



**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 (48 months)**

**Centralisation Phase**

**Quarterly Progress Report (Q3/2023)**

**Reporting Period: 01/07/2023 – 30/09/2023**



## Contents

1. Highlights in this quarter .....	3
2. Identified issues: status and actions taken.....	6
3. Communication assets .....	9
4. Monitoring indicators.....	10
5. Annex: Other documentation attached .....	12

### Disclaimer

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the CINEA or of the European Commission. Neither the CINEA, nor the European Commission, guarantee the accuracy of the data included in this study. Neither the CINEA, the European Commission nor any person acting on the CINEA's or on the European Commission's behalf may be held responsible for the use which may be made of the information.

# 1. Highlights in this quarter

---

**Task 1: Maintain and improve a common method of access to data held in repositories.** As the principal holders of marine geological information, the EMODnet Geology partnership ensures that data from all of the European regional seas are provided to the project. The project is built on information primarily held by the project partners, but also connected to other owners of information by offering data delivery to EMODnet either through the EMODnet Data Ingestion portal or straight to the EMODnet Geology portal.

Work on collection and harmonisation of new datasets and deliveries to the different work packages were mainly scheduled to begin in Q1 or Q2 of 2022. Data deliveries from partner organisations to the WP's started in Q4/2021 and continued until the end of Q2/2023.

**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 were added to the different EMODnet Geology data products and were updated on Central Portal by the end of the second project year 2023.

**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, WMS-C, WFS, and CSW. All project partners can connect directly to the portal PostgreSQL-database and create advanced queries on the data products of the project.

**Task 4: Contribute data, data products and content to a central portal that allows users to find, view and download data and data products.** A lot of new and updated data have been added to our services in this quarter because the first part of the 48 months EMODnet contract ended 24 September 2023.

**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 products available to any desired spaces on the Central Portal.

**Task 6: Ensure the involvement of regional sea conventions.** The RSC issue will be addressed later, 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.** To enhance the performance of the OGC services we have doubled the number of CPUs on the server. We still have a problem with availability of our services (EM-142). It seems that this is caused by memory issues that appear when our landslide susceptibility layer is called. We have planned to change to configuration of this layer but because of the work pressure at the end of the past contract we did not have time to implement it yet.

**Task 9: Maintain the existing thematic web portal for a maximum of six months from the start of the projects.** The original thematic portal has been working for the last nine months and is still running. All calls are redirected to the Central Portal but we still keep the original web viewer for testing purposes. The database and web services work and are maintained as before.

### **Highlights of the different Workpackages**

**WP1 – Project management.** During the last quarter of the second project year our data products were updated, or completely new products were released. Final report and invoice of balance were submitted on time 29 September 2023.

EMODnet Geology and Asociación de Servicios de Geología y Minería Iberoamericanos (ASGMI) arranged an EMODnet promotion meeting in Santo Domingo, the Dominican Republic on 26-27 July 2023 to contact geological surveys from the Caribbean Sea. We were seeking for a solution of subcontracting a suitable party in the Caribbean Sea area.

**WP2 – Geological data specification and sourcing.** The task was completed by month 3, additional updates were added during months 4-22 and used in final updates and/or new data products by the end of the first part of the contract by 24 September 2023.

**WP3 – Seabed substrate.** Seabed substrate information (high resolution/multiscale, 1:100k, 1:250k and 1:1M), Sedimentation rates of recent sediments and Erosion rates for pilot areas were finalised and delivered to the EMODnet Central Portal by 24 September 2023. Case study “Applying novel machine learning methods to expand sediment composition and sedimentation rate maps to new areas of the European continental shelf” was finalised and reported by the end of the first part of the contract.

**WP4 – Seafloor geology.** All WP4 data products (pre-Quaternary, Quaternary, Geomorphology) were updated and published on the EMODnet Central Portal by 24 September 2023.

**WP5 – Coastal behaviour.** WP5 had data product updates during previous quarters and during Q3 WP5 had interaction with other initiatives such as meeting on assessment of coastline change using satellite EO, with representatives of EMODnet Geology WP5, GSEU, and the Earth Observation and Marine Geology Expert Groups of EuroGeoSurveys.

**WP6 – Geological events and probabilities.** WP6 harmonised data products have been validated and delivered to WP9 as layers relative to each feature (landslide, volcano, etc.) and to each geometry (polygon, line, point). The data products were updated and published on the EMODnet Central Portal by 24 September 2023.

**WP7 – Minerals.** Final WP7 data was delivered to the EMODnet Central Portal by 24 September 2023. This includes e.g. new harmonised data layers for Marine Hydrocarbons based on sub deposit types Oil, Condensate, Gas, Shale Gas, Coal and for Marine Aggregates based on sub deposit types Sand, Gravel, Pebbles/cobbles, Filling Sand.

**WP8 – Submerged landscapes.** WP8 had its data products updated during previous quarters with minor final updates early in Q3/2023.

**WP9 – Project analysis and sustainability.** WP9 has been busy updating and adding new data from EMODnet Geology WPs to our OGC web services and communicate these changes with the Central Portal so that they could change the map viewer. Until now, geophysics has only been presented as lines. Geophysical data are now sometimes displayed as polygons in cases where the actual location is confidential.

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
<b>M1: Thematic data products updated T0+6 months</b>	WP9, all WP's	25.03.2022	Delivered	25.03.2022	Our data products were ready for uploading to CP according to plan.
<b>M2: Data specification and sourcing ready</b>	All WP's	24.09.2022	Delivered	-	-
<b>M3: Interim report and evaluation of progress</b>	WP1&WP9	24.09.2022	Delivered	22.09.2022	-
<b>D1.1-8: Quarterly reports 3/2021, 4/2021, 1/2022, 2/2022, 3/2022, 4/2022, 1/2023, 2/2023, 3/2023, 4/2023, 1/2024, 2/2024, 3/2024, 4/2024, 1/2025, 2/2025</b>	WP1/all	15.10.2021, 15.01.2022, 15.04.2022, 15.07.2022, 15.10.2022, 15.02.2023, 15.04.2023 15.07.2023	Delivered (and accepted)	15.10.2021, 15.01.2022, 14.04.2022, 15.07.2022, 14.10.2022, 15.02.2023, 11.04.2023 14.07.2023	Q4/2022 report postponed by CINEA to 15.02.23
<b>D1.9: Quarterly report</b>	WP1/all	15.10.2023	This Q report	13.10.2023	-
<b>D2.1: Interim report</b>	WP1/all	24.9.2022	Delivered (and accepted)	22.9.2022	-
<b>D2.2: Final report</b>	WP1/all	24.9.2023 + 60d	Delivered	29.09.2023	-
<b>D3.1: Thematic data products/maps updated on Central portal</b>	WP9/WP1/all	24.03.2022	Delivered	-	Our data products were ready for uploading to CP according to plan
<b>D3.2: Final data products/maps available</b>	All WP's	24.9.2023	Delivered	24.09.2023	

## 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
EM-142 - Geology Quality of Service Monitoring	In Progress	Memory issues on EMODnet Geology Server. Raster map seems to be the problem		
EM-394 - Geology review of the new CP map viewer	In Review	Waiting for response from the Central Portal		
EM-525 - Updating of EMODnet Geology - Seafloor Geology layers in the European Atlas of the Seas	In Progress	Waiting for response from the Central Portal		
EM-529 - Geology - EMODnet Catalogue Tags	In Review	Waiting for response from the Central Portal		
EM-701 - Broken Links in EMODnet Viewer	Done			11-08-2023 11:57
EM-712 - The title in the EMODnet product catalogue is repeated several times	Done			13-07-2023 11:58
EM-809 - Geology: link + redirect	Done			11-08-2023 10:56
EM-817 - TWG13 Action 17 Thematics to provide helpdesk email	Done			18-07-2023 10:44
EM-85 - Geology - Web Services MetadataUrl and DataUrl fields	Done			24-08-2023 13:56
EM-862 - Geology WMS service is running out of memory	Pending	Resolved in Q4/2023		01-10-2023 16:11
EMODNET-1607 - EMODNet seabed substrate	Done			within 2d 8h
EMODNET-1666 - Issue with EMODNet Geology WFS service	Done			within 2d 8h
EMODNET-1689 - EMODnet Map Viewer	Done			within 3d

Secretariat Assessment of Q1 report: The Secretariat notes that 0% of the data is restricted, but that no publication license is provided. Publication licenses are of vital importance to EMODnet usability. Can Geology try to supply publication licenses in the future?	Pending	We are working on this issue. For the moment we are collecting licence information from partners, but this task takes some time, and it might be finalized during end of 2023.		
---	---------	--	--	--

### 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
Data availability & harmonisation from the Caribbean Sea	Pending	The negotiations were ongoing to establish a contract between EMODnet Geology and a suitable party, which would enable a collaboration with Caribbean geological surveys.		
Replace red-yellow-green with shades of blue to move away from intuitive good/bad in WP5 migration products	Pending (new)	Assign new colour scale	Q4	
Identified issue (projection) with WP8 database – some data not displayed/downloadable on portal.	In Progress	Data expert @BGS to rectify. Liaison with WP9 to reschedule delivery.	Deadline postponed (Q4)	
EM-759 - Filter option in some Geology layers are not displayed properly	Done			07-07-2023 10:10
EM-775 - Revision of attributes and filters for geophysic and borehole indices	In Review			
EM-780 - Third level menu for Landslide Susceptibility	Done			13-07-2023 11:29
EM-797 - Problem with filter for layers with more filter criteria	In Progress			
EM-799 - Diagram that shows the position of the shoreline through time	In Progress			

EM-844 - new layers and updates to the sub-theme Geological events and probabilities	In Review			
EM-846 - New attributes to seabed substrate datasets	Done			12-09-2023 14:28
EM-850 - new layer: cp_wp3_seabed_erosion	Done			20-09-2023 10:41
EM-857 - New layers to the Marine Minerals subtheme	In Review			
EM-860 - Updates and additions of layers in the Sea-floor geology subtheme (WP4)	Done			



### 3. Communication assets

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
-					

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
-					

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

## 4. 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	-	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	-	This is described under usage of data products
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	-	The first part of the EMODnet Geology contract ended 24 September 2023. New data and data products were added around this date and some adjustments are still needed both from EMODnet Geology and the Central Portal. To be able to compare with the older statistics the list of products here is the same as the previous quarter. The new products will be added in the next quarterly report.
B) Usage of data products in this quarter	The log files at the gateway server at GEUS were analysed. (The number of specific keywords were counted)	In connection with the end of the first part of EMODnet Geology contract, new updated datasets were published and this has led to a big increase in the number of downloads. The used of WFS and WMS services has decreased compared to previous quarter and this is explained by holiday season.
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	-	No change in organisations supplying data/data products since last report. EMODnet Geology and ASGMI arranged an EMODnet promotion meeting in July 2023 to find a solution of subcontracting a suitable party in the Caribbean Sea area.

5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	The daily number of page views has dropped in the holiday season
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	The usage has dropped this quarter due to the holiday season

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

## 5. Annex: Other documentation attached

---