



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n° 1 - Geology

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

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EMODnet Phase III – Quarterly Progress Report (6/8)

Reporting Period: 01/07/2018 – 30/09/2018



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1 Highlights during the reporting period

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 continue to receive entity index contributions at various level of maturity. Regarding borehole entity indexes some (9) deliver flat files, others (7) expose their indexes as OGC web services. The rest are relying on EMODnet Geology to harvest their indexes from previous 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.

Feedback from users indicate that the term borehole is confusing when used for grab samples. It has thus been decided to separate grab samples from the borehole index when exposing the index online.

Regarding geophysical entity indexes, 8 partners deliver flat files, 5 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. 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. 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. 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 to try to add a geological component to their agenda. They will sponsor a side event on seafloor mapping during the AGU fall meeting in Washington 10-14 December, which EMODnet Geology will attend.

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 offers 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, Seabed substrates: Partners have continued to harmonise their high resolution (scale 1:100 000 or more detailed) seabed substrate data and by 30.09.2018 altogether 22 partners have provided their harmonised seabed substrate data to GTK. From these, 16 partners have provided 1:100 000 and 16 partners even more detailed (1: 1500–1:70 000) data.

WP4, Sea-floor Geology: New vector and raster data have been received and integrated for the geomorphology, pre-Quaternary and Quaternary theme layers. In particular considerable progress has been made in the Quaternary and geomorphology themes. All data are constantly in the process of being assembled, checked, and in some cases modified according to the guidelines.

WP4: Organisation of a harmonisation workshop during the autumn project meeting in Shengjin, Albania. Good progress in harmonisation and presentation of excellent result maps in particular for the WP4 geomorphology theme. Considerable progress has been made in the coverage work and harmonisation in the areas of the Western Baltic Sea, The Adriatic Sea (Base of Pliocene), Western Mediterranean Sea and the SW Seas (Atlantic). The new geomorphology vocabulary has been further optimized with new terms to describe the geomorphology of the European Seas.

WP5, Coastal behaviour: The analysis of satellite images of the pan-European coastline with > 500.000 transects covering the entire European coastline is in good progress.

WP6, Geological events and probabilities: Updates and additional available data have been delivered by Partners; Harmonization of Partners deliveries is progressing; A server with R Studio Server installed is now available, which will speed up the processing of the large data sets to be elaborated for probability/susceptibility assessment

WP7, Minerals: Updates to 92% of data submitted during EMODnet Geology 2. Additional information has also been submitted, with Ukraine submitting a new mineral type Sapropel. This submission has extended the catalogue of marine mineral types to 12. Over the summer period trialing the development of minerals potential maps using data submitted on aggregates by the French. Initial trials have produced great results and it is our intention to provide the facility to progress with rolling out this approach if an extension of the project is granted. In this instance, terminology will be linked to a standard code-list. Probably the code-list created by the Minerals4EU project which incorporates minerals dictionaries from both INSPIRE and OGC will be utilised.

WP7, Minerals: Cooperation with three new GeoERA projects under the Raw Materials theme started.

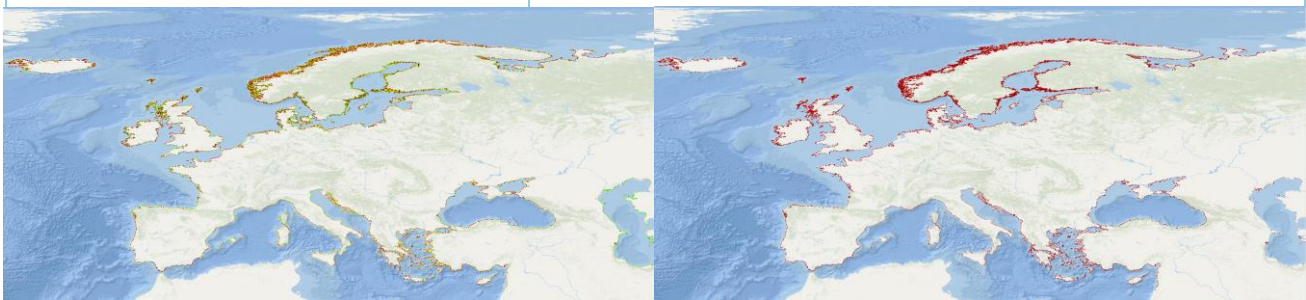
WP8, Submerged landscapes: Good progress with collection of the project partner’s submerged landscapes features as GIS shape files, contributions now received from 14 partners. This WP started only 18 months ago, so collection continues, but first products are approaching. The task guide of WP8 was updated according to discussions during the meetings in Shengjin, Albania 25-27.9.

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.

[Please, provide information in the table.]

Main challenge - WP5 Coastal behaviour	Measures taken
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.
Mapping at scales finer than 1:500,000 is rarely done for coastline behaviour.	The country with the highest density of field measurements is The Netherlands. Here, spacing of monitoring transects is 250 m, which corresponds to a mapping scale of 1:500,000. The pan-European satellite analysis, with a transect spacing of 500 m, corresponds to a mapping scale of 1:1,000,000. Although it would be possible in principle to redo the satellite analysis with smaller transect spacing (50 m would be good enough for 1:100,000), the associated added value would be small and the performance of the data product in the portal would suffer.
Visualizing results at a pan-European scale (ca. 1:20,000,000 in a single image) requires data aggregation because many measurements are overlapping at this scale, favouring those behaviour types plotted on top (see figure below).	For the <u>satellite</u> data, we are currently testing application of a moving average that calculates point values on the basis of 21 adjacent points (a midpoint and ten points on each side), smoothing the short-distance variability that dominates the present view. As part of the <u>field</u> data are non-numeric (erosion or accretion only indicated qualitatively), this approach is not possible for the field observations. A commentary on the portal will highlight this issue.



Main challenge – WP6 Geological events and probabilities	Measures taken
Difficult harmonization among data collected by different methods	Proceed with harmonization through continuous exchange, feedback and validation by Partners
Information gaps at the more detailed scale required by the current phase of the Project	Further literature search in order to complement layers with published data as much as possible

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
July 2018 6-25,	Joint Monitoring Programme for Ambient Noise North Sea (JOMOPANS)	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	As part of follow-up actions of a conference call, it was concluded that JOMOPANS requires median sand size in addition to Folk class as mapped in EMODnet Geology WP3. It is obvious that during future phases of EMODnet Geology median sand size should be included in addition to the Folk classes, in such cases where data is available, such as in sand-dominated areas like the North Sea.
2018.08.31	Private	Feedback	n/a (general opinion)
July 2018	IRWIN CARR Consulting	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.	2 Days

4 Meetings held/attended since last report

List here the internal and external meetings held/participated by the contractant (e.g. meeting, conference, training (workshop), etc.) since the last quarterly report. Please add a short description on the meeting as well as the nature and volume of the audience. At the bottom of the table, provide the total number of events organised and events participated.

[Please, provide information in the table.]

Table: Meetings organised and attended.

Date	Location	Type event (meeting, training (workshop), etc.)	Attended (A) / Organised (O)	Short description and main results (# participants, agreements made, etc.)
3.7.2018	Brussels	GeoERA Kick-off meeting	A	Presentation of EMODnet Geology (coordinator). Almost 100 participants.
13.7.2018	Rotterdam, Netherlands	Theme Day	A (keynote lecture)	The theme day, attended by ca. 40 people from government, industry and academia, addressed mud dynamics in the Southern North Sea and its interaction with ecological processes. The need for transnational seabed data such as those in EMODnet was acknowledged, especially when coupled with future permanent monitoring stations in the North Sea.
21.8.2018	GTK, Espoo, Finland	EMODnet 3 Geology; GTK internal meeting Espoo, Finland	O	EMODnet Geology was presented to the entire GeoERA community by Henry Vallius, project Coordinator. The Minerals WP and framework was presented to the MINDeSEA project by WP leader Maria Judge.
2-7.9.2018	Napoli, Italy	conference	A	Cities on Volcanoes 10 - Development of volcanology, volcanic hazard, risk and resilience (850 participants)
7.9.2018	Skype	Communication meeting	A	
10.9.2018	Rome, Italy	meeting at ISPRA headquarters	O	Earth Science Working Group of the USA-Italy bilateral programme - Marine geology is one of the issues tackled by the group in view of future cooperation, focusing on potential assessment of geological events probabilities

12-14.09.2018	Catania, Italy	conference	A	Geosciences for the environment, natural hazard and cultural heritage (ca. 1000 participants)
13.9.2018	Copenhagen	Portal quality review	A	List of recommended improvements
25.9.2018	Shengjin, Albania	EMODnet 3 Geology Steering Group meeting	A	EMODnet 3 Geology work package leaders. All issues regarding the last 6 months of the project. 10 participants.
25-27.9.2018	Shengjin, Albania	EMODnet 3 Geology project meeting	O/A	EMODnet 3 Geology project meeting. All issues regarding the last 6 months of the project. 75 participants.
26.09.2018	Shengjin, Albania	WP 4 Harmonization workshop	O/A	Organization, realization and lead. Issues regarding the last 6 months of the project. 75 participants.
SUM			O	Total # of meetings organised = 4
SUM			A	Total # of meetings attended = 9

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.).

[Please, provide information in the table.]

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.)
	Short contribution to the IUGS E-Bulletin, July 2018 issue (No. 144)	Short summary of the EMODnet/IUGS session at RFG2018: From Continent to Slope: Mapping the Oceanic Realm http://iugs.org/uploads/E-Bulletin/IUGS-E-bulletin-July-144.pdf	Published on IUGS web site, sent to all IUGS commissions, affiliated and adhering organisations and other bodies
4-7.9.2018	Resumos do IX Simpósio MIA2018, Coimbra	<i>A nova cartografia geológica digital da Margem Ibérico-Atlântica: O projeto EMODnet-Geology</i>	The new digital geological maps of the Iberian Atlantic Margin: The EMODnet-Geology Project. Symposium presentation
24.9.2018	EMODnet Geology on Albanian TV News	An Albanian TV channel interviewed the EMODnet Geology coordinator Henry Vallius, the Secretary General of the Eurogeosurveys S S, and our host from the Albanian Geological Survey S M for evening news. The same news flash was distributed to other channels as well and sent out on the other channels the next day.	Great visibility in Albania. The video clip was also copied to the home page of the EMODnet Geology portal.
SUM ...	short paper		Total # of 1
SUM ...	presentation		Total # of 1
SUM ...	TV news flash		Total # of 1

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.

No scientific and/or popular publications published in this reporting period, but many scientific papers are in preparation, planned to be submitted next spring to the Geological Society of London Special Publication (From Continental Shelf to Slope - Mapping the Oceanic Realm) as well as Quarterly Journal of Engineering Geology and Hydrogeology (Thematic Issue, Mapping the Geology and Geomorphology of the European Seas). Additional paper(s) will be published in a Special Issue of Geosciences (Geological Seafloor Mapping)

6 Annex: Other documentation attached

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

7 New monitoring indicators

Please consult and fill in the designated excel template.