



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n°2 – GEOLOGY

EASME/EMFF/2020/3.1.11/Lot2/SI2.853812

Start date of the project: 25/09/2021 (24 months)

Centralisation Phase

Quarterly Progress Report (Q2/2022)

Reporting Period: 01/04/2022 – 30/06/2022



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1. Highlights in this quarter

Task 1: Maintain and improve a common method of access to data held in repositories

Work on collection and harmonisation of new datasets and first deliveries to the different work packages are mainly scheduled to begin in Q1 or Q2 of 2022, but deliveries continue until the end of the project.

Data Deliveries from partner countries during Q2: Data updates for the Geomorphology and General Physiographic Features layers received from Spain and Norway, corrections received by France, Spain, Latvia, Malta, and Slovenia.

Edge Hill University, UK – map of georeferenced coastal-vulnerability maps translated into harmonized polyline shapefile with three classes (high-medium-low) and provided to the entire partnership for quality check before public release.

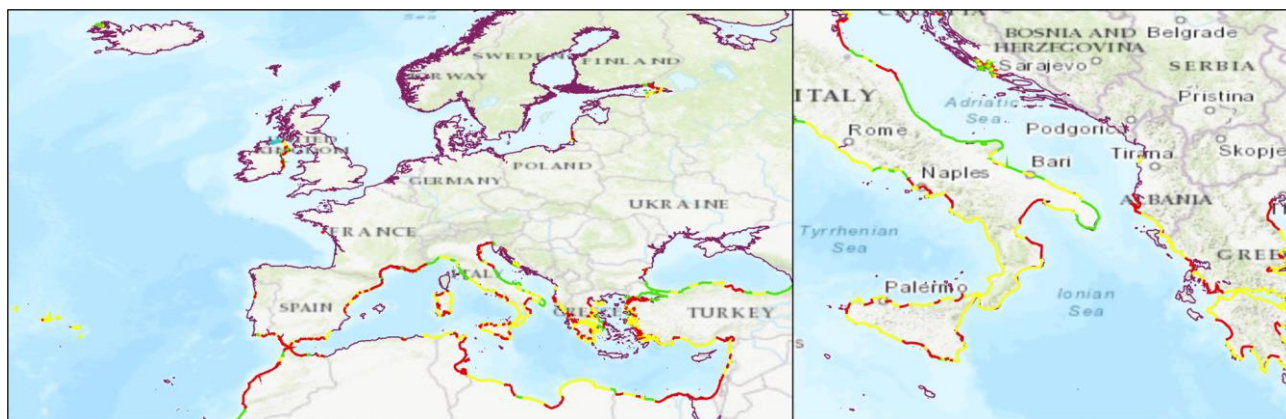


Fig 1. Harmonized map of coastal vulnerability (with detail), showing excellent coverage in southern Europe.

Delivery of hydrocarbons data: Malta, and aggregates: Norway.

Massive increase of deliveries to WP8 database and update of the web portal (see WP8 in *Highlights* below).

Finnish Geophysical data index provided to Data entity index of the EMODnet Geology portal. The data set is a compilation of marine geophysical survey lines.

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

All data submitted by the partners will be added to the different data products and will be updated on the web portal.

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

We have several connections available to external applications – specifically OGC standards WMS, WFS, and CSW. All project partners can connect directly to the portal PostgreSQL-database and create advanced queries on the project's data products.

Task 4: Contribute data, data products and content to a central portal that allows users to find, view and download data and data products:

The technical differences between the new Central Portal and the old EMODnet portal for geology are not big and this indicates that the migration could proceed without major problems. Unfortunately, a usability problem has shown up. If all datasets from all the thematic groups (Lots) were transferred unchanged to the Central Portal, then this would have resulted in more than 1000 layers on the Central Portal. The people at

the central portal feared that this would make the Central Portal unmanageable for the users. The thematic groups (Lots) were thus instructed to reduce the number of datasets – either by merging the datasets into fewer datasets or by omitting some datasets. We were able to reduce the number of layers from 152 to 33 (mostly by merging). The merging of datasets also meant that some of the values had to be updated and harmonized so that the filtering of data can work across data that originate from different layers.

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

We are working in close cooperation with the Central Portal to have our data as well as our portal ready for all necessary measures regarding migration of EMODnet Geology data and products to any desired spaces on the Central Portal.

Task 6: Ensure the involvement of regional sea conventions:

The RSC issue will be dealt with during this phase, mainly through the planned meetings between all EMODnet thematic lots and the RSC's, a forum which was dismantled some years ago.

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

We have been working in close cooperation with DG MARE, CINEA, and the Secretariat to contribute to all joint EMODnet efforts on the implementation of EU legislation and broader initiatives for open data.

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

We regularly monitor and assess the running systems in terms of performance and quality of service. User feedback is handled, and problems resolved within hours.

Task 9: Maintain the existing thematic web portal for a maximum of six months from the start of the projects: We kept our thematic portal running for a maximum of six months from the start of the project to have it successfully migrated to the Central Portal – and in fact even further as long as necessary, provided that this is further approved by CINEA/DG MARE.

Highlights of the different work packages:

WP1. Project Management Since 24.2.2022 all EMODnet Geology activities of the Caspian Sea task have been on hold due to the war in Ukraine. This is since those were designated to our subcontractor VSEGEI in Russia, and cooperation with Russian entities is not possible due to the geopolitical situation (moreover financial transactions to Russian entities is completely blocked by all banks). GTK as coordinator of EMODnet Geology is in the process of discontinuation of the subcontract between GTK and VSEGEI. The note to VSEGEI on discontinuation of the subcontract will be signed in August 2022. After that GTK will take responsibility of all Caspian Sea tasks formerly assigned to VSEGEI. GTK is in the process of subcontracting the former Azerbaijani subcontractor of VSEGEI in order to get new data from Azerbaijan. Attempts on subcontracting entities from the remaining Caspian Sea countries (except Iran, which is impossible due to Iran sanctions) will also be made.

The partners were identifying, collating, and harmonising new national data for this phase of the project.

Full partnership EMODnet Geology project meeting was organized in Utrecht, Netherlands, 17.-19.5.2022.

WP2. Geological data specification and sourcing. This task will be completed by month 12 (Q3 2022), but additional updates will be added during months 13-22 and used in final updates and/or new data products by end of phase IV. Targeted focus is on data from the Caribbean Sea.

WP3. Sea-bed substrate. Sedimentation rates Guidance Document was delivered to the project partners in April 2022 and updated Seabed substrate Guidelines in May 2022. Updated national geodatabases were provided to partners in June 2022. The new deliverable “Seabed Erosion” has been dealt with through inventory of available material on the topic and a separate sediment erosion dedicated workshop was arranged during the full partnership project meeting in Utrecht 13.6.2022.

WP4. Sea-floor geology. Data of EMODnet Geology – Geomorphology line features uploaded at BGR Geoviewer (<https://geoviewer.bgr.de>) and will be delivered to the EMODnet geology portal after QC.

WP5. Coastal behaviour. The literature-based map of coastal-vulnerability indices finalized during the previous quarter was translated into a harmonized polyline shapefile that is presently being QCd in preparation of WMS publication on the portal.

Representatives of WP4, 5 and 6 discussed partner feedback on the alignment of work and contributions concerning the coastal ribbon.

WP6. Geological events and probabilities. WP6 shapefile format shared on file manager 23.6.2022.

WP 7. Minerals WP7 is working on gathering sub-type information regarding hydrocarbons and aggregates to enhance underlying knowledge on seabed mineral occurrences, and a task guide document was circulated to the partnership on 8 April 2022.

WP8. Submerged landscapes. Update to the WP8 Submerged Landscapes database went live in May 2022. The updated database now comprises more than 40,000 (up from ~16,000) features representing 27 classes of submerged landscape and palaeoenvironmental indicator.

WP9. Data management, web portal and services. In this quarter we provided statistics on monthly downloads and dealt with incoming JIRA issues. Main focus is on preparing for the portal migration taking place 2022. The migration is being prepared in close cooperation with the Secretariat.

The main task has been to reduce the number of layers for the Cental Portal and to configurate and harmonize the resulting merged layers. This work is still in progress – see ticket EM-559 in JIRA. The status for the tickets EM-413, EM-414, EM-415, EM-416, EM-417 and EM-595 are now done. We are still working on tickets EM-394, EM-525, EM-529 and EM-566. In this quarter we also updated the data indexes with new data from Belgium, Finland, and Norway.

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
M1: Thematic data products updated T0+6 months	WP9, all WP's	25.03.2022	Delivered	25.03.2022	Our data products have been ready for uploading to CP according to plan.
M2: Data specification and sourcing ready	All WP's	24.09.2022	To do	-	-
M3: Interim report and evaluation of progress	WP1&WP9	24.09.2022	To do	-	-
D1.1: Quarterly report 4/2021	WP1/all	15.01.2022, 15.04.2022	Delivered (and accepted)	15.01.2022, 14.04.2022	-
D1.2-8: Quarterly reports	WP1/all	15.07.2022, 15.10.2022, 15.01.2023, 15.04.2023, 15.07.2023	This Q report, To do (all the rest)	15.07.2022	-

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D2.1: Interim report	WP1/all	24.9.2022	To do	-	-
D2.2: Final report	WP1/all	24.9.2023	To do	-	-
D3.1: Thematic data products/maps updated on Central portal	WP9/WP1/all	24.03.2022	Delivered	-	Our data products have been ready for uploading to CP according to plan.
D3.2: Final data products/maps available	All WP's	24.9.2023	To do	-	-

2. Identified issues: status and actions taken

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
Secretariat Assessment: There are more Deliverables listed in the quarterly report than listed in the GANTT chart of the technical workplan	Resolved	The deliverables listed in the Q report are intended for internal EMODnet Geology use, and unnecessarily included in the Q report, but could be used in Q reporting in a later phase.	-	14.4.2022
EM-525 Request to update two layers to use different styling on the European Atlas of the Seas.	Pending	Dialogue with the Secretariat		
EM-85 Request for better mime-type on a layer	Resolved	Simple Geoserver setting		8.4.2022
EM-415 Provide database dump	Resolved	Provided a database dump		2022-02
EM-518 Request for SSL-certificate upgrade on portal	Pending	Further investigation required		

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
The ongoing spread of the Covid-19 virus all over Europe might affect the progress of the project, especially staying on schedule/meeting the deadlines.	Resolved (partly)	We organized the EMODnet Geology meeting in May 2022 as a hybrid meeting	-	-
War and Russian army invasion in Ukraine have already affected the progress of the project. The planned EMODnet Geology WP3 workshop on seabed erosion was originally postponed due to the sudden situation (war).	Resolved (partly)	All ongoing cooperation with Russian organizations has been suspended for the time being. The postponed workshop was held during the Utrecht project meeting in May with a follow-up remote meeting in June.	-	-
Due to the geopolitical situation (the war in Ukraine) GTK has been forced to discontinue the subcontract with subcontractor VSEGEI.	Pending	A note on discontinuation of the subcontract between GTK and VSEGEI will be signed in August (Q3)	18.8.2022	-

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WP6 lead has limited remote access to GIS resources	Resolved	Refurbishment of ISPRA office after extended fire	January 2022	4.4.2022
WP9. Splitting up boreholes into boreholes and grab samples	Resolved	The borehole index will be split in at least two categories (boreholes and grab samples).	1.4.2022	1.4.2022
WP9. Splitting up geophysical index into seismic and multibeam	Pending. Rescheduled due to lack of content.	The geophysical index will be split in categories seismic and multibeam.	1.7.2022	

3. User feedback

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
20.5.2022	University College Cork	Missing confidence information on the 1:250k seabed substrate map	email	24h/ email	resolved	explained	

4. Meetings/events held/attended & planned

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.)
5.4.2022	Remote, Teams-Meeting	Internal EMODnet Geology WP3, GTK Meeting	no	O	Discussions related to the product development
7.4.2022	Remote, Webex-Meeting	Internal EMODnet Geology Coastal Ribbon meeting	no	O	Coastal Ribbon review of drafted text for a round mail, work on finalizing of Inventory (6 participants).
20.4.2022	Remote, Teams-Meeting	Internal EMODnet Geology WP3, GTK Meeting	no	O	Discussions related to the progress of the project
22.4.2022	Remote, Webex-Meeting	Internal EMODnet Vocabulary Group meeting	no	O	3 rd meeting of the Vocabulary Group to complete the tables comparing related terms and definitions across WPs. Harmonisation of the vocabulary used in the project (6 participants).
26.4.2022	Remote, Webex-Meeting	Internal EMODnet Coastal Ribbon meeting	no	O	Coastal Ribbon meeting - to discuss the last version of the inventory and prepare the EMODnet Geology project meeting (6 participants).
26.-27.4.2022	Remote, Zoom-meeting	11th EMODnet Technical Working Group Meeting	yes	A	Discussion on EMODnet central portal
27.-28.4.2022	Remote, Zoom-meeting	16th EMODnet Steering Committee meeting	yes	A	All aspects of project administration, collaboration, and future plans. Including aspects of portal centralisation.

6.5.2022	videoconference	External meeting of institutions contributing to Italian WP6 deliveries (CNR-ISMAR, OGS, INGV, ENEA, University Genova, Palermo, RomaTRE and Trieste).	No	O	discussion on the implementation of Italian contribution to WP6 products (18 participants)
9.5.2022	Remote, Zoom-Meeting	EMODnet CP technical team meeting with Geology	no	A	Discussions on portal centralisation
11.5.2022	Remote, webinar	External, “Expanding Ocean data interoperability between Europe and Asia”	no	A	The webinar will present examples and achievements of ongoing collaborations between EU, Chinese and Asian marine data and information services.
11.-14.5.2022	Reykjavik, Iceland	External, Nordic Geological Winter Meeting 2022	yes	A	Oral presentation by EMODnet Geology coordinator “The EMODNET-Geology project – harmonizing geological data of the European seas” on EMODnet Geology and EMODnet in general.
16.-20.5.2022	Venice, Italy	External, The GeoHab 2022 Conference: marine geological and biological habitat mapping	yes (oral presentation by Kotilainen et al.)	A	International conference on marine geological and biological habitat mapping, 120 participants.
17.05.2022	Utrecht, Netherlands, and online	Internal Workshop	yes	O	Meeting to discuss actual status and possible actions and benefit on Quaternary and Geomorphology Prototype Areas
17.-19.5.2022	Utrecht, Netherlands (+hybrid remote)	Internal, EMODnet Geology Project Meeting	yes, presentations by the partners	O	Discussions on project progress and future steps, 60 participants
20.5.2022	On-line	Internal EMODnet Geology Steering Group Meeting	no	O	Meeting of the Steering Group to review the EMODnet project meeting

24.5.2022	Remote, Teams-Meeting	Internal EMODnet Geology 5 steering group meeting	No	O	discussion of EMODnet Geology issues (10 participants)
24.5.2022	remote	Internal EMODnet Geology 2.5 D visualisation meeting between WP4 and WP9	no	O	Small- committee meeting to exchange ideas
6.6.2022	GTK, Otaniemi, Espoo, Finland (+hybrid)	Internal EMODnet Geology WP3, GTK Meeting	no	O	Discussions related to the progress of the project
8.6.2022	Remote, Teams-Meeting	Internal EMODnet Geology WP 9, WP3 and WP 4: 2,5 D visualisation, online-meeting	yes	O	Discussions related to the portal and 2.5D visualisation (5 participants).
10.6.2022	Remote, Teams-Meeting	External, Kick-Off EMODnet for Ocean Decade Coordination Group	no	A	Discussion on EMODnet participation in UN Ocean Decade. Several members from EMODnet Geology attended.
13.6.2022	Remote, Teams-Meeting	Internal Seabed Erosion Workshop, EMODnet Geology WP3	Yes, presentations by partners	O	Discussions on available data and how to proceed with the erosion task (D3.4.)
15.6.2022	Remote, Webex-Meeting	Internal EMODnet Geology WP 9, WP3 and WP 4: 2,5 D visualisation, online-meeting	yes	O	Discussions related to the portal and 2.5D visualisation
16.-17.6.2022	Glyfada, Athens, Greece (+hybrid)	External EMODnet Ingestion 3 kick-off meeting	yes	A	Discussions on project progress and future steps
20.6.2022	Remote, Teams-Meeting	External, Infosession: "How to make a site compliant"	no	A	Infosession: how make site EU compliant, related to portal centralisation
30.6.2022	Remote, Zoom-Meeting	EMODnet CP technical team meeting with Geology	no	A	Discussions on portal centralisation
SUM				O	Total # of meetings organised = 15
SUM				A	Total # of meetings attended = 10

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
4-6.7.2022	Hybrid online and at University of Malta campus	Conference	A	International Conference for Seafloor Landforms, Processes and Evolution (University of Malta). Five presentations accepted with direct link/association with WP8.
18.7.2022	Online	Meeting	A	Meeting with palaeobotanists at Università La Sapienza, Roma to discuss broad scale palaeovegetation on the continental shelves during the 4 palaeogeographic intervals defined for reconstruction for WP8.
November 2022	In person	Meeting	A	Palaeogeographic reconstruction working group dedicated workshop back-to-back with the project meeting in November 2022 in Varna, Bulgaria.
27.7.2022	videoconference	meeting of institutions contributing to Italian WP6 deliveries (CNR-ISMAR, OGS, INGV, ENEA, University Genova, Palermo, RomaTRE and Trieste)	O	Continue discussion on the implementation of Italian contribution to WP6 products.
7.-11.11.2022	Varna, Bulgaria	EMODnet Geology full partnership project meeting	O	Discussions on project progress and future steps.
TBD	Online	Meeting	A	Schedule a meeting with Prof. F. Gamberi to discuss the METIQ project (reconstruction and Quaternary Evolution of the Italian territory) to see if any overlap / data that can be delivered via the EMODnet Geology portal.
TBD	Online	Meeting	A	Schedule a meeting with Prof. Aaron Micallef to discuss the MARCAN project (groundwater specific) to see if any overlap / data that can be delivered via the EMODnet Geology portal.

5. Communication assets

A. Communication products developed				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
13 May 2022	Oral presentation and abstract	Henry Vallius on behalf of EMODnet Geology partners “The EMODNET-Geology project – harmonizing geological data of the European seas”. Nordic Geological Winter Meeting, 11-13 May, Reykjavik, Iceland: Abstracts.	Public dissemination	Oral presentation at the Nordic Geological Winter Meeting, May, 2022, Reykjavik, Iceland. https://ifi.is/wp-content/uploads/2022/05/NGWM-2022.pdf
May 2022	Vocabulary and product description	A product of the workshop held on 10 th February 2022 has been a vocabulary describing all the features compiled for WP8. Additionally, more information on the format of the data available on the portal has been summarised.	Updated WP8 explanatory webpage.	Online via the EMODnet Geology portal. https://www.emodnet-geology.eu/data-products/submerged-landscapes/
May 2022	Oral presentation and abstract	Kotilainen, A.T., Kotilainen, M.M., Jokinen, S., Virtasalo, J.J., Kaskela, A.M, 2022. Coastal estuaries – Baltic Sea habitat types under threat. In: The GeoHab 2022 Conference: marine geological and biological habitat mapping, 16-20 May, 2022, Venice, Italy: Abstracts, 65.	Public dissemination	Oral presentation at the GeoHab 2022 Conference, May, 2022, Venice, Italy.
23.–27. May 2022	Abstract and oral presentation	Cherith Moses, Cerys Butterill, Tanvi Chopra, Amber Humphries, and Sytze van Heteren, Pan-European coastal vulnerability: translating incomplete data and information for communicating situational awareness	Presentation given and discussed	EGU General Assembly 2022

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
5.7.2022	Book of peer-reviewed scientific articles.	Introduction to Geological Society (GSL), London, Special Publications, 505: Asch, K., Kitazato, H. and Vallius, H. (eds). From Continental Shelf to Slope: Mapping the Oceanic Realm.	Widespread public dissemination of EMODnet Geology in this dedicated special publication of GSL.

A. (Co-)Authoried peer-reviewed publications in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No

B. Other/non-peer reviewed types of publications (co-)authoried in the quarter					
Date of publication	Type of publication	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

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	Matomo/ Europe Analytics/ other Please specify	We don't publish data with coverage, only point information on accumulation rate, no coverage.
What is your opinion on the data coverage within EMODnet for your thematic?		no coverage of data, only for data products, see below.
B) Usage of data in this quarter		Se tab 5 in the spreadsheet.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		<p>There is no uniform digital definition (in GIS format) of the European sea areas and their boundaries used in the EMODnet Lots. Therefore, EMODnet Geology has used its own Regions shapefile to assess the coverage of the products (maps) (WP3, WP4).</p> <p>WP3. The latest seabed substrate data update (21.9.21) includes 4 data products at different scales: 1:1 000 000, 1: 250 000, 1: 100 000 and multiscale. The multiscale data includes 11 layers at varying scales (1:70 000 – 1: 1500). The seabed substrate data at 1 M scale covers about 43 % of the Geology Regions, data at scale 250 k covers about 12 % and more detailed scales cover less than 5 %. The coverages by sea-basin are indicated in the excel file (Indicator 2). Updated seabed substrate data was published in September 2021. There have not been any updates yet in this phase.</p> <p>WP4: No changes during this Phase yet. No report on new numbers of area coverage, as the latest project contributions consists of a line feature layer (marine geology - geomorphological line features) on the BGR Portal. Due to the characteristics of the line geometry, we cannot assess its areal coverage.</p> <p>Coverage: Pre-Quaternary geology: complete; Quaternary Geology: rather good coverage, partly with excellent detail data, several data gaps remain; Geomorphology:</p>

		Excellent detail data from mapping campaigns of numerous regions. General physiographic features: rather good coverage with several data gaps
B) Usage of data products in this quarter		Map requests are implicit in WMS stats. We see a slight increase in usage per quarterly report. Numbers are quite volatile due to machine-to-machine interfaces.
3. Internal and external organisations supplying/approached to supply data and data products within this quarter		No change since last report.
4. Online 'Web' interfaces to access or view data		No change since last report.
5. Statistics on information volunteered through download forms		Due to GDPR we do not register place of origin.
6. Published use cases		-
8.1. Technical monitoring		See graph in spreadsheet. Both response time and up-time satisfactory.
9. Visibility & Analytics for web pages		We didn't get report for this quarter. From last report: <i>We see a steady increase and/or stable situation in general. We see a slight increase on all parameters except the contribute page which has moved to a less prominent location on the portal.</i>
10. Visibility & Analytics for web sections		We didn't get report for this quarter. From last report: <i>Previous trend continued, that users are more keen to accessing maps and downloads directly. This is a common trend to jump directly from Google to sub pages.</i>
11. Average visit duration for web pages		We didn't get report for this quarter. From last report: <i>The outliers are difficult to explain. The numbers show no clear trend for this reporting period. We are averaging on approx 1 minute per page view and 1 hr average per visit which can be seen as satisfactory.</i>

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

7. Annex: Other documentation attached

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