



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 (Q3/2022)

Reporting Period: 01/07/2022 – 30/09/2022



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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 were scheduled to begin in Q1 or Q2 of 2022, continued during Q3, but deliveries continue until the end of the project. This is especially true for the remote sea areas, the Caspian Sea and Caribbean Sea (see WP1 description).

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 new and updated data submitted by the partners are added to the different data products and are updated on the web portal in order to be migrated to the Central 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 work relating to the Central Portal mostly had to do with the review of filter functionality, legends, metadata and download functionality (WFS). Some metadata had to be corrected. Geometries in our PostgreSQL database also had to be transformed so make the WFS work correctly. The Central Portal is going to make a soft launch of the map viewer, and this means that not all issues will be solved before deployment.

In the last quarter the layers were grouped together at the request of the Central Portal. All the layers of submerged landscapes were grouped into one entity – but this was not a good solution. The submerged landscapes are now split into five layer groups: Last Glacial Maximum landscapes, Palaeocoastline, Submerged Landscapes (points), Submerged Landscape (lines) and Submerged Landscape (polygons).

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

We have been 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. In this quarter most of the work on Central Portal migration has been done on solving issues relating to the Central Portal web map viewer.

Task 6: Ensure the involvement of regional sea conventions:

Despite earlier efforts to advertise EMODnet Geology to the RSC's we have not managed to involve RSC's with EMODnet Geology. However, there have been discussions with the Secretariat and other lots to have meetings between 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.

We are working on cooperation with the Seabed Habitats lot on "Vulnerable Marine Ecosystem (VME) Elements" of the Northeast Atlantic for ICES.

WP5 Highlighted EMODnet Geology in a EuroGeoSurveys article about Pan-European geological data, information, and knowledge for a resilient, sustainable, and collaborative future.

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 started the process of discontinuation of the subcontract between GTK and VSEGEI. The ceasing of our subcontract with VSEGEI was accepted by CINEA on 30.8.2022 after amendment of Annex II of our Service Contract, and VSEGEI was notified on the discontinuation of the subcontract. After that GTK took over the responsibility of all Caspian Sea tasks formerly assigned to VSEGEI. GTK is in the process of subcontracting the former Azerbaijani subcontractor of VSEGEI to get new data from Azerbaijan. Attempts on subcontracting entities from the remaining Caspian Sea countries (except Iran and Russia, which is impossible due to sanctions) will also be made.

The partners were identifying, collating, and harmonising new national data for this phase of the project, including data from the Caribbean Sea. GTK is in the process of getting additional data from the Caribbean Sea through ASGMI (Asociación de Servicios de Geología y Minería Iberoamericanos), which has many members amongst the geological surveys in the Caribbean Sea area. There are further plans of cooperation with at least Colombia, Cuba, and Venezuela, who have informed us that they have marine geological data.

EMODnet Geology has had two Steering group meetings during the reporting period and participated in one progress meeting by DG MARE (18th July).

First year progress report (Interim report) was submitted to CINEA on 22.9.2022.

WP2. Geological data specification and sourcing. This task was 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 remote sea areas, the Caribbean Sea and the Caspian Sea.

WP3. Sea-bed substrate. WP3 Substrate data have been used in the report on the need for environmental impact assessment, in two planned marine cable route projects in Finland.

WP4. Sea-floor geology. 1. The new WP4 Geomorphology layer: “Geomorphology lines” is now online. It contains lines and outlines of geomorphological features such as escarpments, drumlins, channel thalwegs, glacial scoring marks and others which are complementing the geomorphology base layer.

The Geological Society of London Special issue: From Continental Shelf to Slope: Mapping the Ocean Realm Eds: Kristine Asch (corresponding editor), Hiroshi Kitazato and Henry Vallius is complete and has been published in its print edition.

WP5. Coastal behaviour. WP5 published an article about Pan-European geological data, information, and knowledge for a resilient, sustainable, and collaborative future (see chapter 5).

WP6. Geological events and probabilities. Cooperation agreements with other Italian Public Research Institutions have been made in order to refine and implement WP6 data.

Cross-WP activity including WP's 3, 4, 5, 6, and 8, reported by WP6: Following a few cross-thematic meetings focused on coastal ribbon issues, a questionnaire has been prepared together with WP4 and WP5 to enquire among Partners about data available along coastal areas, both on land and at sea. It will include information which might contribute to address probabilities for any occurrence.

WP 7. Minerals WP7 has received updates during the previous quarters, are expecting data from Turkey on hydrocarbons in the Black Sea and in the Marmara Sea, as well as additional data from the remote sea areas. A reminder on additional data will be sent out in early Q4 prior to the Varna meeting.

WP8. Submerged landscapes. The next portal update for WP8 is scheduled for October 2022 with new submissions from 3 partners at the last deadline in Summer 2022. Further, regional working groups have been defined which will work on seven geographic regions to frame the available WP8 datasets in a regional context including information on vegetation. This quarter, one meeting (18th July 2022) has taken place to further this goal within the project timeframe. Products and activities from WP8 have been presented at the International Conference on Seafloor Landforms, Processes and Evolution (4-6th July 2022) where five WP8 partner presentations were made to an in-person audience of 120-150 people with more joining online.

WP9. Data management, web portal and services. In this quarter most of the work has been done on two tasks: Solving issues relating to the Central Portal web map viewer and the update of geomorphology at the original EMODnet portal for geology.

The status of the tickets EM-85 and EM-142 are done.

The tickets of EM-529, EM-559, EM-394, and EM-663 are in progress but we cannot do more from our side. The Central Portal will fix the remaining issues after the soft launch of the Central Portal map viewer.

We are still working on ticket EM-525, EM-566, EM-641 and EM-649.

WP4 has delivered updated geomorphology. The layers “general physiographic features”, “geomorphology (polygons) were updated and a new layer, “geomorphology lines” has been added. At this point the new layer, geomorphology lines, is only added to the original map viewer for geology and not to the Central Portal map viewer yet because this could complicate the soft launch of the Central Portal map viewer.

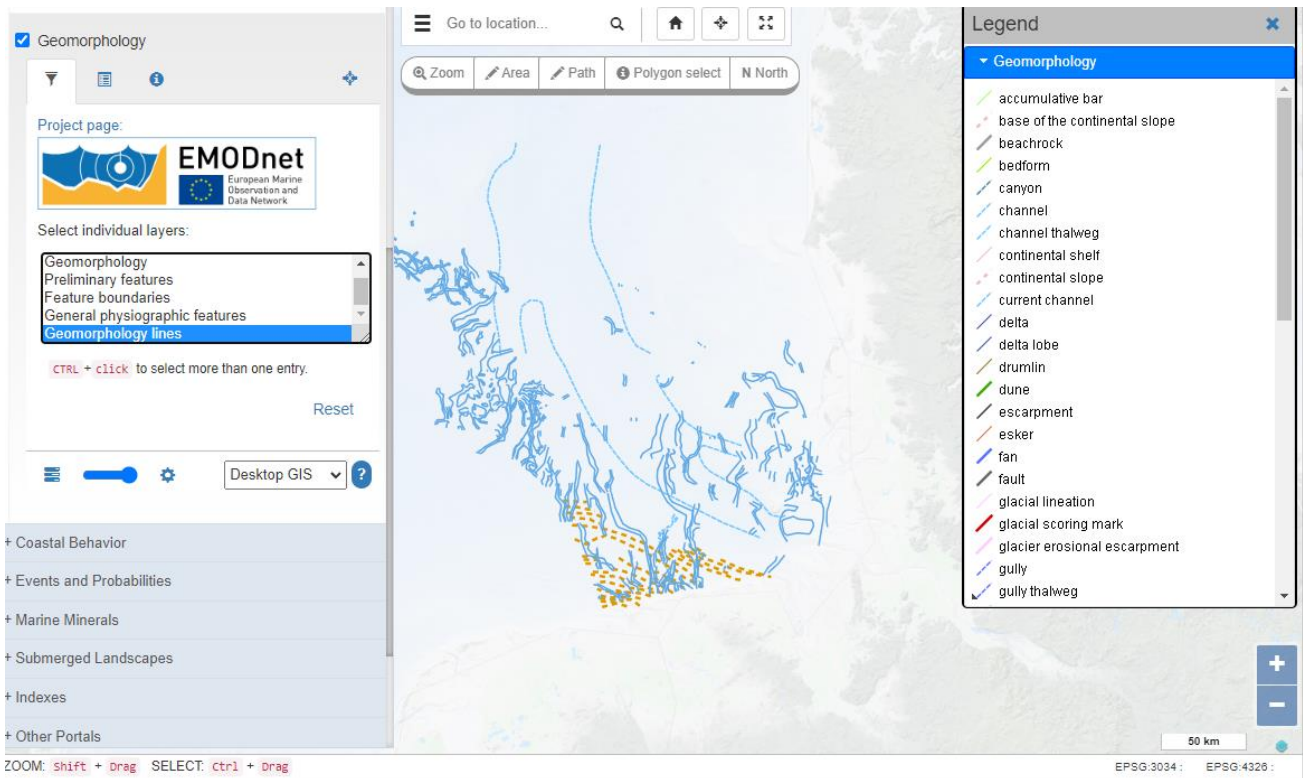


Figure 1 The new layer: geomorphology lines

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	Delivered	-	-
M3: Interim report and evaluation of progress	WP1&WP9	24.09.2022	Delivered	-	-
D1.1: Quarterly report 4/2021	WP1/all	15.01.2022, 15.04.2022, 15.07.2022	Delivered (and accepted)	15.01.2022, 14.04.2022, 15.07.2022	-
D1.2-8: Quarterly reports	WP1/all	15.10.2022, 15.01.2023, 15.04.2023, 15.07.2023	This Q report, To do (all the rest)	14.10.2022	-
D2.1: Interim report	WP1/all	24.9.2022	Delivered	22.9.2022	-

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
WP9. Splitting up geophysical index into seismic and multibeam.	Pending Rescheduled due to lack of content.	We have added a filter so that the user can search for “Multibeam” and “All geophysics”. Multibeam data has so far been delivered by one institution only (GTK).	1.1.2022 rescheduled to 1.7.2022.	16.9.2022
Secretariat Assessment: The description of WP6 is very brief and would benefit from more context. E.g. is it not entirely clear what the status update for WP6 means.	Resolved	In each phase of the project, WP6 leader provides empty shapefiles formatted according to WP6 guidelines for that phase in order to make it easier for Partners to compile the corresponding layers. Empty shapefiles are elaborated sometime after the guidelines were circulated in case any issue is raised in the meantime. Consequently, empty shapefiles were shared on the file manager on the date indicated in the report.	-	14.10.2022
Secretariat assessment: For several tasks, the same status update was given as in the previous quarterly report(s), e.g. Task 5, 6 and 7	Resolved	Regarding task 5 we have all the time been working on <i>Contributing content to dedicated spaces in Central Portal</i> and we have had our products ready for migration to Central Portal since month 6. Nothing has changed, thus the same text. Regarding task 6 (<i>Ensure the involvement of regional sea conventions</i>) we are waiting for the planned meetings between all EMODnet thematic lots and the RSC's. Since nothing has changed there's no reason to change the text. Regarding task 7 we are working in close cooperation with DG MARE, CINEA, and the Secretariat as well as national authorities to contribute to all joint EMODnet efforts <i>on the implementation of EU legislation and broader initiatives for open data</i> . We had nothing specific to report in Q2, thus the same text.	-	14.10.2022
Secretariat assessment: Please delete indicator 8.2 from the spreadsheet.	Resolved	Deleted	-	14.10.2022
Secretariat Assessment: <i>Indicator 2: Status/Volume and coverage of total number of products.</i> • What is the portal's plan with regard to data collection from the Caribbean Sea?	Pending (on time)	The portal will be populated with data from the Caribbean Sea during the second project year. Since the Caribbean Sea is a new sea area, and geological data is sparse, it takes more time to collect, and harmonise the data.	24.9.2023	

Secretariat Assessment: <i>Indicator 6: Published use cases.</i> • When does the thematic lot plan to develop new use cases?	Pending	Use cases are not developed or produced by the thematic lots. They are products of third parties actions where they use data products constructed by the thematic lots. So the thematic lot is dependent on actions of third parties, mainly economic operators or public authorities. We have a new use case, the GARAH, under work.	-	-
Secretariat Assessment: <i>Progress solving identified issues; EM 142 and 85.</i>	Resolved	The status of the tickets EM-85 and EM-142 are done.	-	14.10.2022

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
WP1. Project Management. Due to the geopolitical situation, and especially as it would be impossible to pay any partner payments to Russia, GTK has been forced to discontinue the subcontract with subcontractor VSEGEI, Russia. Also all ongoing cooperation with any Russian organizations has been suspended for the time being.	Resolved	A note on discontinuation of the subcontract between GTK and VSEGEI was signed in August (Q3). This was accepted by CINEA after amendment of the Service Contract Annex II	30.8.2022	-
Identified issue with WP8 database – some data is not displayed/downloadable on portal.	Pending	Meeting with WP9 to resolve issue.	End of October	

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
06/09/2022	ISPRA	Request for information on sediments grainsize underlying Seabed Habitats products	email	One day	Resolved	Reference to EMODnet Geology WP3 data was provided	

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.)
4-6.7.2022	Hybrid online and in-person at University of Malta campus	International Conference for Seafloor Landforms, Processes and Evolution.	Yes. Five WP8 presentations: Miko, S. et al. <i>Late Pleistocene and Holocene paleoenvironments of a submerged karst landform (Pirovac Bay, Croatia)</i> . Senolt, N. et al. <i>Holocene Paleoenvironmental Reconstruction of a Karst Krka River Estuary (Eastern Adriatic Coast)</i> . Hasan, O. et al. <i>Submerged marine terraces and paleo shorelines along the eastern rim of the Mid Adriatic Deep</i> . Prampolini, M. et al. <i>Submarine geomorphology north-east of the Maltese Islands</i> . Stewart, H A. and EMODnet Partners <i>Submerged Landscapes Across European Seas</i> .	A	Opportunity to engage with wider community, gain feedback on products and source new data contributions. In-person attendance 120-150 people with more joining virtually. Representation from geological surveys, marine institutes, industry, and universities from around Europe and globally.
6.7.2022	Remote, Teams meeting	External meeting	No	A	Discussion on manuscript “Digital geodata and models of Europe’s subsurface support the green transition and UN sustainable development goals” and the link between EMODnet Geology and the

						European Geological Data Structure. Agreed to add a small section on interoperability.
8.7.2022	Remote meeting	Teams	EMODnet Geology 5 steering group meeting	No	A	discussion of EMODnet Geology issues (10 participants)
18.7.2022	Remote meeting	Webex	DG MARE meeting on the progress of portal centralisation & state of play	No	A	Discussions on the progress of portal centralisation and on the status of each thematic EMODnet group.
18.7.2022	On-line		Internal Working Group Meeting	Yes. Informal overview slides given by WP8 Leader Heather Stewart and modelling example slides by Dr. Federico Di Rita.	O	Meeting with palaeobotanists Dr Francesco Chiocci, Dr Donatella Magri and Dr Federico Di Rita ased at the Università La Sapienza, Roma to discuss broad scale palaeovegetation on the continental shelves as part of working group activities for palaeographic reconstruction. Primary outcome was to definition of a case study area in the Western Mediterranean Sea / Italian continental Shelf to test the feasibility of extrapolating palaeovegetation across a previously exposed continental shelf base on sparse dataset.
27.7.2022	videoconference		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)
1.8.2022	Remote, Meeting	Webex-	Internal EMODnet Geology 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).
17.8.2022	Remote, Meeting	Teams-	Internal EMODnet 5 Geology, GTK Meeting	No	O	Discussions related to the progress of the project

25.8.2022	Remote, Teams-Meeting	Meeting between EMODnet Geology coordination (GTK) and a potential Caspian Sea subcontractor	No	O	Discussions related to a potential subcontract in order to get marine geological data from the Azerbaijani part of the Caspian sea.
31.8.2022	Otaniemi, Espoo, Finland	Internal EMODnet 5 Geology WP3/GTK Meeting	No	O	Internal discussions related to the seabed erosion deliverable
6.09.2022	Remote Teams meeting	EMODnet Geology 5 steering group meeting	No	A	discussion of EMODnet Geology issues (10 participants)
7.9.2022	Remote meeting	External meeting	Yes: overview of WP5 output	A	Update on manuscript “Digital geodata and models of Europe’s subsurface support the green transition and UN sustainable development goals” and the link between EMODnet Geology and the European Geological Data Structure. Made arrangements for finalization of the manuscript.
12.9.2022	Remote, Teams-meeting	Internal EMODnet 5 Geology meeting between coordination and GTK	No	O	Meeting to discuss matters related to the discontinuation of the Russian subcontract and on plans to subcontract an Azerbaijani organisation.
12.9.2022	Remote, Teams-meeting	Internal EMODnet 5 Geology meeting, WP3 & WP4	No	O	Internal discussions on co-operation with EMODnet Seabed Habitats in relation to mapping of Vulnerable Marine Elements for ICES
15.9.2022	Remote, Teams meeting	EMODnet Geology meeting with ASGMI	No	A	Meeting with Asociación de Servicios de Geología y Minería Iberoamericanos and our partner IGME (Spain) regarding cooperation with Caribbean Sea geological surveys in order to get marine geological data from the Caspian sea area.
20.- 21.9.2022	Remote meeting	EMODnet Buisines Offshore Renewable Energy workshop	Yes	A	Janine Guinan (GSI) presented a showcase of how EMODnet Geology data has been used in context with renewable energy
21.- 22.9.2022	Remote meeting	EMODnet Technical Working Group Meeting	Yes	A	Internal discussions related to the Central Portal.

22.9.2022	Remote, Webex-Meeting	EMODnet-Copernicus Marine Service coastal workshop	No	O	Periodic informative meeting to discuss cooperation opportunities.
29.9.2022	Hybrid meeting, Teams & Otaniemi, Espoo, Finland	Internal EMODnet 5 Geology WP3/GTK Meeting	No	A	Internal discussions related to the seabed erosion deliverable
SUM				O	Total # of meetings organised = 9
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
7.10.2022	Remote Teams meeting	EMODnet Geology 5 steering group meeting	O/A	Discussions of EMODnet Geology issues (10 participants)
17.10.2022	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 (18 participants)
7-11.11.2022	Varna, Bulgaria	EMODnet Geology Project Meeting	O	Discussions on project progress and future steps
8.11.2022	In person	Meeting, back-to-back with the EMODnet Geology project meeting	O	Palaeogeographic reconstruction working group dedicated workshop tagged onto the scheduled partner meeting in November 2022 in Varna, Bulgaria.
November 2022	Varna, Bulgaria	Seabed erosion workshop, in connection with EMODnet Geology project meeting	O	Discussions on seabed erosion deliverable

TBD	Online	Meeting	O	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	O	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.
TBD	Online	Meeting	O	Schedule a meeting with Dr Simon Fitch regards integrating Open Access submerged Landscape Data from the Doggerland and Lost Frontiers projects.

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)
June 8 th 2022	Tweet by @EuroGeoSurveys	World Oceans Day 2022 tweet featuring EMODnet-Geology.	Four retweets, 11 likes.	Twitter

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected

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
July 2022	Journal article	Hollis, J., Bricker, S., Čápková, D., Hinsby, K., Krenmayr, H.G., Negrel, P., Oliveira, D., Pouiadji, E., van Gessel, S., van Heteren, S., Venvik, G. "Pan-European geological data, information, and knowledge for a resilient, sustainable, and collaborative future." <i>European Geologist</i> 53 (2022): 6-19.	-	10.5281/zenodo.6883282	Yes: Pan-European geological data, information, and knowledge for a resilient, sustainable, and collaborative future (researchgate.net)
August 2022	Book chapter	Asch, K., Klump, J., Mathers, S., Kessler, H. (2022): Geology. In: Kresse, W. & Danko, D: Springer Handbook of Geographic Information, 2 nd ed Chapter Geology, in Springer Handbook of Geographic Information 2022	978-3-030-53124-9		N
September 2022	Book	Geological Society of London Special Issue: From Continental Shelf to Slope: Mapping the Ocean Realm	9781786204950		partly

B. Other/non-peer reviewed types of publications (co-)authored in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No

8.6.2022	The Prime Minister's Office's publication (Finland)	Prime Minister's Office, 2022. National Implementation Plan for the UN Decade of Ocean Science (in Finnish). 25 pages. https://urn.fi/URN:ISBN:978-952-383-122-3 The Actions include developing uniformity and usability of marine data flows, where key areas include e.g. cooperation between EMODnet	978-952-383-122-3		Yes,

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		
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		<p>Updates on data products with coverage (WP's 3 and 4) are planned for the second year of the project.</p> <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). The information below is from our Interin report which covers the time until 24.9.2022 (thus also most of Q3/2022)</p> <p>WP3. No updates on the portal yet in this phase. The latest seabed substrate map 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.</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 -</p>

		<p>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: Excellent detail data from mapping campaigns of numerous regions. General physiographic features: rather good coverage with several data gaps</p>
B) Usage of data products in this quarter		<p>Map requests are implicit in WMS stats. The numbers are fluctuating a lot. Generally, the usage goes up around new releases and now when there has not been updates for a longer period usage has dropped. Especially the downloads have gone down because no new data or updates have been added to the portal this, first year of the project. Also, most probably due to summer vacations the usage of WMS and WFS was especially low in Q3. Typically data downloads have not fallen in Q3. It seems that people want to handle the data themselves instead of using the web map viewer.</p> <p>Explanation in general on trends: Our data updates are planned for the second year of the project, which might decrease interest by the end of the first year.</p>
3. Internal and external organisations supplying/approached to supply data and data products within this quarter		No change since last report, except that our Russian partner All-Russia Geological Research Institute (VSEGEI) was excluded from the consortium on 30.8.2022, and is thus not a data provider anymore. No Russian data expected in the future.
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		<p>The geological data have been used by a wide range of disciplines and both public and private organisations. Examples of use are planning of offshore installations such as windfarms, habitat mapping and landslide susceptibility. New use Case: The GARAH project will be published in Q4.</p> <p>The GARAH project has made estimates of conventional and unconventional hydrocarbon resources in the North Sea and estimates of gas hydrate resources around</p>

		Europe. The results of this project can be used in the planning of secure sources of affordable energy and storage of CO2.
8.1. Technical monitoring		Satisfactory both response time and up-time.
9. Visibility & Analytics for web pages		The usage has been fairly constant through the years. There generally is a small dip in usage in the third quarter due to summer vacation.
10. Visibility & Analytics for web sections		The usage has been fairly constant through the years. There generally is a small dip in usage in the third quarter due to summer vacation.
11. Average visit duration for web pages		There is a lot of fluctuation but no general trend.

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.]