



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 (8th)

Reporting Period: 01/07/2023 – 30/09/2023

v2



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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

During the reporting period, EMODnet data centres continued to input new datasets into the EMODnet Chemistry databases (both the distributed system for managing eutrophication, pollutant and microlitter data and the centralised system for managing beach and seafloor litter data). CDI metadata is created for all datasets to make the data available through the CDI Data Discovery and Access Service. In parallel, we are registering a constant update of existing data and metadata entries as a result of continuous interaction with the partnership. Two new data collections have been created for eutrophication and pollutants, four for marine litter (beach, seafloor from trawlings, floating micro-litter and sediment micro-litter).

In synergy with the EMODnet Ingestion platform, EMODnet Chemistry participated in several meetings with Erasmus Maris to discuss the uptake of micro-litter data through citizen science activities.

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 DIVA interpolated maps for eutrophication and the associated metadata descriptions (as Sextant and DOI entries) were published and described in the Central Portal Product Catalogue. The third level menu has been implemented for the climatologies per sea region and the ticket for publishing in the Central Portal Map Viewer is still open, as several activities and changes are required for their publication.

Concerning marine litter, the existing maps were updated by adding the new data, 3 new products were created for seafloor litter and 16 for micro-litter. The third level menu has been implemented for beach litter and microlitter to distinguish the “official monitoring” products from “other sources” products in the Map Viewer. The ticket for publishing in the Central Portal Map Viewer has been opened and the publication under finalisation. The associated metadata descriptions (as Sextant and DOI entries) were published and described in the Central Portal Product Catalogue as were the marine litter data collections on which the maps are based. The descriptions in the narrative part were also updated.

Concerning contaminants, four new types of maps were produced. Four of them are specific to each of the 12 selected parameters in three matrices (water, sediment and biota). The maps for contaminants will be ready for publication soon.

The new version of the regional aggregated, validated and harmonised data collections for eutrophication and pollutants will be published in the central portal (with new Sextant entries for the Products Catalogue and updated descriptions in the narrative part). These new collections also have been loaded into the WebODV service for exploration and extraction.

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, which is accessible through the central portal. Dedicated OGC WMS-WFS services, which include record locations per

chemical group (P36) and options to click on map objects to return to these group records within the CDI service interface, are loaded into the Central Portal Map Viewer.

All EMODnet Chemistry data products are hosted by ULiege (Ocean Browser for eutrophication maps), by OGS Geoserver (pollutant maps) and by IFREMER Geoserver (marine litter maps). These map layers are made available as OGC layers via the Map Viewer of the central portal

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 product catalogue, which is used by the central portal to add the metadata records of the data products 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:

During the reporting period, two EMODnet Chemistry catalogues were kept up to date: 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 the Map Viewer; 2) the Sextant Product Catalogue, which was updated with the metadata records for the new data products (DIVA maps v23, data collections v23 for marine litter, and marine litter maps v23). This content is collected by the central portal for inclusion in the Products Catalogue, while the associated data products are made available to the central portal for direct download.

The Ocean Browser service was updated with the new DIVA eutrophication maps provided to the Map Viewer of the central portal, while the marine litter maps were provided through the OGC WMS-WFS Geoserver services of IFREMER.

Finally, the webODV service for viewing, extracting and exploring has been updated with the new version of the eutrophication and pollutant data collections and continues to be provided as an 'external' service through the narrative. Recently, a new category of maps, called “Contaminants/Eutrophication (webODV service)” has been proposed to be added to the CP Map Viewer. This category will contain 5 map layers of webODV map products which illustrate the potential of the webODV services for making scientific data maps (to be provided via the GetCapabilities service at <https://emodnet-chemistry.webodv.awi.de/api/wms?SERVICE=WMS&REQUEST=GetCapabilities>).

Open issues to improve functionality for users and to release new products or services are 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 organised the third meeting of the Board of MSFD experts (8 September, 10-11.30 CET) with representatives from the four regional sea conventions, JRC, EEA and other organisations to discuss the new marine litter data products.

In addition, EMODnet Chemistry participated in the Seafloor Macrolitter Imaging and Quantification Workshop 2023 (19-21 September) and the online session of the TG ML on Seafloor Baselines and Threshold Value setting (14 September), and continued to support the regional sea conventions in implementing a central reporting strategy for marine litter data.

Finally, EMODnet Chemistry participated in a meeting with the ICES Database on the Marine Environment (DOME) to discuss the exchange of microlitter data for HELCOM and OSPAR areas.

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

The EMODnet Chemistry network of NODCs is instrumental in managing the data on beach litter, seafloor litter and micro-litter collected by Member States through MSFD monitoring and at the request of the JRC at the MSFD TG ML and GES meetings. The expansion Seafloor macrolitter from images and floating macrolitter is under discussion. In view of the positive experience, the JRC has proposed EMODnet Chemistry as a data portal for the collection of eutrophication and contaminant data and a dialogue is ongoing to support the understanding of EMODnet data and metadata. Looking at the next phase, the EEA has given us a deadline of the end of May to obtain harmonised EMODnet data.

Looking at the global perspective, EMODnet Chemistry participated in the International Marine Litter Data Harmonisation event organised by the Japanese Ministry of Environment (MOEJ) in Tokyo on 29-31 August, together with UNEP, the Japanese AOMI, NOAA NCEI, the JRC and other potential data centres collecting marine litter data. As a follow-up, regular meetings of the CoP Chemicals Dimension of the Global Partnership on Plastic Pollution and Marine Litter (GPML) are held.

EMODnet Chemistry is also actively contributing to the SDG 14.3.1 Federated Data System by participating in the initiatives discussing the metadata and architecture system.

Finally, EMODnet Chemistry was invited to the Back to Blue initiative to build a federated architecture of interoperable databases to address the marine pollution data gap.

During the reporting period, regular meetings with PANGAEA continued (on 3 July and 5 September) to discuss the technical aspects of data exchange, adopting the SeaDataNet CDI service for validated datasets.

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

The shutdown of the Chemistry Portal has interrupted the recording of the user statistics concerning the visualisation and download of data products which was previously obtained via EMODnet Chemistry Piwik. Only website visualisation is monitored via Europa Analytics and statistics are provided to us by the EMODnet Secretariat on a three-monthly basis. During the reporting period, we identified a new tool (Greylog) to monitor users viewing and downloading EMODnet Chemistry data products (in Ocean Browser, IFREMER Geoserver, OGS Geoserver or DOI landing pages). We are currently in the process of exploring if this software could be configured at each of the partner servers to count the different log files and generate the download statistics for reporting in the Quarterly reports.

The shutdown has also interrupted the EMODnet Chemistry Helpdesk and with it the recording of interactions with users via the EMODnet Chemistry user forms; all user interactions are now recorded by the EMODnet Secretariat Helpdesk and forwarded to the lots via JIRA tickets. Relevant JIRA tickets are responded to immediately.

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 were 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, M23 SC Sep 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) (under publication on CP)	12/10/2022 (M12) 30/09/2023 (M21)	
D3.2 Validated collections for contaminants	3	M13, M22	Delivered (M13) (under publication on CP)	Dec 2022 (M13) 30/09/2023 (M22)	
D3.3 Validated collections for beach and seafloor litter	3	M19	Delivered. Published in the CP (Sep 2023)	May 2023 (Seafloor) July 2023 (Beach litter).	
D3.4 Validated collections for microlitter	3	M17	Delivered	13 June 2023 (published in the CP on Sep 2023)	
D3.5 High-resolution DIVA maps near river mouths	3	M16	Delivered (under publication, JIRA ticket EM-801)	27/01/2023	
D3.6 New maps for contaminants	3	M15, M24	Delivered (under publication).	30/06/2023	The SC has decided to delete the second version of the maps,

			The second version (M24) was cancelled.		as the second data harvest has increased the total amount of data by about 5% and additional efforts are being made to improve data quality.
D3.7 New pan-European DIVA maps for eutrophication	3	M14, M23	Delivered (M14). (under publication JIRA ticket EM-801). The second version (M23) is cancelled.	27/01/2023	M23 – The SC has decided to delete the second version of the maps, as the second data harvest does not bring any relevant added value to the interpolated fields.
D3.8 New maps for microlitter	3	M23	Delivered. (published on CP Oct 2023)	01/07/2023	
D3.9 New maps for beach and seafloor litter	3	M23	Delivered. (published on CP Oct 2023)	01/07/2023	
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		
D4.2 Dedicated machine-to-machine services and APIs adapted / delivered for special functionalities	4	M6	Delivered		
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	Delivered (ODV Extractor with expanded plots). Delayed (integration in the CP)	M18 (ODV Extractor with expanded plots)	By the end of the current phase.

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	27/01/2021 (eutrophication) 30/06/2023 (contaminants) 08/09/2023 (marine litter)	
D5.3 International cooperation and interoperability	5	Continuously	Delivered		
D5.4 Promotional material and up-to-date thematic space at central portal	5	Continuously	Delivered		
D5.5 Presentations at relevant conferences	5	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
Chemistry - EMODnetCatalogue Tags (EM-533)	Pending	The list has been posted by Chemistry. Now waiting for implementation by CP	n.a.	n.a.
NEW Chemistry page onCP (EM-506)	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
Filtering in the Product Catalogue: from default fields to more user-friendly items (Geographic area, Matrix, Theme, ...) EM-329	Pending	Select metadata fields for searching in CPGeoNetwork		
No possibility to change the color scale in the climatologies (EM-743)	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.
Map viewer: downloading of netCDF files not working (EM-811)	Pending			
Issue EM-812 - Download beach litter shapefile	Pending			

Map viewer: Lists with unavailable options (EM-811)	Pending			
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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
15 September 2023	paper	Murray, C. J., van Bavel, B., Kideys, A. E., Lusher, A. L., Reker, J., Šubelj, G., & Andersen, J. H. (2023). Development and testing of a prototype indicator-based tool for identification of potential problem areas for marine litter in Europe's seas. <i>Science of The Total Environment</i> , 167096.		https://doi.org/10.1016/j.scitotenv.2023.167096	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 proceedings; book chapter; ...				

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. While additional QA-QC has led to de-activating a number of data sets for the Greater North Sea area.
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 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 has come back again after the previous quarter when only 1 CDI data set was downloaded. This indicates that users can find it again.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Central	"Total data product volume in GigaBytes" - EMODnet Chemistry cannot calculate this metric for this quarter. Currently all producers (IFREMER, Uliege, OGS and HCMR) are working on compiling a list of products and related information (UUID, download links, volume). This list will be continuously updated. In addition, ULiege is in the process of launching a massive compression of the volume of DIVA products (netCDF files) to facilitate downloading.
B) Usage of data products in this quarter	Matomo - Piwik	Due to centralisation, we do not have a web portal, so we cannot use a system like Matomo, formerly Piwik, to obtain this information. Considering that EMODnet Chemistry's products are produced by 4 institutions in 3 countries, using different systems for data storage and download, it is cumbersome and inefficient to collect and

		merge the download transaction logs from each of the partners quarterly. In the last quarterly report we received this information from Europa Analytics via API, but we were blocked and informed that Thematic Lots were not allowed to do so. We are currently exploring installing a Graylog client (Logstash) on the partners' side and displaying the data on the Graylog server in the OGS in real time, so that we will be able to report download statistics again.
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	CDI catalogue service	New data has been supplied by several 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 Chemistry section is visited every day with a maximum of 20 visitors per day. In this respect there is no 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 somewhat (circa 25%) lower than in the previous quarter

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

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