in Japan with the UNEP GPML Digital Platform, the Marine Plastic Litter Monitoring Data Sharing Project of the Ministry of Environment, Japan (MOEJ), NOAA NCEI, and other potential data centres that collect data from research, monitoring, NGO, and citizen science field campaigns and are able to aggregate and summarise the data for scientific and policy applications.

Following the March 2023 EMODnet Chemistry Stakeholder Meeting, we initiated a discussion on potential data contributions from scientific cruises from Germany and beyond by arranging (reviving) an exchange between PANGAEA and the SeaDataNet CDI service for validated datasets. A first meeting took place on June 2, and another is planned for July 13.

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

During the reporting period, the shutdown of the Chemistry portal interrupted the recording of user activity via the EMODnet Chemistry user forms; all user interactions are now recorded by the EMODnet Secretariat and forwarded to the portals via JIRA tickets. Relevant JIRA tickets are responded to immediately.

The number of users viewing and downloading EMODnet Chemistry data products (in Ocean Browser, IFREMER Geoserver, OGS Geoserver, or DOI landing pages) is captured via Matomo-Piwik. The system is in need of improvement.

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

On January 23, 2023, the EMODnet Chemistry Portal was shut down and all users will be redirected to the unified EMODnet Portal. To maintain Internet traffic as much as possible, detailed configuration of redirects ensured that all important content (narrative pages, subsections, reports, news, events, use cases, etc.) on the EMODnet Chemistry website was linked to the appropriate section on the unified EMODnet portal.

Since not all information fit in the Central Portal, a Google Drive folder was created to share content within the partnership and provide access to working and meeting documents.

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
MS2 EMODnet Chemistry content contributed to the central portal	1	M3-M24	Delivered		
D1.1 Quarterly concise progress reports	1	M3, M6, M9, M12, M15, M18, M21	Delivered	M3 January 2022, M6 April 2022, M9 October 2022, M12 December 2022, M15 January 2023, M18 April 2023, M21 June 2023	
D1.2 Annual Interim report	1	M12 (3 October 2022)	Delivered	3 Nov 2022	
D1.3 Final report	1	M24 (3 October 2023)			
D1.4 Handover plan for service continuity	1	M24			
D1.5i Consortium Agreement (plus Subcontracts and Advisory Agreements)	1	M2 (December 2022)	Delivered		
D1.6i Short minutes/action list of project meetings	1	M1, M6, M12, M18, M23	Delivered	M1 SC November 2021, M6 PFG December 2021, M6 SC End March 2022, M12 SC September 2022, M18 PFG and SC March 2023	
D1.7 Providing content to the central portal	1	Continuously	Delivered		

MS3 Chemistry (eutrophication, contaminants and microlitter) CDI metadata and datasets available from the central portal	2	M6, M18	Delivered	Continuous inclusion of CDI metadata and datasets available from the CP	
MS4 Marine litter datasets included in the EMODnet databases and available from the central portal	2	M12, M24	Delivered	Continuous inclusion of new datasets available from the CP	
D2.1 List of major rivers with identified data sources	2	M3 (January 2022)	Delivered	18/05/2022	
D2.2 Training activity for DC	2	M3 (January 2022)	Delivered	Dec 2021	
D2.3i Data harvested for eutrophication, including rivers	2	M8, M17	Delivered (M8) Delivered (M17)	01/07/2022 (M8) 17/05/2023 (M17)	
D2.4i Data harvested for contaminants	2	M9, M20	Delivered (M9) Delivered (M20)	10/10/2022 (M9) 13/06/2023 (M20)	
D2.5i Data harvested for microlitter	2	M12 (3 October 2022)	Delivered (M12)	10/10/2022(M12) Second data harvest in 17 March 2023	
D2.6 Updates on marine litter guidelines	2	M6 (April 2022)	Delivered	11/05/2022	
MS5 High resolution DIVA maps near major river mouths available from the central portal	3	M14	Delivered		
MS6 Dedicated maps for contaminants available from the central portal	3	M16	Delivered		
MS7 Pan-European maps for eutrophication available from central portal	3	M18	Delivered	M15	
MS8 Concentration maps of beach and seafloor litter available from the central portal	3	M20	Delivered	M15	
D3.1 Validated pan-European collections for eutrophication, including rivers	3	M12, M21	Delivered (M12)	12/10/2022	
D3.2 Validated collections for contaminants	3	M13, M22	Delivered (M13)	Dec 2022	
D3.3 Validated collections for beach and seafloor litter	3	M19	Delivered (seafloor)	seafloor, 31 May 2023	Seafloor data collection was delivered to TGML and

			Delayed (beach litter)		IFREMER, responsible for the ML maps. The collection of beach litter data was significantly expanded and required extensive work to validate and extract unrestricted data, which is currently being completed. The expected date for publication of the beach and seafloor litter data collections is 31 August 2023
D3.4 Validated collections for microlitter	3	M17	Delivered	13 June 2023	Microlitter data collection was delivered to TGML and IFREMER, responsible for the ML maps. To facilitate the CP team, the expected date for the publication of the microlitter data is the same as for D3.3: 31 August 2023
D3.5 High-resolution DIVA maps near river mouths	3	M16	Delivered	27/01/2023	Maps are ready and available from the Ocean Browser. Need to be included in the Central Portal Map Viewer (JIRA ticket EM-801)
D3.6 New maps for contaminants	3	M15, M24	Delivered (M15)	30/06/2023	M15: HCMR presented the maps to the board of MSFD experts on contaminants on 30 June 2023. Based on the feedback received, the maps will be finalised and published by M24
D3.7 New pan-European DIVA maps for eutrophication	3	M14, M23	Delivered (M14)	27/01/2023	M23 - Despite the technical proposal, participants agree that it does not make sense to publish a 2023 version of the eutrophication maps, as the second harvest

					increased the total amount of data by around 5%. This new version would not add value over the previous one.
D3.8 New maps for microlitter	3	M23			
D3.9 New maps for beach and seafloor litter	3	M23			
MS1 EMODnet Chemistry data and data products available from central portal	4	M6	Delivered	03/04/2022	
D4.1 Standard machine-to-machine services delivered for common functionalities	4	M3	Delivered		See text under tasks 3 and 4
D4.2 Dedicated machine-to-machine services and APIs adapted / delivered for special functionalities	4	M6	Delivered		See text under tasks 3 and 4
D4.3 Upgraded databases for new litter types	4	M12	Delivered	M12	
D4.4 Improved services for eutrophication	4	M10	Delivered	03/08/2022	
D4.5 Improved services for marine litter	4	M10	Delivered	03/08/2022	
D4.6 Improved services for contaminants	4	M12	Ongoing		
D4.7 ODV Extractor with expanded plots and integrated in the central portal	4	M18	Ongoing		
D4.8 Monitoring data on visits and usage	4	Continuously	Delivered		
D5.1 Operate a helpdesk	5	Continuously	Delivered		
D5.2 Meetings of Board of MSFD experts	5	M6, M12, M18	Delivered (eutrophication and contaminants)	27/01/2021 (eutrophication) 30/06/2023 (contaminants)	Meeting on Marine litter maps will be held in September 2023 as established during the first SC meeting to be in line with the release of EMODnet Chemistry products.
D5.3 International cooperation and interoperability	5	Continuously	Delivered		
D5.4 Promotional material and up-to-date	5	Continuously	Delivered		



thematic space at central portal					
D5.5 Presentations at relevant conferences	5	Regularly	Delivered		

## 2. Identified issues: status and actions taken

[Provide an **overview of issues** identified by CINEA (Table A) - 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
<b>Chemistry - EMODnet Catalogue Tags (EM-533)</b>	Pending	The list has been posted by Chemistry. Now waiting for implementation by CP	n.a.	n.a.
<b>NEW Chemistry page on CP (EM-506)</b>	Pending	Content is continuously revised and enriched by EMODnet Chemistry with the help of CP team.	n.a.	25/5/2023

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
<b>Filtering in the Product Catalogue: from default fields to more user-friendly items (Geographic area, Matrix, Theme, ...) EM-329</b>	Pending	Select metadata fields for searching in CP GeoNetwork		
<b>No possibility to change the color scale in the climatologies (EM-743)</b>	Pending	Looking to a new feature that needs to be developed to allow users selecting the colour range with different max/min	n.a.	n.a.
<b>Map viewer products list (EM-767)</b>	Pending	The window listing all products in the map viewer is too small and cannot be moved to allow the user to see all available map layers.	n.a.	n.a.
<b>Map viewer: downloading of netCDF files not working (EM-811)</b>	Pending			
<b>Issue EM-812 - Download beach litter shapefile</b>	Pending			
<b>Map viewer: Lists with unavailable options (EM-811)</b>	Pending			

<b>Map viewer: clear the layers when the user exits the session</b>	Pending			
<b>EMODnet Catalogue Tags (EM-612)</b>	Pending	Review the content of the products catalogue tags (topic, keywords, years, formats, ...)		

### 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
3 May 2023	paper	Pietropolli, G., Manzoni, L., & Cossarini, G. (2023). Multivariate Relationship in Big Data Collection of Ocean Observing System. <i>Applied Sciences</i> , 13(9), 5634.		<a href="https://doi.org/10.3390/app13095634">https://doi.org/10.3390/app13095634</a>	Yes
	e.g. paper; conference proceedings; book chapter; ...				

#### 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 proceedings; book chapter; ...				

*For a compressive 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, resulting in a steady increase of data.
What is your opinion on the data coverage within EMODnet for your thematic?	Sea regions in the CDI service following the latest EEA regional polygons.	The data coverage is very good for all sea regions and there is also a steady increase per region.
B) Usage of data in this quarter	CDI RSM shopping ledger service and personal requests	This quarter only one CDI was requested by one user. We have to see in coming quarters if this dramatic decrease continues.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Central Portal Product Catalogue	Number of available products is increased by 6 (aggregated datasets).
B) Usage of data products in this quarter	Matomo - Piwik	With the centralisation we are not able to report volumes of data downloaded. Also, this quarter we see a dramatic decrease of downloads, to be monitored in the next periods.
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	CDI catalogue service	A lot of new data has been supplied by multiple regular data providers. Also, a number of providers made corrections.

5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	The daily number of page views is irregular, but quite stable between quarters. While last quarter we recorded a maximum of over 45, this quarter it was only over 30.
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	There is a slight decrease in the total number of visitors, whose value is around 400, while the number of page views has decreased by 30%.

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

## 5. Annex: Other documentation attached

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*[List in Annex if you wish to provide any additional information.]*