



**EMODnet**



European Marine  
Observation and  
Data Network

# EMODnet Thematic Lot n°4 – Chemistry

**EASME/EMFAF/2024-25/3.6/4500123361**

**Start date of the project: 03/10/2025 (24 months)**

**Operational Phase**

**Quarterly Progress Report (18th)**

**Reporting Period: 01/01/2026 – 31/03/2026**



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### Disclaimer

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## 1. Highlights in this quarter

### **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, population of multiple new data sets but also deprecation of a few existing data sets took place because of identified errors. As a total result 16.777 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 11 organisations, which are all members of the EMODnet Chemistry consortium. Concerning nutrient data by major rivers, progress has been made in Portugal, which represents a case study for structuring the flow from NRT to DM data. EMODnet Physics, +ATLANTIC CoLAB and the Instituto Hidrográfico (IH), part of the EMODnet Chemistry NODCs' network, collaborated with the Portuguese Environment Agency (APA) in Portugal to standardize the data in a test station located at the Tagus river mouth. ETT is also involved in the LandSealot and Code Blue projects, which allowed EMODnet Physics to put together a vast amount of river data (also chemicals) but there are no resources at local level to standardise them, a fundamental requisite to make them available through EMODnet Chemistry.

### **Task 2: Construct products from the available data sources that provide users with information about the distribution and value of parameters in time and space**

On 23 January 2026, 19 February 2026, and 23 March 2026, the EMODnet Chemistry Data Products Working Group met to review progress in preparing the 2026 edition of the aggregated, harmonised, and validated data collections for contaminants and eutrophication/ocean acidification. The data collections are based on two data harvests undertaken in December 2025. On 24 February 2026, the EMODnet Chemistry QC Working Group met to discuss the analysis of the adequacy of current ranges in the Mediterranean, based on EMODnet Chemistry unrestricted data. Following the analysis, the Mediterranean and Baltic Coordinators indicated the need to update the broad ranges. During the reference period, the EMODnet Chemistry Vocabulary Working Group created P02 codes for "Organohalogenes" and mapped over 1,000 P01s; corrected P02-P36 and P01-P02 mappings where necessary; reviewed carbon and nitrogen and their associated P02s and P35s; and addressed issues with the description and scope of the L24 vocabulary following the request to add new formats. Regarding marine litter data, the harvesting of beach litter data was postponed to M10 (3 August 2026) and M22 (3 August 2027) at the request of CEDRE to allow sufficient time for updating the OSPAR beach litter datasets. Collections for seafloor litter and micro-litter are continuing as planned (M7 and M17), and MARIS has requested that the data provider community submit the data on time.

### **Task 3: Develop and improve procedures for machine-to-machine connections to data and data products, in a common manner across the EMODnet service**

All EMODnet Chemistry data products are integrated into the EMODnet GeoNetwork and linked to the ULiege Ocean Browser for eutrophication maps, the HCMR Geoserver for contaminants maps, and the IFREMER Geoserver for marine litter maps. These map layers are accessible via the EMODnet Map Viewer. Additionally, all interpolated DIVA eutrophication maps are available through the EMODnet ERDDAP service. Dialogue is ongoing (via JIRA ticket EM-1152) to publish the 2025 version of DIVA maps in the Map Viewer and the EMODnet ERDDAP service. In parallel, work continued to update the harmonised and validated EMODnet Chemistry data collections in the Chemistry ERDDAP service (<https://erddap.emodnet-chemistry.eu/erddap/index.html>), and the latest version (v2025) is now available.

**Task 4: Fulfil the EMODnet Central Portal requirements that ensure all data and data products can be found, viewed and downloaded with ease (from the Central Portal)**

During the reporting period, progress was made on integrating the eutrophication products into the EMODnet portal systems for publication. This work involves several teams from the Chemistry consortium, as well as VLIZ and the EMODnet secretariat, and completion is expected in the next quarter. Work has begun on publishing new contaminants layers, with completion also due in the next quarter. At the request of VLIZ, on behalf of the EMODnet technical team, HCMR and MARIS confirmed that their Geoserver instances are using versions 2.28.2 and 2.27.1 respectively, meaning they are not vulnerable to a specific risk identified in previous versions.

**Task 5: Provide content for the reserved space for each thematic group within the EMODnet Central Portal, following any necessary requirements**

EMODnet Chemistry continuously revises the narrative section and contributes to news updates and the monthly newsletter in accordance with the specified guidelines. During the reporting period, the Q4 2025 report was published in the [dedicated section](#). Content and images were provided for the EMODnet Annual Report 2025. An updated version of the following guidelines was published in the [guidelines section: Guidelines to merge profile and time series data types \(eutrophication and contaminants\) - Version 2, 2026](#) and [Guidelines for eutrophication data aggregation, harmonisation and Quality Control - Version 3, 2026](#). [Three news items](#) were published and linked to the [EMODnet monthly newsletter](#). The use case “[EMODnet marine litter data to estimate macro-litter trend on the European coast](#)” was published. OGS has been working on a new use case based on the article entitled [Ocean oxygen data: how to measure, how to manage?](#) It will be published in the next quarter. The “[Key Services](#)” section was updated in line with the new registration system to request data downloads through the CDI Data Discovery and Access Service.

**Task 6: Ensure coherence with the efforts of the Regional Sea Conventions (RSC) and other relevant actors**

On 26 January 2026, EMODnet Chemistry representatives attended the meeting of the MSFD Technical Working Group on Marine Litter (TGML) to discuss seafloor macrolitter trends. At the EMODnet Chemistry SC meeting, ICES reported progress on actions agreed with the MSFD expert board in 2025, confirming completion of all marine litter-related actions. Responsibilities for contaminants were clarified, with HCMR assigned to update EMODnet maps using 12-year median concentration values, while the SC decided not to revise the current 6-year eutrophication time window due to the significant additional effort required. ICES also outlined planned outreach on the latest eutrophication products to OSPAR ICG Eutrophication and HELCOM EG Eutrophication groups, the planned follow-up with relevant contacts in other RSC groups, and provided an update on EEA indicator timelines.

**Task 7: Contribute to the implementation of the EU legislation and broader initiatives for open data, particularly on issues of standardisation, interoperability and availability of reporting data, including by non-EU organisations, when relevant**

From 2 to 4 February 2026, EMODnet Chemistry participated in the Floating Litter Monitoring international workshop in Cádiz, Spain. On 18 February 2026, it took part in the online workshop of the GPML Community of Practice (CoP) on Plastic Monitoring and Assessment Harmonization to discuss and finalise the ToR and workplan. From 2 to 6 March 2026, EMODnet Chemistry participated in EU Ocean Days 2026, and on 12 March 2026, it joined the online meeting dedicated to the Atlas of Ocean Microplastics: a Global distribution map of marine plastic litter.

On 16 and 30 March 2026, OGS, HCMR and ETT held internal meetings to make further progress in defining the minimum operational profile, based on input from OceanObs/passport and AMRIT.

#### Task 8: Monitor quality/performance and deal with user feedback

Since centralisation, access to the Chemistry narrative on the EMODnet Portal is monitored via Europa Analytics, and the EMODnet Secretariat provides quarterly statistics. Chemistry has developed an additional tool, Graylog, to monitor the viewing and downloading of EMODnet Chemistry data products from its providers. The Graylog widgets are configured to collect viewing and downloading statistics from AWI (for webODV), Maris (for CDI distribution layers), ULiege (for Ocean Browser), IFREMER Geoserver, HCMR Geoserver, and OGS (for DOI landing pages). The EMODnet Chemistry Helpdesk is also centralised: all user interactions are recorded by the EMODnet Secretariat Helpdesk and forwarded to the batches via JIRA tickets. Relevant JIRA tickets are answered immediately. During the reference period, three feedback items were received from data users, all of which have been resolved. The first was from a Portuguese NGO team, who requested information on marine litter maps. The second was from the Shell-volution Project team, who requested engagement in the project. The third was from the Remedies project team, who requested the ingestion of beach litter data and inclusion as EMODnet Chemistry data originators.

#### Task 9: Dedicate specific resources to the EMODnet Central Portal Task Force

The EMODnet Portal Task Force was launched at the 19th TWG meeting. EMODnet Chemistry confirmed its active support and emphasised the need to improve EMODnet Portal access functionalities for in situ data and data products. In particular, EMODnet Chemistry proposed agreeing on a set of metadata keywords to enhance the search function in the Product Catalogue and considering to develop a data catalogue with a dedicated search service next and in relation to the EMODnet Product Catalogue.

Status of the Milestones and Deliverables listed in the workplan

Milestone/Deliverable in numerical order	WP/ Task	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
D0.1 Quarterly concise progress reports	0	M3, M6, M9, M12, M15, M18, M21	Delivered (M3)	15/01/2026	
D0.2 Annual reports	0	M12, M24			
D0.3 Handover plan for service continuity	0	M24			
D0.4i Consortium Agreement with partners	0	M2 (November 2025)	Delivered	10/12/2025	
D0.5i Bilateral Agreements with subcontractors	0	M2 (November 2025)	Delivered	13/03/2026	
D0.6i Short minutes/action list of project meetings	0	M1, M6, M12, M18, M23	Delivered	24/11/2025 (M1 project full group meeting) 13/03/2026 (M6 SC meeting)	

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP/ Task	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
<i>D1.1i</i> Training activity for DCs with the support of online resources	1	M8			
<i>D1.2i</i> Data harvested for eutrophication, including rivers	1	M2 (November 2025), M14	M2 (15/12/2025)		
<i>D1.3i</i> Data harvested for contaminants	1	M2 (November 2025), M14	M2 (15/12/2025)		
<i>D1.4i</i> Data harvested for beach and seafloor	1	M7 (April 2026), M17			
<i>D1.5i</i> Data harvested for micro litter	1	M7 (April 2026), M17			
D2.1 Validated pan-European collections for eutrophication, including rivers	2	M7 (April 2026), M19			
D2.2 Validated collections for contaminants	2	M7 (April 2026), M19			
D2.3 Validated collections for beach and seafloor litter	2	M11, M21			
D2.4 Validated collections for micro litter	2	M11, M21			
D2.5 New maps for contaminants	2	M15			
D2.6 New DIVA maps for eutrophication, including focus near river mouths	2	M21			
D2.7 New maps for micro litter	2	M17			
D2.8 New maps for beach and seafloor litter	2	M17			
D3.1 Standard machine- to-machine services to core data products	3	M3	Delivered	December 2025	
D3.2 Dedicated machine-to-machine services for data collections	3	M18			
D4.1 Improved services for eutrophication	4	M21			
D4.2 Improved services for marine litter	4	M21			
D4.3 Improved services for contaminants	4	M21			

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP/ Task	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
D4.4 webODV data Explorer and Extractor tool	4	M21			
D5.1 Up-to-date news and use cases in the thematic section of the central portal	5	Continuously	delivered		
D5.2 Promotional material and text in the thematic section of the central portal	5	Continuously	delivered		
D6.1 Meetings of Board of MSFD Experts	6	M16 , M18, M22			
D7.1 International cooperation and interoperability	7	Continuously	delivered		
D8.1 Operate Help-desk via Jira tickets	8	Continuously	delivered		
D8.2 Monitoring data about visits and usage	8	Continuously	delivered		
D9.1 Short minutes/action list of Chemistry TWG meetings	9	Every 6 months	delayed		April/May 2026
D9.2 Contributions to the Central Portal Task Force	9	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.]

<b>A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT</b>				
<i>Priority issue / challenge</i>	<i>Status (Pending/ Resolved)</i>	<i>Action(s) taken/ remaining actions planned</i>	<i>Date due</i>	<i>Date resolved</i>
Metadata distribution information JIRA-1073 and JIRA-1223	Resolved	L24 vocabulary has been updated with the new terms: <a href="https://github.com/nvs-vocabs/L24/issues/3">https://github.com/nvs-vocabs/L24/issues/3</a> . Sextant will harvest the vocabulary and update the existing metadata	n.a.	23/02/2026
High - Geoserver < 2.27.1 Unauthenticated XXE via WMS GetMap (CVE-2025-58360) (EM-1217)	Resolved	HCMR solved the pending issues	n.a.	06/02/2026
webODV branding (EM-1175)	Pending	DG MARE will provide guidelines for using EMODnet branding on external services	n.a.	
Chemistry videos (EMODCOM-231)	Pending	A new video for webODV will be produced once the use of EMODnet branding on external services has been decided.	n.a.	
Review Data/product level description (EM-1196)	Pending	EMODnet Chemistry proposed some reviews via the indicated Github	19th TWG	
Vector time series layers do not allow to download different timesteps through the subset and download tool (EM-1110)	Pending	Awaiting feedback from the Secretariat	n.a.	

### **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
Updates on existing Chemistry layers -Data collections (by sea regions)>Eutrophication-(1233)	Resolved		n.a.	26/03/2026
Lack of consistency in the information displayed in the thumbnails of the product catalog regarding the organization (JIRA ticket 1232)	Pending	Chemistry will discuss internally if it makes sense to display the information on: the creator of the product, the point of contact and the distributor.		
Improvements in the map viewer (EM-1088 and related EM-1134)	EM-1088 Resolved, EM-1134 Pending	The issue with the number of decimals cannot be fixed by the CP	n.a.	31/12/2025
No possibility to change the color scale in the climatologies (EM- 743)	Pending	Awaiting technical development by the EMODnet Portal team.	n.a.	
Products download in the Map Viewer (EM-962)	Pending	Waiting for the CP team to discuss it and come back to Chemistry on this	n.a.	
New EMODnet Chemistry product (EM-1152)	Pending	Issues from the EMODnet Chemistry side have been solved	n.a.	
Chemistry - Web Services MetadataUrl and DataUrl fields (EM-84)	Resolved	ULiege solved the remaining problems	n.a.	13/11/2025 (partially solved by some data providers) 17/03/2026 (totally solved)

### 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
06/02/2026	Scientific paper	Garçon, V., Isensee, K., Sterling, J., Lange, N., Buttigieg, P. L., Atamanchuk, D., ... & Zhou, Y. (2026). Ocean oxygen data: how to measure, how to manage?. Environmental Research Letters, 21(3), 033003.		10.1088/1748-9326/ae3c37	yes
14 Mar 2026	Abstract of a EGU2026 poster	French, M. A., Samantha, B., Giorgetti, A., Hansen, H. M., Lipizer, M., Molina Jack, M. E., Moncoiffe, G., Osypchuk, A., and Vinci, M.: EMODnet Chemistry and FAIR principles; evaluating and updating vocabularies, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-19834, <a href="https://doi.org/10.5194/egusphere-egu26-19834">https://doi.org/10.5194/egusphere-egu26-19834</a> , 2026.		<a href="https://doi.org/10.5194/egusphere-egu26-19834">https://doi.org/10.5194/egusphere-egu26-19834</a>	yes
14 Mar 2026	Abstract of a EGU2026 poster	Reyes Suarez, N. C., Kooyman, R., Moncoiffe, G., Mieruch, S., Leroy, D., Giorgetti, A., Gatti, J., Iona, A. (., Racape, V., Fyrberg, L., French, M. A., Wessler, K., and Vernet, M.: Blue-Cloud 2026 workbenches for Essential Ocean Variables: advancing harmonization and big-data workflows for eutrophication in marine science., EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-20251, <a href="https://doi.org/10.5194/egusphere-egu26-20251">https://doi.org/10.5194/egusphere-egu26-20251</a> , 2026.		<a href="https://doi.org/10.5194/egusphere-egu26-20251">https://doi.org/10.5194/egusphere-egu26-20251</a>	yes

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
March 2026	Scientific paper	Sani, T., Campanelli, A., Marini, M., Goffredo, S., & Grilli, F. (2026). Long-term Changes in the Adriatic Sea (1971–2023): River Influence, Climate Impacts, and Biogeochemical Shifts in Coastal Bottom Waters. <i>Estuarine, Coastal and Shelf Science</i> , 109722.		<a href="https://doi.org/10.1016/j.ecss.2026.109722">https://doi.org/10.1016/j.ecss.2026.109722</a>	yes
2 March 2026	Scientific paper	Sanderson, Hans and Wenning, Richard and Tomasi, Theodore and Komorin, Viktor and Grafov, Andriy and Abduloieva, Oksana, AN APPROACH TO ENVIRONMENTAL DAMAGE ASSESSMENT OF MUNITIONS IN UKRAINE'S BLACK AND AZOV SEA TERRITORIAL WATERS. Available at SSRN: <a href="https://ssrn.com/abstract=6331723">https://ssrn.com/abstract=6331723</a> or <a href="http://dx.doi.org/10.2139/ssrn.6331723">http://dx.doi.org/10.2139/ssrn.6331723</a>		<a href="http://dx.doi.org/10.2139/ssrn.6331723">http://dx.doi.org/10.2139/ssrn.6331723</a>	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
12/02/2026	Preprint	Komorin, Viktor and Leposhkin, Oleksandr and Titiapkyn, Andrii and Dykhanov, Yurii and Miasnikova, Olena and Vyshnevskiy, Viktor and Oleinik, Yurii, War-related pollution in Black Sea coastal waters: hydrochemistry, priority pollutant profiles and shoreline oil backtracking. Available at SSRN: <a href="https://ssrn.com/abstract=6225281">https://ssrn.com/abstract=6225281</a> or <a href="http://dx.doi.org/10.2139/ssrn.6225281">http://dx.doi.org/10.2139/ssrn.6225281</a>		<a href="http://dx.doi.org/10.2139/ssrn.6225281">http://dx.doi.org/10.2139/ssrn.6225281</a>	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
13/02/2026	Guidelines	Lipizer M., Molina Jack M. E., Wesslander K., Fyrberg L., Tsompanou M., Iona A., Buga L., Sarbu G., Gatti J., Larsen M. M., Østrem A. K., Giorgetti A. 2026 Guidelines for eutrophication data aggregation, harmonisation and Quality Control. Version 3. Pp. 45, doi: 10.13120/8XM0-5M67		10.13120/8XM0-5M67	yes
13/02/2026	Guidelines	Molina Jack M.Eu., French M.A., Lipizer M., 2026 EMODnet Chemistry: Guidelines to merge profile and time series data types (eutrophication and contaminants) Version 2 Pp16, doi. 10.13120/4YB9-6470		10.13120/4YB9-6470	yes

*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	More than 16.000 new data sets have been entered. Also a few data sets were deactivated because of identified errors.
What is your opinion on the data coverage within EMODnet for your thematic? B) Usage of data in this quarter	CDI catalogue service CDI RSM shopping ledger service and personal requests	The data coverage is very good for all European seas and there is a steady increase for most regions The number of CDI downloads is considerably higher (+226%) than in the previous quarter.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products B) Usage of data products in this quarter	Sextant Product Catalogue Download Tracking service for data products	On 2 October 2025 a new phase started. The first new data products are scheduled for May 2026 This quarter, manual downloads indicate user interest in Acidity, Dissolved gases, Organometals, Pesticides, and Marine litter, while Silicates remain the most popular group, although they show a decline. Visualisations remain consistently very high only for Metals and Metalloids and Pesticides, while other groups show a significant decrease.
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 11 regular data providers

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
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 around 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 would 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. Annex: Other documentation attached

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