



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n°5 – EMODnet Chemistry

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Start date of the project: 02/10/2023 (24 months)

Centralisation Phase

Work Package 5:

MSFD Board of Experts: Contaminants

04 February 2025



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MSFD Board of Experts: Contaminants

1 Introduction and summary

This board meeting walked-through the process for producing the data products, including QA steps used for the 2024 updates of the **contaminants** datasets and map products. Marine pollutants are a pervasive and heterogenous group of chemical substances within the marine environment, and monitoring programmes across Europe routinely monitor and collect data on the abundance of contaminants in biota, water and sediment.

The MSFD Board of experts comprises over 50 participants from around 28 international research institutions, non-governmental organisations and regional, national and European government agencies. Each session has a thematic focus, this one on marine contaminants, and draws on the pool of experts in data management, research and governmental agency role to actively give input to ensure that EMODnet Chemistry is tuning its data management and data products to the needs of the user and to keep the experts informed on developments. To become a member, or to receive further information, please send an email with the subject 'Chemistry MSFD Board of experts' to info@emodnet-chemistry.eu.

The meeting was held online, with a total of 20 participants from around Europe. EMODnet comprises a network of more than 120 organisations. For EMODnet Chemistry, this is the first in a series of 3 thematic MSFD board meetings, with marine litter and eutrophication following in March and June respectively. The latest regional contaminant maps were presented and discussed for the 6 marine regions of the MSFD.

2 Summary of EMODnet Chemistry (Alessandra Giorgetti)

The European Marine Observation and Data Network was initiated by DG MARE in 2009 and is currently developing a vision to 2035. It is financed by the European Union. EMODnet provides easy and free access to marine data, metadata, and data products from 7 different domains. EMODnet is implemented by a network of over 120 organisations working with European marine data infrastructures. Since January 2023, EMODnet has a single point of access for all 7 domains via the central portal. The EMODnet Chemistry network includes 42 organisations such as national oceanographic data centres, environmental monitoring agencies, and expert institutes. The network focuses on the collection, aggregation, standardisation, and quality control of EU marine water quality data relevant to EU Marine Directives and global climate change. EMODnet delivers standardised, harmonised, and validated data collections and reliable data products.

EMODnet Chemistry offers access to data and data products through a data discovery and access service, regional data collections, webODV Data Explorer and Extractor, and a Map Viewer service. The parameters examined by EMODnet include marine litter, ocean acidification, contaminants, and nutrients. EMODnet publishes regional and global products and is currently on phase V which completes in September 2025.

EMODnet Chemistry Timeline for publication of regional and global products

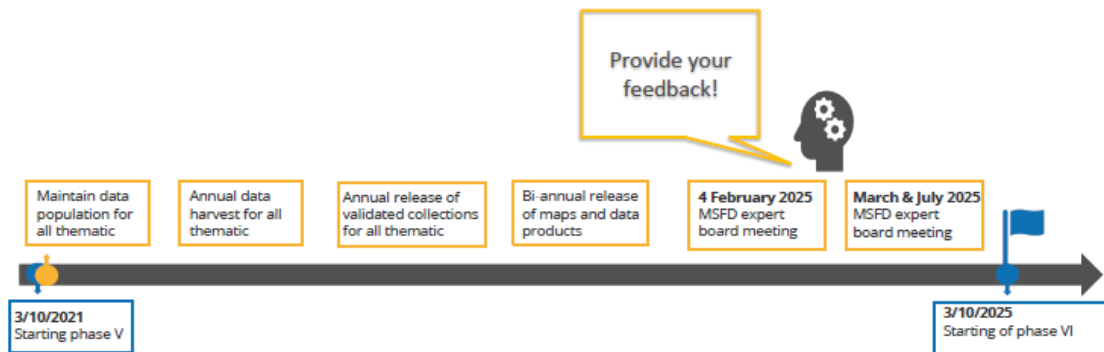


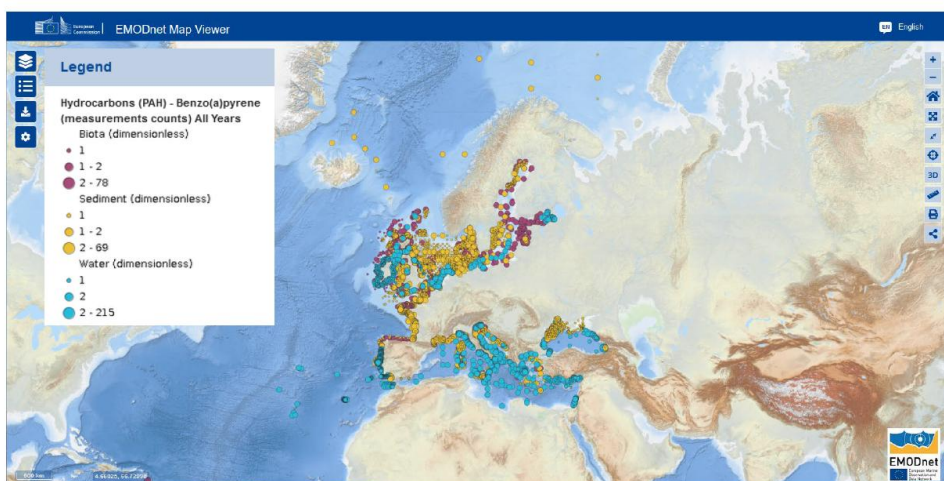
Figure 1 Timeline for publication of regional data products (updated February 2025)

3 Updated Marine Contaminant datasets and maps (Sissy Iona)

The latest regional contaminant maps were presented for the 6 marine regions of the MSFD (v2024). All products are available via the online product catalogue¹. EMODnet aims to provide validated regional datasets using SeaDataNet standards and best practices. To achieve this, we harmonise units and parameter naming and perform quality control. EMODnet's data validation process involves standardisation, harmonisation, and quality control, including surveys to gather information on methodologies and QA/QC procedures. The data includes 157,677 positions from 1960-2023, with contributions from 46 partners and 186 data originators, covering over 7450 different parameters across various categories such as antifoulants, hydrocarbons, heavy metals, and pesticides.

Contaminants Maps - Measurements Counts

2. Per parameter, positions by matrix and values counts



- All Years
- Per year

Figure 2 Contaminant data distribution map (updated February 2025)

¹ <https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/search>

The presentation also highlighted the availability of contaminant datasets in formats such as SeaDataNet/ODV csv spreadsheets and transposed text files. The latter include decomposed P01 information which provides information associated with each individual value of the datasets e.g. substance measured, how it was measured, where, monitored species, etc., which assists in data processing and selection of specific information. The presentation further outlined selected parameters for the maps, including pesticides, antifoulants, heavy metals, and hydrocarbons, along with their respective units of measurement in water, sediment, and biota. The contaminants maps include (1) monitored matrices, (2) measurement counts, (3) contaminants in marine organisms, and (4) concentration values. These maps and datasets are accessible through the EMODnet Portal Products Catalogue and Map Viewer as the 2024 version, the last iteration of map and data products for contaminants were from 2022.

Sissy went on to provide a demonstration of the central products catalogue, illustrating the ease of selection and download of data products².

Maps metadata and downloads - Catalogue

1. EMODnet Central Portal Products Catalogue (under Data Services)



1 download compressed file with:

- Map product (shape files)
- Datasets per matrix and type in 2 formats

Figure 3 Landing page for central portal (updated February 2025)

Finally, the central portal map viewer was demonstrated highlighting the functionality, including time slicers and other GIS functions³.

² <https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/search>

³ <https://emodnet.ec.europa.eu/geoviewer/>

Maps metadata and downloads- Map Viewer

2. EMODnet Central Portal Map Viewer (under Data Services)

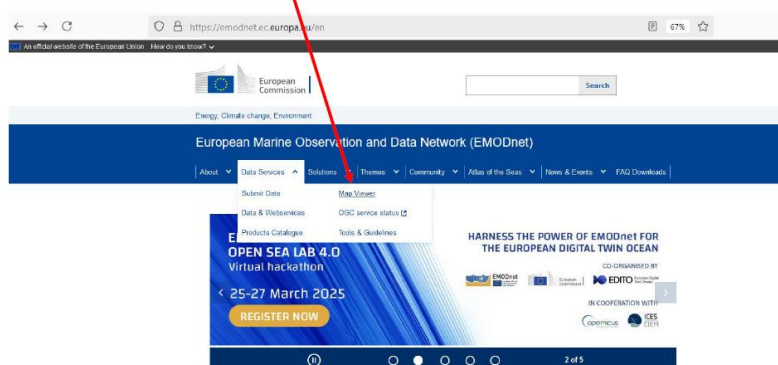


Figure 4 EMODnet Central Portal Map viewer (updated February 2025)

4 Discussion

The main question from the EMODnet products team to the board of experts was related to how to visually present the data on the EMODnet Portal. A previous polling of the MSFD board had recommended that the summary visualizations were calculated on a 6 year median, which coincides with the 6 year assessment window of the EU MSFD. The issue for the EMODnet Portal, is that this shows gaps in the visualization (due to lack of data in all years/substances), which could be addressed by basing the visualization on a 12 year (2 MSFD assessment cycles) median. The inline poll showed a slight preference to agree with the idea of changing (see next section for poll result). The Q&A discussion confirmed that the board had some reservations about the utility of median values in the specific context of contaminants, overall they agreed that having some basic visual representation as a summary was useful to the wider marine data community.

Decision: maps on EMODnet portal for contaminant concentration values for overall European seas will be based on 12 year median value.

Contaminants Maps – Concentrations Values

4. Per parameter, median values of last 6 years, per matrix

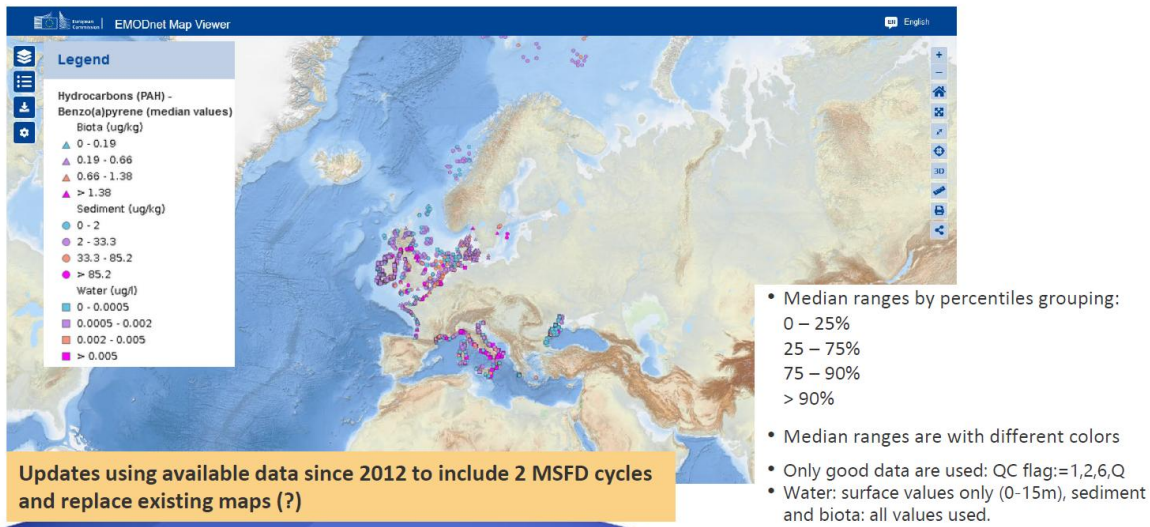


Figure 5 Contaminant Concentration Values – what time period to aggregate? (updated February 2025)

5 Inline polling results

Online polls were launched throughout the presentation to gauge understanding and knowledge of the maps and the EMODnet platform. Two thirds of the participants have used the EMODnet portal in some capacity, but less than half of those polled knew that they could request the full contaminants dataset (open and by request data sources combined), nor that the data format and metadata have been enhanced to provide more context and information in the methods of collection and analysis of the data within the dataset collection.

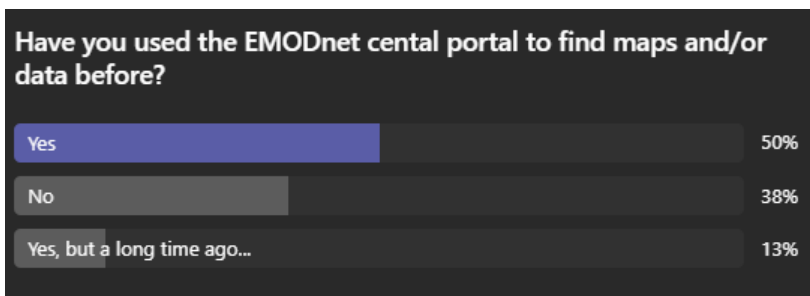


Figure 6 Inline Poll: Use of EMODnet Central Portal (updated February 2025)

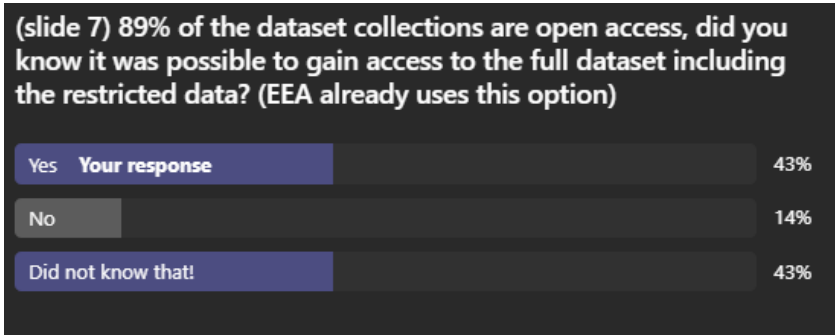


Figure 7 Inline Poll: Knowledge on obtaining full contaminants dataset (updated February 2025)

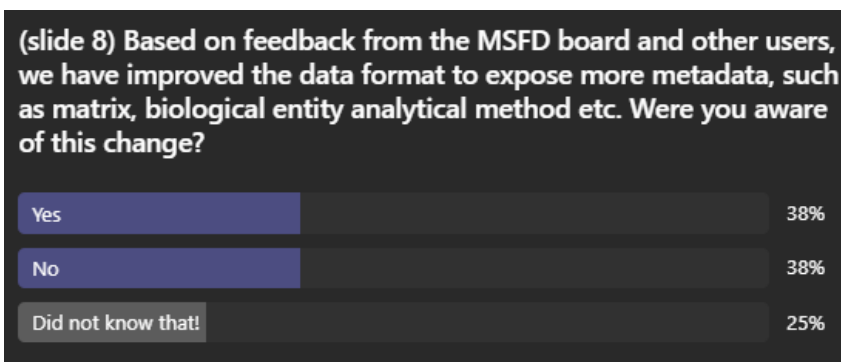


Figure 8 Inline Poll: Enhancements to format and meta data (updated February 2025)

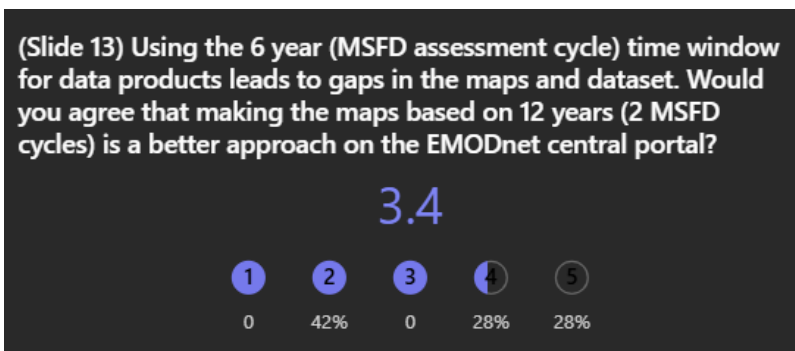


Figure 9 Inline Poll: Time period for aggregated data visualization on EMODnet Central Portal (1=disagree, 5=strongly agree)

6 Participants

Meeting title	MSFD Board for EMODnet Chemistry: Contaminants maps and data products
Attended participants	23
Average attendance time	1h 16m 33s

Participants
Neil Holdsworth
Sissy Iona
Martin Mørk Larsen
Thomas Maes
Marilena Tsompanou
Alessandra Giorgetti
Østrem, Ann Kristin
read.ai meeting notes
Chiara Altobelli
Luminita BUGA
Erol Cavus
Hans Mose Jensen
Silvère André
Marina Lipizer
lucia.vinas
Chris Moulton
Reiner Schlitzer (AWI)
Karin Wesslander
Reiner Schlitzer (AWI)
MAUFFRET Aourell
I. HATZIANESTIS
Megan Anne French
Jemmima Knight



7 Agenda

13:00 Welcome and Introduction, round table of new participants to the board (Neil Holdsworth, ICES)

13:10 Update on development of EMODnet Chemistry (Alessandra Giorgetti, OGS)

13:20 New data collection and map products for contaminants, including Q&A (Sissy Iona, HCMR)

- Presentation includes a live demo of data viewing and map viewing in EMD Central Portal

14:00 Inline polling (Neil Holdsworth, ICES)

- 3 polls run in presentation, results discussed

14:10 Summary and conclusions (all participants)

14:25 Close of meeting

