EMODnet

European Marine Observation and Data Network

EMODnet Thematic Lot n° I - Biology

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Centralisation Phase

4.1.2 Informative material based on 4.2.2 (questionnaire)

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Introduction

EMODnet Biology stakeholder questionnaire was designed to collect information on how EMODnet Biology can support the assessment of marine ecosystem status through the Regional Sea conventions and on what are the major needs in terms of data, tools and products. With the contribution from all partners, an inventory of stakeholders which may be interested in using EMODnet Biology data, tools and products was compiled. The questionnaire was published using EU Survey Platform (https://ec.europa.eu/eusurvey/home/welcome) in October 2023 and was sent via targeted email to more than 70 stakeholders involved in the Regional Sea Conventions (Baltic, North-East Atlantic, Mediterranean, Black Sea) from research, governmental administrations and international organisations. The survey was closed on 31 December 2023.

Figure 1: EMODnet Biology stakeholder questionnaire

1 Results

The questionnaire was answered by 25 experts, which represent 36 % of the contacted stakeholders. Answers were received from representatives of all Regional Sea Conventions and from 11 countries: Sweden, Finland, Germany, United Kingdom (UK), Belgium, Portugal, Spain, Italy, Greece, Bulgaria and Ukraine.

1.1 Stakeholder profiles

The typologies of stakeholders, their role and geographical focus are represented by the plots in Figure 2. It is worth mentioning that some respondents work in multiple regions.

The respondents cover the different geographic scales (local, national, regional, international/sea-basin). The majority of the respondents (60%) are linked to academia/research, whereas 36% work government or public administration and the remaining 4% in international organisations. From the analysis of the results, it is concluded that there is quite good balance between science and policy focused respondents.

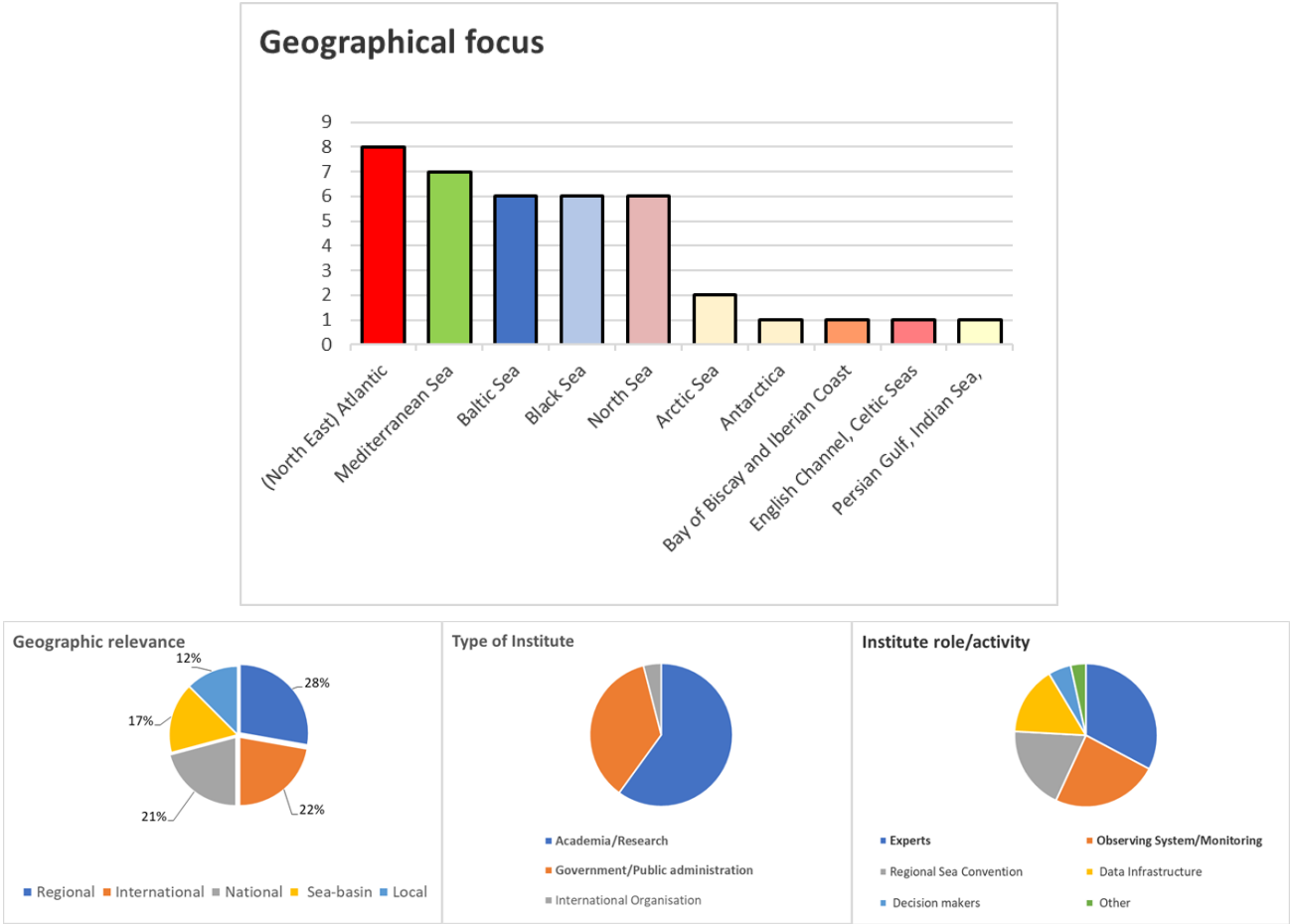

Figure 2: Stakeholder geographical focus (upper panel), geographic relevance (bottom left), type of institute (centre) and institute main role or activity (right).

1.2 Use of EMODnet Biology

About one third of the respondents have used EMODnet Biology data and data products in their work (Table 1), indicating that exchanging information is still necessary. Species abundance and occurrence data are most often used, but also biomass data are frequently used (Figure 3, left panel). Among the EMODnet Biology data products, species distribution maps are most frequently used (Figure 3, right panel).

Table 1: Experience of stakeholders with using EMODnet Biology data and data products and of submitting data to EMODnet.

	Yes	No	No, but intend to do so
Have EMODnet Biology data been used in your assessments/work	9	9	7
Have you ever submitted data to be published via EMODnet Biology/EurOBIS	8	13	4
Have you ever used data products from EMODnet Biology	9	16	

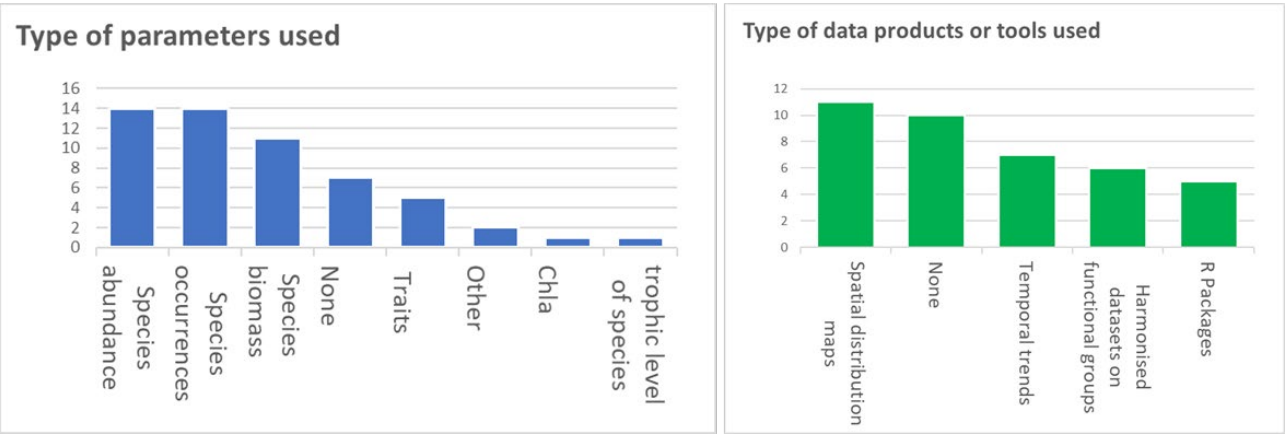

Figure 3: Types of parameters used by stakeholders (left) and types of products or tools (right).

1.3 Stakeholder needs

The need for data covers most of the well-known taxonomic groups (Figure 4), with highest requirement for zooplankton, benthos, fish and phytoplankton. In relation to the type of data, there is equal need for abundance, occurrence and biomass data (Figure 5). Spatially, the need for information is equal among the scales (<1km; <10km; <100km) (Figure 6, left). Seasonal and annual data are the most needed (Figure 6, right), in terms of temporal resolution.

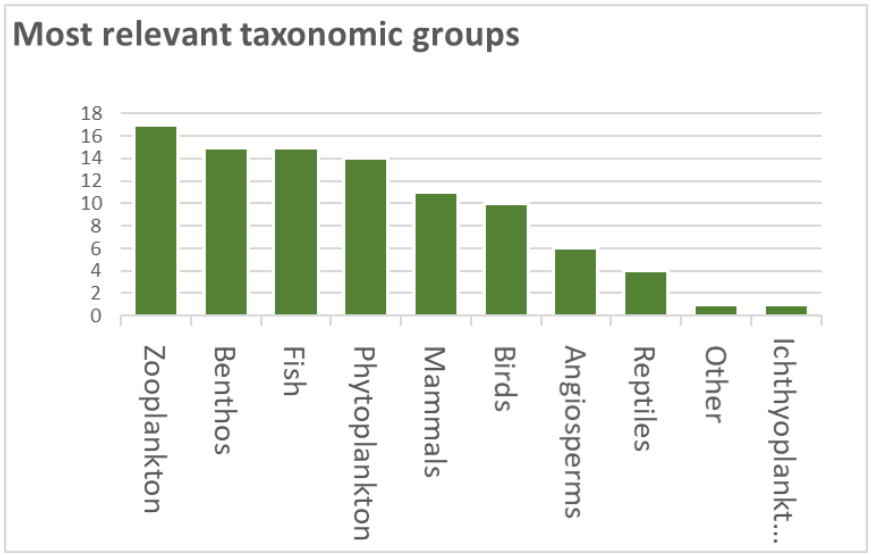

Figure 4: Needs for environmental status assessment: most relevant taxonomic groups.

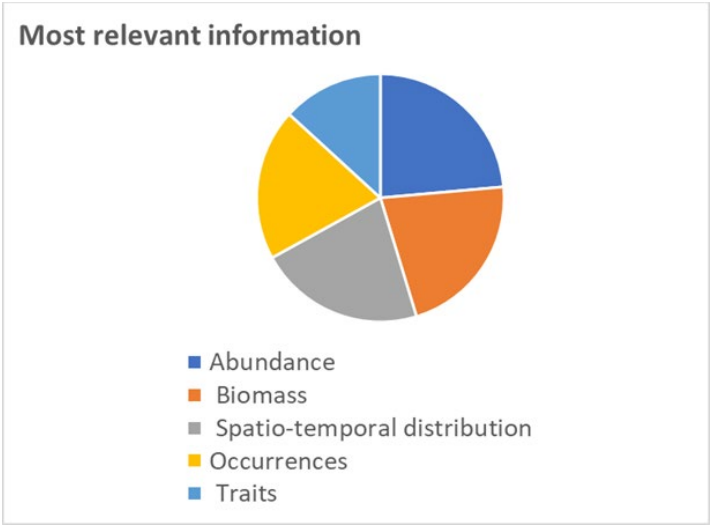

Figure 5: Needs for environmental status assessment: most relevant parameters.

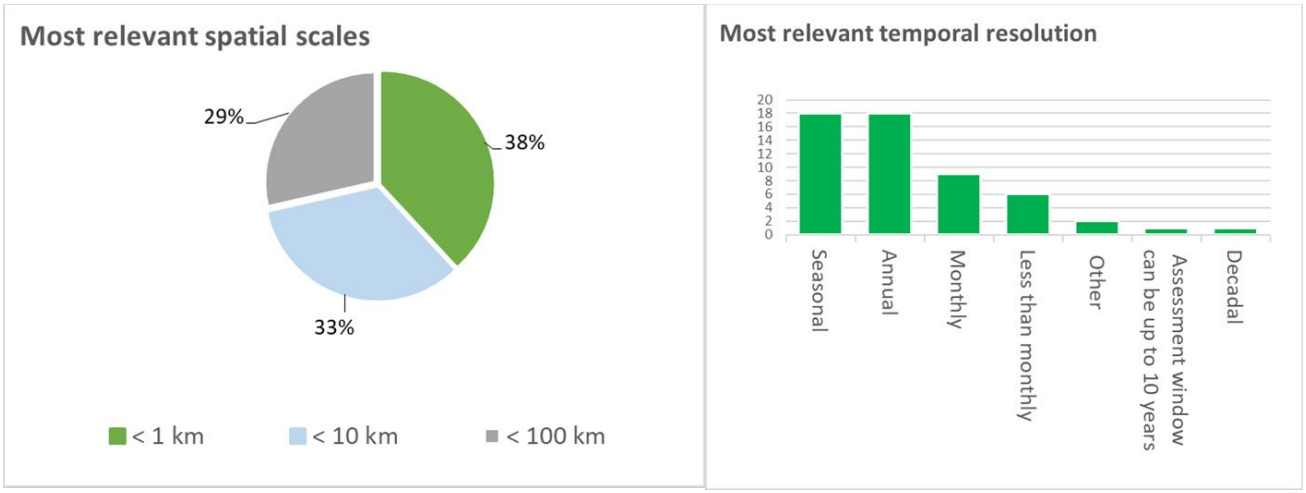

Figure 6: Most relevant spatial scales (left) and temporal resolution (right) required for environmental status assessment.

1.4 Gaps and difficulties perceived by stakeholders

The assessment of marine ecosystem status according to biological descriptors, indicators and ecological objectives faces several gaps and difficulties which are highlighted in Figure 7. The main difficulties in accessing the required data consists in the fact that (many) data are not public, it is difficult to merge data from different sources ,since data is in different formats, or there were not enough data available for the region of interest (Figure 7, left). This answer reflects a general difficulty that has been known to EMODnet Biology for a long time, but is not directly linked to EMODnet Biology data, as almost all data are publicly available (>98%) and data formats are harmonised, according to Biodiversity Information Standards (TDWG- https://www.tdwg.org/).

The main gaps in information required to support environmental status assessment were connected to the lack of temporal trends, spatial distribution information, information on specific taxa groups, and lack of updated information (Figure 7, right).

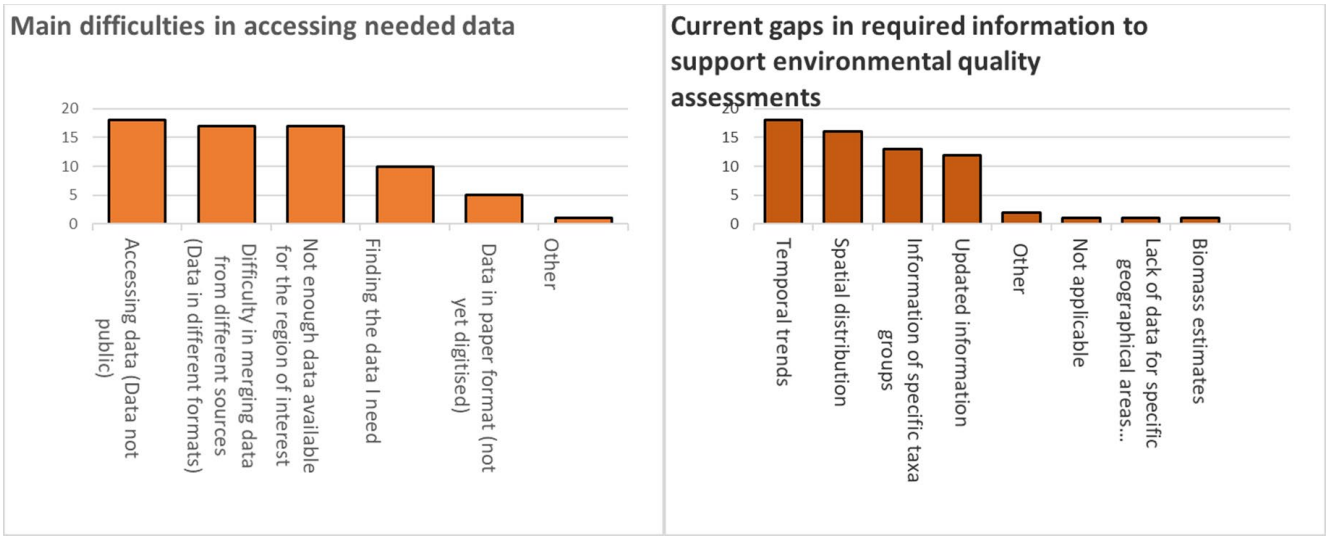

Figure 7: Main difficulties in accessing data (left) and main gaps encountered in information required for environmental status assessment (right).

1.5 Main constraints to sharing data:

The questionnaire highlighted that main constraints to sharing data with EMODnet Biology are that data are already shared through different systems, many data are still restricted, and that there are currently limited resources and expertise for the management of these data (Figure 8). The results also highlight the need for data management training, as limited expertise in this area is an additional constraint to data sharing.

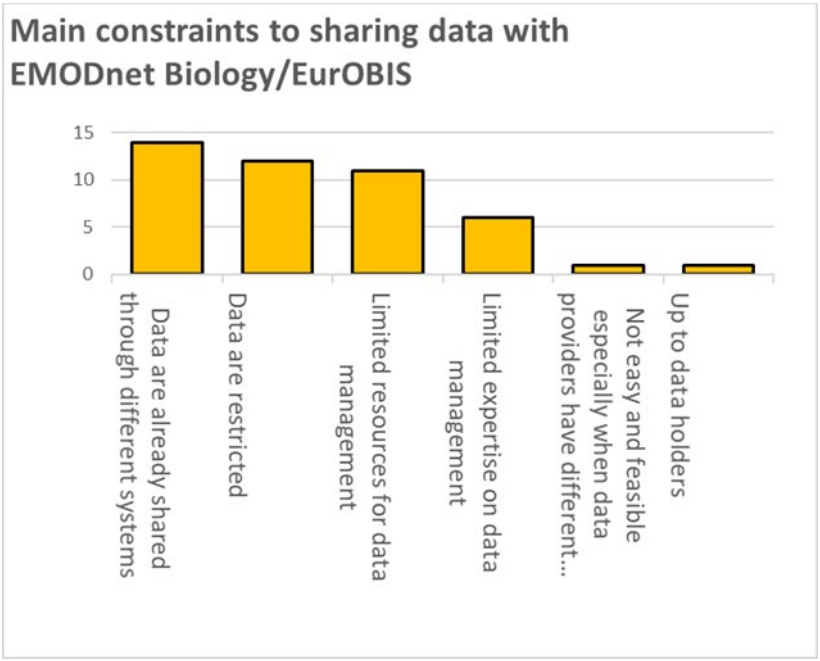

Figure 8: Results from 25 experts regarding the main constraints to sharing data with EMODnet Biology/EurOBIS.

2 Concluding remarks

The results of EMODnet Biology stakeholder questionnaire represent one of the sources of information collected within the project, on what are the major needs in terms of data, tools and products to support the assessment of marine ecosystem status at sea – basin scale, as required by environmental policies such as the EU Marine Strategy Framework Directive and the protocols of the Regional Sea Conventions (OSPAR, HELCOM, Black Sea Commission, Barcelona Commission – UNEP/MAP). Further approaches to collect information consist in a workshop dedicated to Regional Sea Convention experts, organised back to back with the EMODnet Biology annual meeting, held in Constanta, Romania, on April 18, 2024 and in an online-poll distributed during the workshop. The results of the survey have been presented during the workshop addressed specifically to experts of the Regional Sea Conventions, where additional information has been collected and shared among workshop participants.

Given the "gaps & needs" indicated by the stakeholders, the main areas where EMODnet can provide support are following:

By promoting the use of standard metadata and dataset formats which are interoperable with international frameworks (such as DarwinCore, implemented and governed by TWDG), clear licence conditions and open data principles, EMODnet strongly supports the FAIR data principles (Wilkinson at al., 2016[1]) which consist in:

- Findability
- Access
- Interoperability
- Reusability

Lastly, it must be highlighted that EMODnet promotes the sharing and access to open data, this results that almost all EMODnet data are publicly available (>98%).

By empowering data provides with the necessary skills to manage their data and ensure that it adheres to community standards. This can be done via a number of means, e.g. outreach, training, workshops which will be discussed within the consortium and planned, as appropriately, in future Phases.

[1] Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. Sci Data 3, 160018 (2016). https://doi.org/10.1038/sdata.2016.18