



**EMODnet**



European Marine  
Observation and  
Data Network

# **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 (13th)**

**Reporting Period: 01/10/2024 – 31/12/2024**



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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**

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, 17.428 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.

### **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**

In November 2024 a data harvest has been undertaken for seafloor litter data sets, divided over the MSFD regions which are also used for eutrophication, contaminants and beach litter harvest deliveries. Following the harvest, the data packages were delivered to the OGS as coordinator for the marine litter data collections. Both the beach and seafloor litter data collections were aggregated and validated at regional level and sent to Ifremer for maps generation on 27 November (beach litter) and 12 December (seafloor litter). Subsequently, the regionally aggregated, harmonised and validated data collections for beach and seafloor litter were described in the Sextant catalogue and published in the EMODnet Portal (as part of the EMODnet Products Catalogue and with direct links in the narrative).

In December 2024 two data harvests were carried out for eutrophication and contaminants respectively. These data packages were forwarded to the regional coordinators for updating the aggregated validated data collections of EMODnet Chemistry. The deliveries were accompanied by lists showing which datasets were new or had been updated since the previous collection round and which datasets were still the same as before. The latter helps the regional coordinators as it means that they do not have to repeat their validation and harmonisation activities for these "old" datasets.

The regional coordinators met regularly on 24 October and 26 November 2024 to discuss progress and agree on the common approach to product creation. A dedicated working group dealing with the data quality control protocol met on 14 November and 6 December 2024 to review and update the definition and limits for broad range check.

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

All EMODnet Chemistry data products are included in ULiege's Ocean Browser (for the eutrophication maps), in the HCMR Geoserver (for the contaminants maps) and in the 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, the beta version of the EMODnet Chemistry ERDDAP instance with the eutrophication aggregated datasets (<https://erddap.emodnet-chemistry.eu/erddap/index.html>) was made available to the Regional Coordinators for testing before publication in the EMODnet Portal. The next step will be to extend the service to marine litter and contaminants data collections and to develop a WMS service to display the stations on the EMODnet 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 Products Catalogue and the narrative in the EMODnet Portal. Use is made of machine-to-machine services from EMODnet Chemistry partners to the EMODnet 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 maintained by Ifremer was updated with the metadata records for the regional aggregated, harmonised and validated data collections for beach and seafloor litter.

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

During the reporting period, EMODnet Chemistry updated the content of its narrative section, in particular with the DOIs for the data collections of beach and seafloor litter contributing to the sections: Reports (2 new reports were published, namely the interim report for the Chemistry V renewal phase and the quarterly report Q32024), MoU (with information on the MoU signed in 2016 with the Black Sea Commission) and Guidelines (two guidelines were updated). Finally, 8 web news/newsletters were prepared for publication on the portal and included in the monthly newsletter.

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

During the reporting period, EMODnet Chemistry participated in the OSPAR MicroPlastic Expert Group (MPEG) on 5 December 2024 to present the management of microlitter data and the interaction with ICES, which is developing a microlitter data format for the submission of litter data to DOME. The aim is to avoid double reporting by exchanging the data submitted by the new Member States between EMODnet and ICES.

The webpage dedicated to the MSFD Board of experts, set up by the OGS for EMODnet Chemistry, 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 in line with the discussions and agreements that have emerged through participation in the MSFD working groups and technical groups (DIKE, Data, ML, Contaminants).

During the reporting period, OGS represented EMODnet Chemistry in the Technical Group on Marine Litter (TG ML) on 12 December 2024, in the TG ML meeting focusing on QA/QC for marine microlitter on 28 November 2024 and in the meeting to update the Joint List of Litter Categories on 22 October, 25 November, 4 and 18 December 2024.

**Task 8: Monitoring quality/performance and dealing 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 a new tool (Graylog) to monitor the viewing and downloading of EMODnet Chemistry data products from its providers. During the reporting period, the Graylog widgets were configured to collect viewing and downloading statistics from AWI (for webODV) in addition to 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.

**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),<br>M6 (03/04/2024),<br>M9 (03/07/2024),<br>M12 (03/10/2024),<br>M15 (03/01/2025),<br>M18 (03/04/2025),<br>M21 (03/04/2025) | Delivered<br>(M3 Q42023,<br>M6 Q12024,<br>M9 Q22024,<br>M12 Q32024,<br>M15 Q42024) | 15/01/2024,<br>15/04/2024<br>15/07/2024<br>15/10/2024<br>15/01/2025                            |  |
| D1.2 Annual Interim report                                       | WP1 | M13   | Delivered  | 03/11/2024   |  |
| 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),<br>M6 (03/04/2024),<br>M12 (03/10/2024),<br>M18 (03/04/2025),<br>M23 (03/09/2025)  | Delivered (M1,<br>M6, M12)   | 28/11/2023<br>(PFG meeting)<br>19/04/2024<br>(SC meeting)<br>23-24/09/2024<br>(PFG+SC meeting) |  |
| D1.6 Providing content to the central portal                     | WP1 | Continuously  | Delivered  |  |  |
| D2.2i Training activity for DC                                   | WP2 | M4<br>(03/02/2024)  | Delivered  | 30-31/01/2024  |  |
| D2.2i Data harvested for eutrophication, including rivers        | WP2 | M3<br>(03/01/2024),<br>M12<br>(03/10/2024)  | Delivered  | M3<br>15/02/2024,<br>M12<br>06/12/2024)  |  |
| D2.3i Data harvested for contaminants                            | WP2 | M4 (03/02/2024),<br>M14 (03/12/2024)  | Delivered  | (M4<br>28/03/2024,<br>M14<br>04/12/2024)   |  |
| D2.4i Data harvested for beach and seafloor                      | WP2 | M7, M17   | Delivered  | M7<br>26/09/2024<br>(beach litter)<br>26/11/2024<br>(seafloor litter)                          |  |
| D2.5i Data harvested for micro-litter                            | WP2 | M7, M17   | Delivered  | M7<br>25/06/2024   |  |
| D2.6i Data harvested for new litter types                        | WP2 | M16   |  |  |  |
| D2.7 Updates on marine litter guidelines                         | WP2 | M6<br>(03/04/2024)  | Delayed  | January 2024   | On 13 December 2024, we received a document with comments from the JRC that can be |

|  |     |              |                 |   |  |
|--|-----|--------------|-----------------|---|--|
|  |     |              |                 |   | incorporated. Their analysis has not yet been finalised.   |
| D3.1 Validated pan-European collections for eutrophication, including rivers                         | WP3 | M7, M19      | Delivered       | 28 June 2024 (M7)                                   |  |
| D3.2 Validated collections for contaminants  | WP3 | M7, M19      | Delivered       | 28 June 2024 (M7)                                   |  |
| D3.3 Validated collections for beach and seafloor litter   | WP3 | M11, M21     | Delivered (M11) | Beach litter 27/11/2024, seafloor litter 12/12/2024 |  |
| D3.4 Validated collections for micro-litter  | WP3 | M11, M21     | Delivered       | 12 September 2024 (M11)                             |  |
| 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 micro-litter   | 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) |
| D4.4 Improved services for eutrophication  | WP4 | M10          | Delivered       |   |  |
| 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 |           |  |  |
| 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<br>(Pending/<br>Resolved) | Action(s) taken/ remaining actions<br>planned   | Date due | Date resolved  |
| EMODnet Catalogue tags Chemistry: add review of Geonetwork interface (EM-533)        | Resolved                         | Attached the slides presented at the last TWG (march 2024) with the proposed catalogue improvements | n.a.     | 2 October 2024 |
| EMODnet lots to check if filter values are displayed in the preferred order (EM-957) | Pending Q32024                   | Final revision from EMODnet Chemistry TWG   | n.a.     |                |
| Chemistry Quality of Service Monitoring (EM-144)                                     | Resolved                         | Chemistry provided justification for the downtown event   |          | 18 Nov 2024    |

| B. Issues / challenges identified by the thematic assembly group itself            |                                  |  |          |               |
|--|----------------------------------|--|----------|---------------|
| Priority issue / challenge   | Status<br>(Pending/<br>Resolved) | Action(s) taken / remaining actions<br>planned   | Date due | Date resolved |
| No possibility to change the colour scale in the climatologies (EM-743, 2023-02-1) | Pending                          | Waiting for Geonetwork upgrade in 2025   |          |               |
| 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 |          |               |
|  |                                  |  |          |               |

### 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; ... |                |      |     |                           |
|  |   |                |      |     |                           |

| 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<br>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 (+2549%) than in the previous quarter.  |
| 2. Current status and coverage of total number of data products<br>A) Volume and coverage of available data products | Sextant Product Catalogue                             | Regional data collections for beach litter and seafloor litter were published for the first time. Previously, these data collections were compiled at European level   |
| B) Usage of data products in this quarter  | Download Tracking service for data products           | In this quarter 1) The statistics take also into account the WebODV explorer and extractor service; 2) Mainly for visualisations, take into account several logs generated repeatedly and automatically by the IPI 193.191.134.34, which belongs to vliz.be. <b>We need to understand how these logs are generated and if we should remove or keep them.</b> |
| 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 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. 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 Catalogue 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 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 viewing service.

**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.