



# EMODnet



European Marine  
Observation and  
Data Network

## EMODnet Thematic Lot n° 1 - Geology

**EASME/EMFF/2016/1.3.1.2 - Lot 1/SI2.750862**

**Start date of the project: 12/04/2017- (24 months)**

**EMODnet Phase III – Quarterly Progress Report (5/8)**

**Reporting Period: 01/04/2018 – 30/06/2018**



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## Disclaimer

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# 1 Highlights during the reporting period

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*Provide a short summary of the key achievements and/or events of interest to a wider audience within this reporting period you wish to highlight. **Please make sure that progress in each of the tasks specified in Section 1.4.1 of the Tender Specifications is covered. For those tasks not experiencing significant progress, please state so.** In addition, you can (but not required) also consider the indicators or any other of the reporting sections.*

## Tasks specified in Section 1.4.1 of the Tender Specifications

### Task 1: Develop a common method of access to data held in repositories:

- In the current “data discovery” phase, we now have all partners delivering entity index contributions at various level of maturity. Regarding borehole entity indexes some (6) deliver flat files, others (7) expose their indexes as OGC web services. The rest are relying on EMODnet Geology to harvest their indexes from EMODnet HA and GeoSeas contributions. We are currently harmonising borehole indexes into the adopted EPOS standard format. The main reason for doing central harmonisation is sustainability. Harmonization by partners themselves tend to become unreliable and static after project funding ends. Using central harmonization we can connect directly to partner’s existing data structures, infrastructure, and services and repeat the harmonization whenever needed. Regarding geophysical entity indexes, 9 partners deliver flat files, 4 deliver using OGC web services. The rest are either not ready to deliver or refer to GeoSeas, which currently doesn’t offer their geophysical index as WFS.

### Task 2: Construct products from one or more data sources that provide users with information about the distribution of parameters in time and space:

- N/A

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

- All data products are listed on the “Products” page with links and examples to web services, data download and online Web-GIS. These options are by identified use-cases selected to be the most efficient way in helping users access our products and services, whether it is desktop GIS software, handheld devices, large-scale data projects or casual data browsing. We are making our data products cover even more use-cases by allowing registered users online access to a read-only database (PostgreSQL). This approach is to our knowledge without precedent but could for some users prove to be a highly efficient way to access and integrate EMODnet Geology data into their existing environment. Regarding metadata, we have a running service (GeoNetwork) enrolled into nightly harvesting by EMODnet main portal and EGDI MICKA. This way, users browsing both EMODnet main portal and EGDI will easily discover our data products.

### Task 4: Develop a web portal allowing users to find, visualise and download data:

- The web portal was constructed and up and running during the first three months of the project, and we are continuously extending the functionality and usability of the portal. Data products are now well described and made easily available for both download, online map view, and as web services. On request, we can even offer users access to a PostgreSQL database where all data are available for SQL analysis. Most recently, we upgraded the layout and styling to align with the other EMODnet portals.

### Task 5: Ensure the involvement of regional sea conventions:

- In spite of repeated contact trials to the different regional sea conventions (RSC’s) we haven’t yet succeeded to meet them either at our project meetings or their offices, but as we now have contact with the Barcelona Convention we will do our best to meet with them as soon as possible. Invitations to our next project meeting will be sent out to all RSC’s. Once we have contact with them we will see what they need from us.

**Task 6: Facilitate interoperability with data distributed by non-EU organisations:**

- An analysis on interoperability with data (standards and protocols) distributed by non-EU organisations is in progress. Now, we are co-operating with Geoscience Australia after a shared session called “From Continental Shelf to Slope – Mapping the Oceanic Realm” at the IUGS Resources for Future Generations Conference (Vancouver, BC, Canada, June 2018). We will also approach the ambitious Seabed 2030 project by GEBCO and Nippon Foundation in order try to add a geological component to their agenda.

**Task 7: Install a process to monitor performance and deal with user feedback:**

- We are now linked to a monitoring system hosted by the main portal (Piwik/Matomo). Here we can login and extract performance and user statistics. The portal offer users the possibility to write feedback. We receive a few each month and answer within 1-2 working days in case of questions. We participate in all statistical initiatives put forward by the EMODnet Secretariat and Steering Committee.

**Task 8: Operate a help desk offering support to users:**

- We continuously run our help desk according to rules set in the Tender Specifications. We receive on average four support questions per month which are handled within 1-2 working days.

**Highlights of the different workpackages**

- WP3, Sea-bed Substrate: Partners have continued to harmonise their high resolution (scale 1:100 000 or more detailed) seabed substrate data and by 29.06.2018 altogether 21 partners have provided their harmonised seabed substrate data to GTK. From these, 12 partners have provided 1:100 000 and 16 partners even more detailed (1: 1500–1:70 000) data.
- WP3. New guidelines for sedimentation rate delivery have been provided to partners.
- WP4, Sea-floor Geology: New vector and raster data have been received and integrated for the geomorphology, pre-Quaternary and Quaternary theme layers. See also indicator 1.1 for the Pre-Quaternary. For the geomorphology and Quaternary we are working on the semantic transformation and harmonisation, so this is not taken into account yet.
- WP4. All data are constantly in the process of being assembled, checked, and in some cases modified according to the guidelines.
- WP5, Coastal behaviour: The WP has completed the analysis of satellite images of the pan-European coastline using an Automated EO Shoreline detection script. The output of this analysis provides the decadal rate of coastline migration and direction, as well as the associated uncertainty, for 546.448 transects covering the entire European coastline. It fills all gaps in the final product of the previous EMODnet phase, but needs to be validated for non-sandy coastlines during the next 6 months before publication on the EMODnet portal. Project partners will conduct this validation using their national field data, selecting locations for which these field data are best suited.
- WP6, Geological events and probabilities: Test of mathematical models to set a susceptibility analysis is progressing.
- WP6. Harmonization of partners deliveries has started
- WP7, Minerals: Data submissions have increased since last reporting period. With greater attention to details, more attribution has been submitted for Marine Minerals. This will result in a better product once all partners have delivered their national updated datasets.
- WP8, Submerged landscapes: Templates for the WP8 GIS shape files completed and delivered to all partners.
- WP8. First Submerged landscapes GIS shape files delivered to BGS.

## 2 Challenges encountered during the reporting period

*Provide an overview of the main challenges encountered during the reporting period and the measures taken to address them, including those related to technical and data provision issues.*

Main challenge	Measures taken
<b>WP1=Project management.</b> Ensure the involvement of regional sea conventions	The coordination has contacted the different RSC's a multitude of times almost without any response. The Med Sea Convention has, however, responded positively and hopefully we'll get in good contact with them soon.
<b>WP3=Seabed substrates.</b> The heterogenic quality of the received data challenge the harmonization process and data product combination.	Further instructions have been given if needed and emerged issues have been discussed and resolved together with the partner/data provider in question.
<b>WP5=Coastal behaviour.</b> Current set of entry terms describing coastal type is incomplete and definitions are commonly imprecise.	For the time being, we are building and optimizing an updated set for internal use. In time, these will be communicated with INSPIRE and other vocabulary groups working on uniform definitions available through dedicated servers.
<b>WP6= Geological events and probabilities.</b> Data at the resolution foreseen in this phase may not be available in all Partner countries.	Products of the current phase will be displayed separately from previous products of lower resolution, which will still be available on the EMODnet Geology Portal
<b>WP9= Data management, web portal and services.</b> Producing performance indicators required us to centralise the data products on one server running CSW, WMS, and WFS using GeoNetwork and GeoServer. This setup continuously require much more work than anticipated.  Building a full WP9 geophysical entity index challenged by limited access to GeoSeas/SeaDataNet services.	All phase II data products re-validated and re-mastered in terms of contents, metadata, and legends (SLD). All contents and metadata moved to a relational database. Legends stored on disk, since GeoServer does not support database storage.  We continuously raise the issue to partners and contacts involved in SeaDataNet but no progress so far. Access is still limited to point requests, which are not usable for creating a data product in WP9 (area download).

## 3 User Feedback

List any useful feedback you received on your portal, your activities or those of other EMODnet projects/activities. Also provide any suggestions you have received for EMODnet case studies and/or future products/activities/events.

Date	Organisation	Type of user feedback (e.g. technical, case study, etc.)	Response time
<b>2.5. 2018</b>	*****	Dear, I want to download the "Coastal behaviour" map, but the link provided to me through email does not work. Could you help me out? Many thanks in advance! N	24 hrs
<b>14.5. 2018</b>	*****	This Interreg North Sea Region project wants to use WP3 seabed-sediment data to quantify the contribution of shipping to submarine noise in light of its impact on marine life	Directly (conference call), with plan for follow-up actions
<b>May 2018</b>	*****	Request of information on marine geology to be displayed on Geotouristic itineraries	
<b>25.5. 2018</b>	*****	Metadatabase not working	24 hrs
<b>June 2018</b>	*****	Email: "As a small consultancy business we rely on the availability of high quality environmental data to offer noise impact assessments to the marine construction industry. To generate realistic noise modelling we need to account for both depth (bathymetry), sediment properties (geology) and water properties. If these were not available to us, we'd either have to be over-cautious (limiting to development) or generate the data ourselves (prohibitively costly – limiting competition in the sector). Thus the public access to databases like EMODnet enable a market for SMEs to competitively offer high quality services that were previously unthinkable for small projects. This benefits both the environment and the industry".	
<b>6.6. 2018</b>	*****	WMS not working	24 hrs
<b>25.6.2018</b>	*****	Help offered	24 hrs

## 4 Meetings held/attended since last report

Date	Type event (meeting, training (workshop), etc.)	Attended (A) / Organised (O)	Short description and main results (# participants, agreements made, etc.)
16.-17.4. 2018	EMODnet Data Ingestion meeting Barcelona, Spain	A	EMODnet 3 Geology WP3 representatives (*****) participated in the EMODnet Data Ingestion meeting in Barcelona, Spain, April 2018.
4.5. 2018	Workshop	A	Italian Department of Civil Protection (with contributions by INGV, CNR and Universities). Summary of the knowledge on submerged volcanoes and potential hazard scenarios – Public Institutions – 50 attendees. WP6.
8.5. 2018	Workshop on construction aggregates	A	Main intention with the workshop was to demonstrate how Material Flow Analysis (MFA) information on construction aggregate stocks, production, use and recycling is a necessity for developing resource supply models. The ca. 20 participants from Norway, Denmark and the NL discussed how quantitative but not-for-purpose information presently available (e.g. through EMODnet WP7) could serve MFA and help prove the feasibility of new H2020 applications. WP5.
17.5.2018	EMODnet 3 Geology; GTK internal meeting Espoo, Finland	O	EMODnet 3 Geology, GTK internal meeting at GTK, Espoo (*****)
22.5. 2018	Workshop	A	Facing complexity: marine ecosystems Integrated, holistic and ecosystem approaches to marine environments – Research Institution – 50 attendees. WP6.
1.6. 2018	Symposium on Transnational and Integrated Long-term Marine Exploitation Strategies	O	The symposium, attended by ca. 125 people from government, industry and academia, highlighted the results of a four-year project on marine sand and gravel in the Belgian and Dutch North Sea. EMODnet project partners RBINS and TNO introduced the first transnational voxel (3D-pixel) model of the North Sea subsurface, showing presence as well as likelihood of resources. WP5.
1.6. 2018	Marine sands as a precious resource conference	A	Project partners presented work completed by WP7
18-21.6. 2018	conference	A	Conference Resourcing Future Generations (RFG) in Vancouver, BC, Canada. Attendance by WP1, WP3, WP4, WP6, WP7.
18-21.6. 2018	Session at conference	O	Session From Continental Shelf to Slope- Mapping the Oceanic Realm at RFG. All WP's.
21.06.18	Conference	A	Resourcing Future Generations Conference, Vancouver. WP leaders presented WP7 framework and data products.
29.6.2018	Ireland's Marine Economic Forum, Our Ocean Wealth	A	WP leader discussed project and WP outputs with delegates. WP7.
<b>SUM of O</b>		<b>3</b>	<b>(Total # of meetings organised)</b>
<b>SUM of A</b>		<b>8</b>	<b>(Total # of meetings attended)</b>

## 5 Outreach and communication activities

Please list all the relevant communication/outreach activities or products you have developed/executed during this period (including presentations, lectures, trainings, demonstrations, workshops, etc., and development of communication materials such as brochures, videos, press releases, newsletters, etc.). At the bottom of the table, provide a total number for every type of communication activity you have developed/executed (e.g. total # of press releases, total # of presentations given, etc.).

Table: Communication activities.

Date	Communication action/material	Short description (of the material, title, ...) and/or link to the activity	Main results (# participants, # views, # press clippings, etc.)
23.5. 2018	Stakeholder questionnaire	A questionnaire on usage and/or willingness to submit data to EMODnet Geology and/or EMODnet in general to stakeholders throughout Europe was distributed to all partners in 30 European countries.	Still in progress. Number of "hits" still not known, but a few of interesting answers have been received already.
22.5. 2018	USA-Italy bilateral research proposal	Communication of scientific research results towards improved natural disasters resilience induced by geohazards	40 participants
1.6. 2018	Poster presentation	Mapping marine minerals in Europe	
12.6. 2018	Geological Survey of Italy Publication - Annual report 2017	Summary of the EMODnet Geology Project since its start to the present phase, within the activities of the Marine Geology Section of the Geological Survey of Italy	
20.6.2018	presentation	Presentation "The Precious Mosaic of Seafloor Data: Challenges, Chances and the EMODnet-Project" at international RFG conference	20 – 30 participants, information about the project and its data related challenges
21.6.2018	presentation	Presentation "EMODNET Sea Floor Geology: Integrating Europe's Marine Geology Across EEZ-Boundaries" at internationale RFG Conference	Ca 15 participants from 4 continents, information about the project and its data related challenges.
21.6.2018	Session organisation	IUGS/EMODnet Session organisation (Session From Continental Shelf to Slope - Mapping the Oceanic Realm).	The Geological Society of London elected this session as worthwhile to set up a Special issue of the session contribution. Contributions from Northamerica, Europe, Australia and Asia. Discussion of a IUGS/EMODnet geology initiative/activity on cross-disciplinary marine geoscience mapping
21.6. 2018	Oral presentation	Translating seabed data into informative marine mineral maps	Ca. 20 participants

<b>2.7. 2018</b>	Press-release	Starting in Finland on 8.6. a press-release on first years progress of EMODnet Geology. The press-release was distributed on 2. July to all partners in 30 countries where it's been translated into national languages and published.	Still in progress. Number of publishings, press clips, etc. yet not known.
<b>SUM ...</b>	Press releases	Total of press releases	<b>(Total # not yet known)</b>
<b>SUM ...</b>	Presentations	Oral and poster presentations	<b>(4)</b>
<b>SUM ...</b>	Session organisation	RFG2018 session	<b>(1)</b>
<b>SUM ...</b>	Others	Stakeholder questionnaire and USA-Italy bilateral research proposal	<b>(2)</b>

*Relevant scientific and/or popular publications (scientific papers, book chapters, conference papers, ...) you published or of which you know they have been published using/referring to EMODnet data or data products during this reporting period must also be reported here.*

*Table: List of known publications using EMODnet data or data products.*

<b>Date</b>	<b>Name of journal, conference, ...</b>	<b>Publication title</b>	<b>Authors</b>	<b>Organisation(s)</b>
<b>1.6. 2018</b>	Poster presentation	Mapping marine minerals in Europe		GSI, Geological Survey of Ireland
<b>20.06.2018</b>	RFG2018	The Precious Mosaic of Seafloor Data: Challenges, Chances and the EMODnet-Project	Asch, Kristine.	BGR, Geological Survey of Germany
<b>21.06.2018</b>	RFG2018	EMODNET Sea Floor Geology: Integrating Europe's Marine Geology Across EEZ-Boundaries"	Asch, Kristine	BGR, Geological Survey of Germany
<b>21.06.2018</b>	RFG2018	Discover Europe's seabed geology - The EMODnet concept of uniform collection and harmonization of marine data	Vallius. Henry	GTK, Geological Survey of Finland
<b>21.06.2018</b>	RFG2018	EMODnet Geology translating seabed data into informative marine mineral maps	Maria Judge, Koen Verbruggen, Charise McKeon	GSI, Geological Survey of Ireland
<b>21.06.2018</b>	RFG2018	Revealing the secrets of Norway's seafloor	Reidulv Bøe, LiljaRun Bjarnadóttir - Sigríð Elvenes	NGU, Geological Survey of Norway
<b>2018</b>	Marine Geology	Mapping mud content and median grain-size of North Sea sediments – A geostatistical approach	Böckelmann et. al.	

## 6 Annex: Other documentation attached

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

## 7 New monitoring indicators

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*Please consult and fill in the designated excel template.*