



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n° 5 - Chemistry

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

Centralisation Phase

Quarterly Progress Report (6th)

Reporting Period: 01/01/2023 – 31/03/2023



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1. Highlights in this quarter

[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

The shutdown of the Chemistry portal did not affect the task. In fact, during the reporting period several new datasets were entered by EMODnet data centres and delivered by the Chemistry CDI Data Discovery and Access Service. This achievement was the result of a continuous email message with the partnership to urge data population with new and updated datasets. The organisation of the full group meeting on 9-10 March 2023 also contributed to mobilise the large partnership. Regional meetings have been planned with the data centres contributing to the different sea areas to discuss gaps in data delivery and to stress the importance of delivering up-to-date 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 sextant entries for the publication of the regional aggregated, validated and harmonised data collections for eutrophication and contaminants were finalised and a JIRA ticket was opened to plan their publication in the Central Portal.

As the generation of the DIVA interpolated maps has almost been completed, the workflow for their publication in the Central Portal viewer and related catalogue has been reviewed and agreed, identifying responsible parties for metadata generation (for both Sextant and DOI entries).

During the second week of March 2023, MSFD seafloor litter data related to the period 2012–2021 were harvested. Efforts were dedicated to identifying data located in country waters, before preparing the delivery to the JRC.

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

The EMODnet Chemistry products catalogue, based upon the SeaDataNet Sextant catalogue, has been edited in its metadata records following the needs of the Central Portal team (see JIRA ticket 653, 537 and 475). An operational OGC CSW service is maintained for the Sextant products catalogue, which is harvested by the Central Portal to include the metadata records of the data products in the CP Central Catalogue service.

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 allows discovery of and access to datasets, and is continued as an 'external' service reached by users through the narrative section and through the CDI map layers in the Map Viewer; 2) the Sextant product catalogue, which manages the metadata records

of the data products and which has its content harvested by the Central Portal for inclusion in the Catalogue Service, while the associated data products (eutrophication data collections and DIVA maps, and contaminants data collections) are shared with the Central Portal for direct downloading.

The Ocean Browser service continues to feed the Central Portal Map Viewer with eutrophication DIVA maps, while marine litter and contaminant maps are shared by means of OGC WMS-WFS services arranged through IFREMER and through the OGS Geoserver, respectively.

Finally, the webODV service for viewing, extracting and exploring the eutrophication and contaminant data collections continues as an 'external' service and is made accessible through the narrative.

Pending issues to improve the publishing and the functionality for users are reported as JIRA tickets.

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

During the reporting period, the EMODnet Chemistry portal was shut down and a regular reporting of news, publications, and guidelines to the Central Portal team is started, answering to the monthly requests for inputs and following the guidelines provided.

Task 6: Ensure the involvement of regional sea conventions:

In line with the ongoing dialogue with the EC JRC, EMODnet Chemistry continued to support the regional sea conventions in carrying out a centralised reporting strategy for marine litter, based on a data management plan that is well defined, agreed and methodologically substantiated. In the reporting period, the MSFD board of experts meeting (27 January, 10–11:30 CET) was held, to discuss, also together with representatives of the four regional sea conventions, the new eutrophication data products. In addition, we organised the stakeholder consultation as part of the EMODnet Chemistry annual meeting (10 March 2023), where we gathered important feedbacks from all participants with a live pool.

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

The EMODnet Chemistry network of NODCs is deeply involved in managing beach litter, seafloor litter and micro-litter data collected by Member States as part of MSFD monitoring activities and as solicited by the JRC through the MSFD TG ML and GES meetings. Considering the positive experience, JRC has proposed EMODnet Chemistry as the data portal to gather eutrophication and contaminants data, and a dialogue has been initiated to decide the appropriate way to report data numerosity (how many CDIs per country, MSFD sea area, year, and season). We are looking forward to an official data call in the appropriate stages, to support Member States to release their datasets.

Interactions with the Global Partnership on Marine Litter Digital Platform (GPML), the SDG Federated data system for Ocean Acidification and the Global Ocean Oxygen Database and Atlas (GO2DAT) to tune EMODnet Chemistry's contribution to the global systems also continued in this reporting period. EMODnet Chemistry is officially included in the GO2DAT Steering Committee.

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 activities through the EMODnet Chemistry portal (user forms); all user interactions are now gathered by the EMODnet secretariat and redirected to the portals via JIRA tickets. Pertinent JIRA tickets are promptly answered.

Number of users pointing to the EMODnet Chemistry data products (hosted in the Ocean Browser, in the IFREMER Geoserver, in the OGS Geoserver, or in DOI landing pages) are collected.

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

On the 23rd of January 2023, EMODnet Chemistry portal was switched off and all users are redirected to the unified EMODnet portal. To retain the internet traffic as much as possible, a detailed configuration of redirects ensured that any important content (narrative pages, subsections, reports, news, events, use cases etc.) on EMODnet Chemistry website was linked to the relevant section on the unified EMODnet portal.

Considering that not all information were fitting the Central Portal, a Google Drive folder was organised to share content among the partnership and maintain access to the 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	
D1.2 Annual Interim report	1	M12 (3 October 2022)	Delivered	M13 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	
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	2	M12, M24	Delivered	Continuous inclusion of new	

databases and available from the central portal				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	01/07/2022	
D2.4i Data harvested for contaminants	2	M9, M20	Delivered	10/10/2022	
D2.5i Data harvested for microlitter	2	M12 (3 October 2022)	Delivered	10/10/2022	
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	27/01/2023	
MS6 Dedicated maps for contaminants available from the central portal	3	M16	Delayed		At the last EMODnet Chemistry Steering Committee, it was agreed that HCMR would take over this task to help ISPRA. Expected deadline: June 2023
MS7 Pan-European maps for eutrophication available from central portal	3	M18			
MS8 Concentration maps of beach and seafloor litter available from the central portal	3	M20			
D3.1 Validated pan-European collections for eutrophication, including rivers	3	M12, M21	Delivered	12/10/2022	
D3.2 Validated collections for contaminants	3	M13, M22	Delivered	Dec 2022	
D3.3 Validated collections for beach and seafloor litter	3	M19			
D3.4 Validated collections for microlitter	3	M17	Delayed		
D3.5 High-resolution DIVA maps near river mouths	3	M16	Delivered	27/01/2023	
D3.6 New maps for contaminants	3	M15, M24	Delayed		At the last EMODnet Chemistry Steering Committee, it was agreed that HCMR would take over this

					task to help ISPRA. Expected deadline: June 2023
D3.7 New pan-European DIVA maps for eutrophication	3	M14, M23	Delivered (M14)	27/01/2023	
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) Delayed (Contaminants)	27/01/2021	June 2023 (contaminants), September 2023 (litter) 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 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 (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
Several JIRA tickets are open to prepare the centralisation	Done	Interaction with Chemistry network to rationalise the content (static and data products)		
Chemistry - EMODnet Catalogue Tags (EM-533)	Pending	The list has been posted by Chemistry. Now waiting for implementation by CP	n.a.	n.a.
Standardise the navigation menu on left hand side of page (EM-633)	Done			2023-01-12
Centralisation Checklist for review (EM-607)	Done	Review content		2023-03-29
NEW Chemistry page on CP (EM-506)	Pending	Content is continuously revised and enriched by EMODnet Chemistry with the help of CP team.	n.a.	
No possibility to change the color scale in the climatologies (EM-767)	Pending	Looking to a new feature that needs to be developed to allow users selecting the colour range with different max/min		

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, ...)	Pending	Ticket open		
EMODnet Catalogue Tags (EM-612)	Pending	Review the content of the products catalogue tags (topic, keywords, years, formats, ...)		

3. User feedback

[Provide a list of all user feedback received in the reporting period in chronological order. Indicate the type of the feedback received, a clear description of the query, and the actions undertaken to resolve the issue (e.g. update of metadata, fixing a particular issue with the map viewer). Indicate the status of the query, and if not provide an explanation why. List any feedback you received on the portal that can be used to build EMODnet use cases.]

Overview of user feedback and/or requests received in this quarter							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query (Resolved/Pending)	Measures taken to resolve the query	Status: if not (yet) resolved/ pending, explain reason why and expected timeline
20/01/2023	CNR-ISMAR	Information request to submit marine litter data	email	3 hours	Resolved	OGS provided the information via email	
23/01/2023	IFREMER	Clarification request on the template for floating microlitter data	email	5 minutes	Resolved	OGS clarified via email	
27/01/2023	MSFD experts on eutrophication	Questions on: algal blooms, thresholds, accessibility of data, real bottom oxygen values, confidence (masking), use of satellite modelled data (CMEMS)	Meeting with MSFD experts on eutrophication	Prompt feedback during the meeting about minor request (accessibility of data, real bottom oxygen values, confidence (masking))	Resolved (minor request) Pending (major request e.g. use of modelled data)	EMODnet Chemistry organise regular meetings with the MSFD experts on eutrophication	

January 2023	EC JRC	Request of data collections of marine litter	email		Resolved	OGS extracted the data and tagged surveys as requested	
06/03/2023	Researcher of an unspecified institute	Help request on EMODnet Chemistry maps of oxygen	Help desk Jira	6 hours	Resolved	OGS asked Uliege for support and the problem was solved within a few days by email	
10/03/2023	EC JRC	Request of harmonised and validated data for MSFD Descriptor 8 (contaminants), e.g. related to biological impact and oil spills, MSFD Descriptor 5 eutrophication) and 10 (other types of marine litter data)	meetings (e.g. Chemistry stakeholder consultation on 10 March) and email exchanges	Prompt positive feedback through meetings (also on 10 March 2023 at the Stakeholder consultation) and email exchanges	pending	Increased investment in EMODnet Chemistry resources to meet the new EC JRC's requests e.g. a data inventories have been produced, on 10 March 2023 this request was discussed at the Chemistry stakeholder consultation, regular email exchanges are maintained as well as participation in meetings of MSFD TWGs is guaranteed	This is a vast and complex request that will require a long-term commitment
10/03/2023	BSC	Need assistance from EMODnet with data to feed BSC SoE report	Chemistry stakeholder	Prompt positive feedback during the	pending	As done for the past SoE report, EMODnet	This is a vast and complex request that

		and revision of annual reporting templates	stakeholder consultation	stakeholder consultation on 10 March 2023		Chemistry will dedicate resources to meet this request in due time	will require a long-term commitment
10/03/2023	ICES WG on ML	Request for further support to revise the marine litter data flow to DOME, the ICES environment DB and simplify the workflow from DOME to EMODnet Chemistry specifically for data of microlitter in water and sediment	meetings (e.g. Chemistry stakeholder consultation on 10 March) and email exchanges	Prompt positive feedback through meetings (also on 10 March 2023 at the Stakeholder consultation) and email exchanges	pending	EMODnet Chemistry is dedicating resources to meet this request e.g. participating in meetings of the ICES WG on marine litter, via email exchanges with the WG, and on 10 March 2023 this request and first results were discussed during the Chemistry stakeholder consultation	This is a vast and complex request that will require a long-term commitment
10/03/2023	PANGAEA	Interest in sharing data with EMODnet Chemistry and solving the technical problems that currently exist in the near future.	Chemistry stakeholder consultation	Prompt positive feedback during the stakeholder consultation on 10 March 2023	pending	On 10 March at the EMODnet Chemistry Steering Committee meeting this follow up action was defined: "MARIS will organise a technical meeting with PANGAEA by the end of phase 5 to address	This is a vast and complex request that will require a long-term commitment

						the existing problems”	
10/03/2023	EEA	Request further support from EMODnet Chemistry to meet the requirements of the Zero Pollution Agenda to reduce plastic pollution.	Chemistry stakeholder consultation	Prompt positive feedback during the stakeholder consultation on 10 March 2023	pending	EMODnet Chemistry will dedicate resources to meet this request	This is a vast and complex request that will require a long-term commitment
10/03/2023	Copernicus Marine Service	Request to continue the joint work on data management and FAIRness, especially in coastal areas through the MIC WG	Chemistry stakeholder consultation	Prompt positive feedback during the stakeholder consultation on 10 March 2023	pending	Participation in Marine In situ Collaboration (MIC) Technical Working Group with EMODnet Ingestion, Physics, Chemistry, Copernicus Marine Service In Situ TAC, EuroGOOS, SeaDataNet	This is a vast and complex request that will require a long-term commitment

4. Meetings/events held/attended & planned

[List organisational meetings/events held/participated (incl. presentations, lectures, trainings, demonstrations, workshops, etc.) since the last quarterly report and planned in the future. Please add a short description on the meeting as well as the nature and volume of the audience.

When listing a meeting, please indicate whether it was an internal (i.e. within your partnership/lot) or external meeting (i.e. outside your partnership/lot).]

A. Meetings/events organised and attended in the quarter					
Date	Location	Type event (internal or external meeting; training/workshop)	Was a presentation given? (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
13/01/2023		Internal meeting	Yes (QC procedures)	O	EMODnet Chemistry data products: contaminants & eutrophication Participants: OGS, AWI, Uliege, SMHI, IMR, NIMRD, AU-DCE, HCMR, IFREMER, ICES Discussed the progress made in the creation of maps for contaminants and eutrophication
17-20/01/2023	Copenhagen (Denmark)	Workshop	Yes (EMODnet Chemistry format and guidelines for microlitter data)	A	ICES Workshop on the revision of the DOME litter data format (WKLIDA) Participants: OGS, ILVO, RBINS, ICES Discussed the needs and limitations of the present litter data and metadata reporting to the ICES Environmental Database (DOME) related to the community needs and to the EMODnet standards.
18/01/2023	online	Internal meeting		A	K.O. Meeting on updating the EMODnet portal content

					Participants: EMODnet Thematic coordinators EMODnet Secretariat explained the documentation that they had prepared to manage static content, news, use cases, reports and new products after the centralisation.
23/01/2023	online	External meeting	No	A	UNESCO Working Group on Metadata for ocean acidification data. Participants: representatives of IOC/UNESCO, NOC_BODC, OGS, ICOS, SOCAT, NOAA Regular meetings with UNESCO for SDG 14.3.1. to discuss metadata for ocean acidification data. IOC-UNESCO, with support from GOA-ON (Global Ocean Acidification Observing Network), reports on ocean acidification for the Global Climate Indicators and the yearly Statement on the State of the Global climate.
26/01/2023	online	External meeting	No	A	EMODnet Sea Basin CheckPoint Participants: + 50 participants, bringing together EMODnet Sea-basin Checkpoint Coordinators, partners and expert panel members, EMODnet thematic and data ingestion experts, EMODnet associated partners and wider invited experts. Discussed the added value and benefits of the 2013-2018 EMODnet Sea-basin Checkpoint exercises.
26/01/2023	online	External meeting	No	A	UNESCO Working Group on Vocabulary for ocean acidification data Participants: representatives of IOC/UNESCO, NOC-BODC, OGS, ICOS, SOCAT, NOAA Regular meetings with UNESCO for SDG 14.3.1. to discuss vocabulary for ocean acidification data. IOC-UNESCO,

					with support from GOA-ON (Global Ocean Acidification Observing Network), reports on ocean acidification for the Global Climate Indicators and the yearly Statement on the State of the Global climate.
27/01/2023	online	External meeting	Yes (8)	O	MSFD board of MSFD experts on Eutrophication Participants: 31 participants from around Europe. Presented the principles that are followed on the quality control of datasets and the subsequent QC of the products for eutrophication derived from the collection of regional datasets. Followed by a series of short presentations from each regional product.
06/02/2023	online	Internal meeting	Si (Methodology for data QA/QC and DIVA maps products)	O	EMODnet Chemistry data products: Eutrophication and Contaminants Participants: OGS, AWI, Uliege, SMHI, IMR, NIMRD, AU-DCE, HCMR, IFREMER, ICES Discussed the progress made in the creation of maps for contaminants and eutrophication
7-8/02/2023	online	Internal meeting	No	A	EMODnet Open Sea Lab 3.0 Hackathon: mentors meeting Participants: lead mentors of the OSL 3.0. Coach/mentors from EMODnet Chemistry: ETT, OGS, AWI, Uliege, MARIS, ICES
15/02/2023	online	External meeting	No	A	TGML internal meeting. Participants: 13 Further discussion on the development of the methodology for the calculation of baselines and thresholds of seafloor litter
16/02/2023	online	Webinar	Yes (4 minutes intervention)	A	EMODnet Public Webinar: "EMODnet Centralisation: One Ocean, One EMODnet"

					<p>Participants: fully open and public, attracting EMODnet's international user community and a broad range of people, including wider stakeholders who are less aware of EMODnet</p> <p>Shown how Centralisation has been achieved and why the unification of EMODnet services into one Portal is an advantage for users.</p>
20/02/2023	online	Internal meeting	No	O	<p>Reviewing vocabularies for data of contaminants and eutrophication</p> <p>Participants: OGS, ICES, NOC-BODC</p> <p>Discussed how to improve grouping P01-P02-P36</p>
23/02/2023	online	External meeting	No	A	<p>UNESCO Working Group on Vocabulary for ocean acidification data</p> <p>Participants: representatives of IOC/UNESCO, NOC-BODC, OGS, ICOS, SOCAT, NOAA</p> <p>Regular meetings with UNESCO for SDG 14.3.1. to discuss vocabulary for ocean acidification data.</p>
27/02/2023	online	External meeting	No	A	<p>UNESCO Working Group on Metadata for ocean acidification data</p> <p>Participants: representatives of IOC/UNESCO, NOC-BODC, OGS, ICOS, SOCAT, NOAA</p> <p>Regular meetings with UNESCO for SDG 14.3.1. to discuss metadata for ocean acidification data.</p>
02/03/2023	online	Internal meeting	No	O	<p>EMODnet Chemistry contaminants data products</p> <p>Participants: OGS, AWI, Uliege, SMHI, IMR, NIMRD, AU-DCE, HCMR, IFREMER, ICES</p> <p>Discussed the progress made in the creation of maps for contaminants</p>

03/03/2023	online	External meeting	No	A	International Expert Meeting on Marine Plastic Litter Monitoring Data Sharing Project, MOEJ Participants: members of the G20 International Experts on Marine Plastic Litter Monitoring Data Sharing Project Participants: circa 45 Discussions on the different needs and features for the shared microlitter database that MOEJ is developing
21/03/2023	online	External meeting	No	A	TGML internal meeting. Participants: circa 11 Final discussions for the finalisation of the microlitter chapter of the TGML guidance on Marine litter
23/03/2023	online	External meeting	No	A	Discussion on MOEJ analysis of GPML Data Harmonization Matrix Participants: 7 Discussion around the Discussion on MOEJ analysis of GPML Data Harmonization Matrix. Contributions from NOAA and EMODnet for the refining of GPML Data Harmonization Matrix.
27-28/03/2023	Online	competition	No	O	EMODnet Open Sea Lab 3.0 Hackathon Participants: 500 registered participants from 83 countries worldwide Brought together a wide audience to harness open-source, marine data offered by EMODnet to develop solutions to Ocean challenges.
09/03/2023	Trieste, online	Internal meeting	Yes (several presentations per each WP)	O	EMODnet Chemistry Project Full Group meeting Participants: full EMODnet Chemistry partnership including the board of advisors

					Illustrated the main achievements of the current phase and discussed the way forward
10/03/2023	Trieste, online	Workshop	Yes (one by each stakeholder)	O	EMODnet Chemistry Stakeholder consultation Participants: full EMODnet Chemistry partnership (44 members) including the board of advisors, EEA, BSC, HELCOM, EC JRC, PANGAEA, Copernicus Marine Service, ICES WG on marine litter, DG MARE, EMODnet Secretariat, EMODnet Sea bed habitats, EuroGOOS. Obtained feedback on stakeholders' satisfaction and identified new needs and gaps.
10/03/2023	Trieste	Internal meeting	Yes (main topics to be discussed per each WP and future developments)	O	EMODnet Chemistry Steering Committee Participants: EMODnet Chemistry partners (16 and subcontractors (2) Discussed the follow-up to the PFG meeting and stakeholder consultation, set out the actions to be taken to meet the deadlines of the work programme for the current phase, and drafted a long-term strategy.
17/03/2023	Trieste	Training	Yes (From Good Data ... To Good Decisions. From Data to Knowledge for Sustainable Blue Growth)	A	Advanced Master in Sustainable Blue Economy organised by OGS and University of Trieste Participants: 21, mainly from countries along the southern coast of the Mediterranean Sea The importance of EMODnet for building scientifically sound knowledge was well illustrated
17/03/2023	online	External meeting	Yes	O (by CEDRE)	The annual webinar (online) of the operators of the French beach litter monitoring programme t Participants: 30 present the results of beach litter monitoring on the French coastline in 2022 and to indicate to the operators

					the destination of the data they produced, especially the transmission to EMODnet Chemistry.
21/03/2023	Online UNESCO Headquarters, Paris, France	conference	Yes (Tackling marine pollution in the Mediterranean Sea: the needs for harmonised multidisciplinary data)	A	Second International Ocean Data Conference (IODC-II) Participants: 349 from all over the world The IODC I in 2022 concluded with new commitments and recommendations on achieving a “global ocean digital ecosystem”. To this purpose, the IODC-II reported on the problems faced, solutions found, lessons learned and challenges identified.
22-24/03/2023	UNESCO Headquarters, Paris, France	External meeting	No	A	27th Session of the IODE Committee Participants: 112 administrative arrangements Report on the past inter-sessional period (2021-2022), IODE capacity development, re-development of the iode web site, financial resources 2023-2025, proposed work plan for the next inter-sessional period (2023-2025), date and place of the next session (iode-xxviii, 2025)
31/03/2023	online	Internal meeting	No	O	Meeting with EMODnet Chemistry regional coordinators on data products Participants: OGS, AWI, Uliege, SMHI, IMR, NIMRD, AU-DCE, HCMR, IFREMER, ICES Discussed the progress made in the creation of maps for contaminants and eutrophication
SUM				O	Total # of meetings organised = 11
SUM				A	Total # of meetings attended = 16

B. Meetings/events planned in the future				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
03/04/2023	Lessay (France)	Training	O (by CEDRE)	Three operators, i.e. 8 people, were trained to monitor beach litter on the 3rd of April, in Lessay (France). Beyond the practical aspects of sampling and identifying beach litter, this training also presented the political framework in which the action is carried out. The data cycle is an aspect that is particularly addressed during this training. Therefore, we discuss the different databases that are fed by the monitoring data, including the EMODnet Chemistry database.
03/04/2023	online	Internal meeting	O	EMODnet Chemistry Regional meetings Check progress in the second data population with all the network of data providers and NODCs.
4-5/04/2023	Hybrid	Internal meeting	A	EMODnet TWG
17-21/04/2023	Bergen, Norway	Conference	A	Climate Conference/Session19: Ocean Acidification the International Symposium on Effects of Climate Change on the World's Oceans (by OGS) EMODnet Chemistry presents its work on ocean acidification data
(TBD in April 2023)	online	External meeting	A	Meeting with DG Mare to discuss main achievement of the current phase and the way forward
24-25/05/2023	Brest, France	Conference	A	Hackathon winners will be featured at the European Maritime Day 2023 Promote EMODnet data, products and services
24-25/05/2023	Brest, France	Conference	A	European Maritime Day 2023 Europe's maritime community discuss and outline joint action on maritime affairs and sustainable blue economy.

26-27/05/2023	Brest, France online	Internal meeting	A	EMODnet Steering Committee
24/5 – 8/6	Trieste	Conference	O	Event entitled “Maredirefare” in Trieste
26/06/2023	Genova	Conference	A	Ocean Race 2023, Genova the grand finale 2022-23 Promote EMODnet Chemistry
June 2023	online	External meeting	O	Meeting with the board of MSFD experts on contaminants Illustrate EMODnet Chemistry products and get feedback from the experts
7-9/06/ 2023	Horta, Azores	Meeting	A	Annual ICES working group meeting on Marine Litters. Outcomes: ICES DOME litter data format agreement with alignment to EMODnet micro litter formats.
September 2023	online	External meeting	O	Meeting with the board of MSFD experts on marine litter Illustrate EMODnet Chemistry products and get feedback from the experts
TBD (September 2023)	Batumi (Georgia)	Conference	O	International conference on the topic "Environment and Man: Challenges and Opportunities in the 21st Century" Promote EMODnet Chemistry
11-14/09/2023	Bilbao (Spain)	Conference	A	ICES Annual Science Conference 2023 Illustrate how EMODnet Chemistry cooperates with ICES
22-25 September	Trieste	Conference	O	Trieste next 2023 Promote EMODnet Chemistry
29 Sept 2023	Trieste	Conference	O	European Researchers’ night Promote EMODnet Chemistry

Sept/Oct 2023	Japan	workshop	A	Organised by MOEJ to involve all the relevant global actors/stakeholders (IMDOS, G20, GPML, EMODnet, TGML representatives, ...)
October	Online	Webinar	O	Training course on EMODnet Chemistry data management with a focus on QC to people in charge of data population Update the consolidated information and inform about upgrades
28-29/11/2023		Conference	A	EMODnet Jamboree
28-29/11/2023		Internal meeting	O	Cross thematic meeting with all EMODnet lots as part of the EMODnet Jamboree
28-29/11/2023		Internal meeting	O	EMODnet Chemistry Steering Committee meeting Analyse the lessons learned from the phase just completed and plan the medium and long-term actions needed for the next phase according to the newly agreed work plan
30/11/2023			A	EMODnet Open Conference 2023

5. Communication assets

[List all the relevant communication and dissemination products and assets you have developed in the reporting period (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]

A. Communication products developed				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event (if applicable)
January 23	EMODnet newsletter	EMODnet Chemistry 2022 highlights expanded quantity and quality of marine data: a great value for marine strategies and more	Provide monthly information on EMODnet Chemistry	
January 23	EMODnet web news	EMODnet Chemistry 2022 highlights expanded quantity and quality of marine data: a great value for marine strategies and more	Provide monthly information on EMODnet Chemistry	
January 23	EMODnet newsletter	The new Memorandum of Understanding between EMODnet Chemistry and the United Nations Environment Programme	Provide monthly information on EMODnet Chemistry	
January 23	EMODnet web news	The new Memorandum of Understanding between EMODnet Chemistry and the United Nations Environment Programme	Provide monthly information on EMODnet Chemistry	
January 23	EMODnet newsletter	EMODnet Chemistry and ICES work together to optimise micro-litter formats and data flow	Provide monthly information on EMODnet Chemistry	
January 23	EMODnet web news	EMODnet Chemistry and ICES work together to optimise micro-litter formats and data flow	Provide monthly information on EMODnet Chemistry	
11/01/2023	Web content on parks.it	Inquinamento nei sedimenti marini. Come migliorare la qualità dei dati (Pollution in		

		marine sediments. How to improve data quality)		
17/01/2023	Web news on NODC-OGS web site	EMODnet: join the Open Sea Lab 3.0 Hackathon!	Promote EMODnet data, products and services	
18-20/01/2023	presentation	EMODnet Chemistry format and guidelines for microlitter data (ICES Workshop on the revision of the DOME litter data format)	Share EMODnet Chemistry expertise on management of microlitter data with ICES to optimise the data flow	
24/01/2023	Web content on ohga.it	Marina Lipizer (OGS) tells Ohga The new study on marine pollution: "In the sea the number of pollutants continues to grow"		
26/01/2023	Web news on NODC-OGS web site	EMODnet: A one-stop shop portal for marine data launched	Promote EMODnet centralisation	
27/01/2023	7 presentations	EMODnet Chemistry DIVA maps (Meeting with the board of MSFD experts on eutrophication)	Present DIVA maps to the board of MSFD experts on eutrophication and collect feedback	
27/01/2023	Web news on OGS web site	The European Marine Observation and Data Network (EMODnet) launches its unified marine data service		
February 2023	Discussion paper and call for action	NODC-OGS marine scientists and data managers were interviewed together with other international experts to produce the paper Zero-pollution discussion paper	Raise awareness of marine pollution and calling for action against it	
February	EMODnet newsletter	EMODnet Chemistry supports Back to Blue's initiative	Provide monthly information on EMODnet Chemistry	
February	EMODnet web news	EMODnet Chemistry supports Back to Blue's initiative	Provide monthly information on	

			EMODnet Chemistry	
Feb 2023	web content	Compilation of Chemistry – Ingestion use cases (by RBINS)	Increase visibility of activities	
March 23	EMODnet newsletter	EMODnet Chemistry Stakeholder Consultation		
March 23	EMODnet web news	EMODnet Chemistry Stakeholder Consultation		
March 23	EMODnet newsletter	Advanced Master in Sustainable Blue Economy: lecture on EMODnet		
March 23	EMODnet web news	Advanced Master in Sustainable Blue Economy: lecture on EMODnet		
March 23	EMODnet newsletter	EMODnet at the UNESCO Second International Ocean Data Conference		
March 23	EMODnet web news	EMODnet at the UNESCO Second International Ocean Data Conference		
09/03/2023	17 presentations	EMODnet Chemistry main achievements and current activities per WP	Take stock of the current status of the project and discuss the necessary measures to complete the current phase and the next steps	EMODnet Chemistry Project Full Group meeting
10/03/2023	5 presentations	The stakeholders explain their current satisfaction with working with EMODnet Chemistry and their further needs.	Get feedback from the main data users	EMODnet Chemistry Stakeholder consultation
11/03/2023	Web news on OGS web site	EMODnet Chemistry Stakeholder Consultation in Trieste		
13/03/2023	Web news on NODC-OGS web site	EMODnet Chemistry Stakeholder Consultation in Trieste, 10 March 2023	Inform on follow up to the consultation and its importance to improve	
17/03/2023	presentation	From Good Data ... To Good Decisions. From Data to Knowledge for Sustainable Blue Growth	Illustrate EMODnet Chemistry activities to	Advanced Master in Sustainable Blue Economy

			contribute to provide high quality marine data	
21/03/2023	presentation	Tackling marine pollution in the Mediterranean Sea: the needs for harmonised multidisciplinary data	Illustrate EMODnet Chemistry activities to contribute to face marine pollution in the Mediterranean.	International Ocean Data Conference (IODE/IOC)
20 March 2023	Web news on NODC-OGS web site	NODC at the Advanced Master in Sustainable Blue Economy	Inform on EMODnet Chemistry participation in educational initiatives	
29/03/2023	Web news on NODC-OGS web site	Open Sea Lab Hackathon: NODC among the lead mentors	Inform on EMODnet Chemistry participation in promotional events	
9 Jan 23	Tweet	🌊🌍🗺️ #MarineLitter data from 8 research surveys, monitoring & cleaning initiatives of NGO's are accessible via #EMODnet #Chemistry Case 111 Marine litter #data shared with @EMODnet #Ingestion are fit for #MSFD reporting 111 @OGS @TalTech @Iheilv @tudavtudav		@MarianneBMDC Impressions: 298
10 Jan 23	Tweet	🇷🇴 Success Case 12 🇷🇴 In 8 years, the Romanian association #MareNostrum became the most important provider of #BeachLitter data in the #BlackSea. The #data follows #EUstandards and feeds the European Marine Litter #DataBase 111 @NIMRD_ro @EMODnet #Ingestion #PlasticFree		@MarianneBMDC Impressions: 166
17/01	Tweet on @nodcogs	Open Sea Lab 3.0 Hackathon!	Visualisations 53 Interactions 6	
26/01	Tweet on @nodcogs	One EMODnet, One Portal.	Visualisations 147	

			Interactions 7	
27/01/2023	reTweet @nodcogs	on	A recent #EMODnet expert w/shop explored the #SeaBasinCheckpoints added value, current status of #MarineDataAdequacy uptake of methods by #EOOS #UNOceanDecade & more	
30/01/2023	reTweet @nodcogs	on	#EMODnet reaches a landmark achievement, as it launches its fully centralised #marinedata services, integrating all its thematics into one Central Portal @EU_MARE	
2 Feb. 23	Tweet		One Ocean, One EMODnet 👁️ Have a look at how your chemical 🧪 and marine litter data 🗑️ work @EMODnet #Chemistry 🌐 🧠 EMODnet Chemistry, a value for marine strategies https://youtube.com/watch?v=4NobECD4k18 @OGS @SeaDataNet @EU_MARE #EMODnet #CentralPortal #MarineData #FAIRdata #BlueSociety	Increase visibility of Chemistry data on the Central portal @MarianneBMDC Impressions: 542 Engagement: 48 Reshare: 7 Like: 11
10/03/2023	Tweet @nodcogs	on	EMODNET CHEMISTRY Meeting Trieste	Visualisations 77 Interactions 6
13/03/2023	Tweet @nodcogs	on	@EMODnet Chemistry Stakeholder Consultation	Visualisations 39 Interactions 4
21/03/2023	reTweet @nodcogs	on	Day 1 #IODC2 #EMODnet 's J-B Calewaert Chaired a session on #FAIR #MarineData & spoke at the launch of the #UNOceanDecade Data & Information Strategy. Today, Day 2: 11:00 CET EMODnet showcases its latest services!	
21/03/2023	reTweet @nodcogs	on	The #OneOceanOneEMODnet Portal, completed January 2023, is a game-changer for users.	
24/03(2023	Tweet @nodcogs	on	Advanced Master in Sustainable Blue Economy	Visualisations 28 Interactions 1
27/03/2023	Tweet @nodcogs	on	Second International Ocean Data Conference (IODC-II) of UNESCO.	Visualisations 111 Interactions 4

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
Apr/May/June/2023	EMODnet monthly newsletter		Promote EMODnet Chemistry
Apr/May/June/2023	EMODnet web news		Promote EMODnet Chemistry
Apr/May/June/2023	Web news on OGS web site		Promote EMODnet Chemistry
Apr/May/June/2023	Web news on NODC-OGS web site		Promote EMODnet Chemistry
Apr/May/June/2023	Tweets on @nodcogs		Promote EMODnet Chemistry
17-21/04/2023	Presentation	EMODnet Chemistry presents its work on ocean acidification data at the Climate Conference/Session19: Ocean Acidification the International Symposium on Effects of Climate Change on the World's Oceans (by OGS)	Promote EMODnet Chemistry
24/5 – 8/6	Presentation	Microplastics without borders at the event entitled “ <u>Maredirefare</u> ” in Trieste	Promote EMODnet Chemistry
26/06/2023	Presentation	Present EMODnet Chemistry at the Ocean Race 2023, Genova the grand finale 2022-23	Promote EMODnet Chemistry
June 2023	Presentations	Illustrate EMODnet Chemistry products for contaminants at the meeting with the board of MSFD experts on contaminants	Get feedback from the experts
September 2023	Presentations	Illustrate EMODnet Chemistry products for marine litter at the meeting with the board of MSFD experts on ML	Get feedback from the experts
TBD (September 2023)	Presentation	Illustrate EMODnet Chemistry at the conference "Environment and Man: Challenges and Opportunities in the 21st Century" in Batumi, Georgia	Promote EMODnet Chemistry
11-14/09/2023	Presentation	Illustrate how EMODnet Chemistry cooperates with ICES at the ICES Annual Science Conference 2023	
22-25 September	Presentation	Trieste next 2023, Science Festival	Raise awareness of the importance of sound data in identifying and addressing environmental problems

29 Sept 2023	Presentation	European Researchers' night	Raise awareness of the importance of sound data in identifying and addressing environmental problems
October	presentation	Training course on EMODnet Chemistry data management with a focus on QC to people in charge of data population	Update the consolidated information and inform about upgrades
28-29/11/2023	presentations	Cross thematic meeting with all EMODnet lots as part of the EMODnet Jamboree	Illustrate EMODnet Chemistry activity and potential synergies with other EMODnet lots
28-29/11/2023	presentations	EMODnet Chemistry Steering Committee meeting as part of the EMODnet Jamboree	Analyse the lessons learned from the phase just completed and plan the medium and long-term actions needed for the next phase according to the newly agreed work plan
30/11/2023	presentation	EMODnet Open Conference 2023	Promote EMODnet Chemistry

[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 e.g. paper; conference proceedings; book chapter; ...	Full reference	ISBN	DOI	Is it open access? Yes/No

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

6. Monitoring indicators

[Refer to the standardised monitoring tool, i.e. Matomo/ 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 Matomo/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 were reformulated to follow the latest EEA regional polygons; it was a considerable effort but is now in place.	The data coverage is very good for all sea regions and there is also a steady increase per region
B) Data usage in this quarter	CDI RSM shopping ledger service and personal requests	For CDIs, this quarter the number of requests for CDI data files has decreased considerably. Number of users went from 12 to 5.
2. Current status and coverage of the total number of data products A) Volume and coverage of available data products	Central Portal Product Catalogue	With the rationalisation requested by the centralisation, the number of layers is significantly reduced
B) Usage of data products in this quarter	Matomo - Piwik	With the centralisation we are not able to report volumes of data downloaded. Also, we cannot distinguish between manual downloads and map visualisations. Number of downloads from the ERDDAP at the Central Portal is not monitored.

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.
4) Online 'Web' interfaces to access or view data	N.A.	No changes
5.1) Daily number of page views of EMODnet Thematic entry page	Europa Analytics	Chemistry
5.2) Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	Chemistry

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

7. Annex: Other documentation attached

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