



## EMODnet Thematic Lot n° 2 - Geology

Bi-monthly Report

Reporting Period: 01/01/2014 – 3/03/2014

Date: 11/03/2014

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# 1. Highlights in this 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 – this can be based on the indicators or any other of the reporting sections.*

*[Provide a bullet list - maximum 5 bullets]*

*EMODnet-Geology Kick-off Meeting held at the offices of the Instituto Português do Mar e da Atmosfera in Lisbon, Portugal on 21-22 January 2014.*

*Meeting attended by representatives from 31 of the 36 partner organisations (55 people) and the Coordinator of the EMODnet Physical Habitats lot.*

*Workpackage 2, Geological data specification and sourcing, to identify primary datasets that will be used to compile the EMODnet-Geology Project outputs was completed.*

*Presentations on EMODnet-Geology submitted to two sessions at the European Geosciences Union (EGU) Conference in Vienna in April/May 2014. (Stevenson et al and Ullanen et al).*

## 2. Meetings held since last report

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List here the meetings held since the last bi-monthly report, if relevant add short description

[Provide information in table - Maximum 1 page]

Date	Location	Topic	Short Description
21-22 January 2014	Instituto Português do Mar e da Atmosfera (IPMA), Lisbon, Portugal.	Project Kick-off Meeting.	Meeting attended by representatives from 31 of the 36 partner organisations (55 participants), the Co-ordinator of the EMODnet Physical Habitats lot and the Co-ordinator of the Italian MAGIC project (Geohazards).

### 3. Work package updates

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*Using the work package as a header list here the activities that occurred since the last bi-monthly report. If there was no activity to report leave the section blank.*

*[Provide information - Maximum 1/2 page per workpackage]*

#### ***WP1 – Project Management.***

Project Kick-off Meeting organised in Lisbon, Portugal on 21-22 January 2014. Overall project aims, contractual and financial information was presented, followed by descriptions of each Workpackage by the WP leaders and their experiences from the preparatory phase of EMODnet. Partners contributing data and information to the project each presented their proposed input to each Workpackage. Sub-contracts with relevant partners were concluded during the reporting period and arrangements to disperse pre-financing were put in place. A Stevenson attended the MODEG meeting in Ostend on

#### ***WP2 – Geological data specification and sourcing.***

The first three months of the project (October 16 2013 to January 16 2014) were focussed on identifying primary datasets to be used during the EMODnet-Geology Project. This involved a comprehensive audit and evaluation of national geological information held by the project partners that can contribute to the 1:250,000 maps. These inventories were presented at the Lisbon meeting on 21-22 January and will be summarised in a written report on WP2 activities.

#### ***WP3. Sea-bed substrate.***

The objective of WP3 is to compile and harmonise all available sea-bed substrate information at a scale of 1:250,000 and to acquire information on the rate of accumulation and sedimentation on the seafloor. Information on Quaternary geology will be compiled by the WP4 leader to integrate both bedrock and Quaternary geology into the same WP. Links with the SPLASHCOS project are ongoing – A Stevenson is on a European Marine Board Working Group on submerged landscapes, which is derived from the SPLASHCOS Project and Francesco Chiocci was invited to present information about SPLASHCOS at the EMODnet-Geology Kick-off Meeting. The module to model substrate and other terrigenous derivatives from acoustic data (led by CEFAS) was also presented at the Lisbon meeting. The WP leader (Geological Survey of Finland) issued detailed work instructions for compiling the sea-bed substrate layer to the EMODnet-Geology partners on 18 February 2014. The plan is to accelerate the progress of this WP to provide the Physical Habitats lot with the information they require for habitat mapping to allow them to construct their map outputs. The particular priority is to deliver a sea-bed substrate of the Adriatic Sea. The Physical Habitats Project Co-ordinator, Jacques Populus, has had input to the WP3 Guidelines document.

### ***WP4. Sea-floor geology.***

WP4 will compile information on bedrock geology including the lithology and stratigraphy of the geology of the European regional seas. As reported above, the Quaternary geological information will also now be compiled within WP4. The starting point for WP4 will be the 1:5 million International Geological Map of Europe and the Adjacent Seas (IGME 5000) compiled in 2005 and updated for the northern European Seas during the EMODnet preparatory phase. The WP will use the terms of the OneGeology-Europe/CGI vocabulary and portrayal rules to conform with INSPIRE compliancy. The Quaternary compilation will have synergies with the International Quaternary Map of Europe 1:2,500,000 Project (IQUAME 2500) which also involves the WP4 leader BGR (Germany). Guidelines for WP4 compilation were issued to the EMODnet-Geology Project partners by BGR on 28 February 2014.

### ***WP5. Coastal behaviour.***

WP5 will deal with coastal landforms along the entire coastal zone of the European regional seas by classifying the coastal behaviour and typology of each country. The EMODnet preparatory phase built upon the EUROSION database, and this will also form one of the baselines for the full EMODnet-geology Project, however the WP will also draw on data and information from other existing initiatives such as the publication on 'Coastal Erosion and Protection in Europe) which includes descriptions of coastal erosion and vulnerabilities on a country-by-country basis. The central parameter in the coastal behaviour output is the rate of shore-normal coastline migration. To eliminate the impacts of short-lived and/or local events, average values over a period of 10 years is the preferred deliverable from each country. A template for high-resolution information that was developed during the preparatory phase will be applied where possible. The WP leader (TNO, Netherlands) will work with the University of Sussex to consider coastal behaviour in the context of associated risk dependent on resilience (degree of change that coasts are able to withstand while keeping their integrity) and socio-economic value (areas that would suffer most from coastal change). A meeting between both parties will take place in March/April 2014.

### ***WP6. Geological events and probabilities.***

Information on all geological events and probabilities will be compiled in WP6. During the preparatory phase, the EMODnet-Geology Project made use of web map services to derive the most up-to-date information on earthquakes since 1998 from the European Mediterranean Seismological Centre (EMSC) and derived information on submarine slides from the Continental Slope Stability Project (COSTA). Both sources will be used again and updated where necessary. Other sources of information will include the Marine Geohazards along the Italian Coasts (MAGIC) Project, whose Co-ordinator attended the EMODnet-Geology Kick-off Meeting in Lisbon. Centres of volcanic activity will be mapped in all areas (none were included in the preparatory phase). Where possible, geohazards not included in the workplan will be considered and included, even if not available on a regional scale. For example the

vulnerability of parts of the coastline to flooding events and coastal erosion during storm surges is a major hazard. This aspect will be co-ordinated with the WP4 leader.

### ***WP7. Minerals.***

Of all the information Workpackages in the EMODnet-Geology Project, WP7 is most dependent on third party information. Existing published resources will again be used as the basis for the offshore minerals information, however the WP leader will distribute guidelines with example tables of information and instruction for compiling all mineral locations at 1:250,000 scale. As in all Workpackages, the WP leader will compile and standardize the information and distribute a GIS layer through the OneGeology-Europe portal and the new EMODnet-Geology portal being developed in WP8. Information on the offshore occurrences of polymetallic minerals have been compiled for some European countries (Iceland, Norway, Sweden, Finland, Russia, Spain, Portugal, Italy and Greece) which will be extended to the entire European regional seas. The EC's Blue Growth strategy highlights the importance of offshore minerals and the increasing number of activities aimed at identifying offshore metals will make the deliverables of this WP (in addition to oil & gas, aggregate resources etc) particularly timely. WP7 can act as a window to data and expertise. Some possible duplication with the EMODnet Lot 7 on Human Activities has been identified (information on hydrocarbon extraction etc.), which has led to communication between the WP leader and the Co-ordinator of Lot 7 (Alessandro Pititto) to ensure there is no duplication of effort.

### ***WP8. Web Services and Technology.***

The objective of this WP is to develop a portal and web services for the discovery, view and download of products and data. The main aim is to improve the EMODnet-Geology portal, and its harmonisation with the other EMODnet portals, and to enhance the delivery of maps and information. The primary outlet for EMODnet-Geology deliverables during the preparatory phase was principally the OneGeology-Europe (1G-E) portal. While this will continue to be one source of information, it was considered to be limited in scope and therefore in this phase of the project significant improvements will be made in web delivery of the EMODnet-Geology information. All work will build on previous developments and will follow an open-source standards driven approach (INSPIRE) allowing services to use multiple portals while still serving existing systems such as 1G-E. The Geology portal will sit alongside the other Lot portals and the central EMODnet website; provide a map and search interface giving access to maps and data catalogues; access existing map services and enhanced services; where possible access existing catalogue and metadata services. Web services will be compliant with INSPIRE and OGC open standards, which will ensure services can be reused thereby reducing duplication of effort. Web services will use Catalogue Services (INSPIRE, CSW, OAI) and Map Services (WMS and WFS). Data services (download) will be from host organisations. A number of open, non-proprietary solutions were investigated during the reporting period and will be implemented by June 2014.

## 4. Specific challenges or difficulties encountered during the reporting period

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*Please list specific problems you have encountered during this period, including related to technical and data provision issues*

*[Provide a bullet list - maximum 2 pages in total – where more information needs to be provided state ‘contact XXX for more information’]*

The specific challenges of the EMODnet-Geology Project will be to harmonise information at 1:250,000 scale. While information exists at this resolution for much of the European regional seas, there are areas where the information is sparse. Each WP will integrate the high and low resolution information to deliver a complete map, which will be underpinned by confidence assessments that will allow the user to see which level of resolution is available.

In many areas of the European seas, more detailed information exists (such as at 1:50,000 scale in some countries). The EMODnet system should ensure that users of the outputs are made aware that detailed information exists, even if not included in the harmonisation process. This can only be done by linking to national mapping programmes, which is an aim of WP8.

A standard coastline for integrating information within the Geology project and for sharing with the other EMODnet lots is an urgent issue to be resolved. The EEA coastline that has been recommended is at least an agreed standard, however for the Geology project in particular, which aims to deliver high-resolution information on coastal behaviour, this coastline does not have enough detail. Further discussions with the Lot co-ordinators will take place.



## 5. User Feedback

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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.

*[Provide information in table - attach the documentation/full user feedback to the report]*

Date	Name	Organization	Type of user feedback (e.g. technical, case study etc.)	Response time to address user request

## 6. Outreach and communication activities

Please list all the relevant communications activities or products you have developed/executed during this period (including presentations, lectures, trainings, demonstrations and development of communication materials such as brochures, videos, etc.). Relevant scientific and/or popular articles you know have been published using/referring to EMODnet should be reported under indicator 11 in Section 7.

[Provide information in table - Maximum 1 page]

Date	Media	Title	Short description and/or link to the activity
April/May	EGU Conference, Vienna, Austria.	Geological maps of the European seas - the EMODNET-Geology project	Conference presentation (no link available yet).

## 7. Updates on Progress Indicators

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*Using the indicator as a header list the metrics collated and the time interval. If there was no activity to report leave the section under the indicator header blank.*

### ***Indicator 1 - Volume of data made available through the portal***

Each partner will provide information from their national marine area to compile the sea-bed substrate, sea-floor geology, coastal behaviour, geological events and probabilities and minerals. The datasets are principally those held by the partner organisations (third party information that can be accessed will be included as the project progresses). The data sources (volumes) summarised in the EMODnet-Geology Technical Tender are essentially those that are available. An update of sources will be included in the WP2 report that is under compilation. As a general indicator, the number of datasets listed in the Technical Tender was 189.

### ***Indicator 2 - Organisations supplying each type of data based on (formal) sharing agreements and broken down into country and organisation type (e.g. government, industry, science).***

At this stage in the EMODnet-Geology Project the data contributors are primarily the project partners who are in all cases public sector organisations. Some of the partners include industry data in their compiled map outputs, however for current indicators the information-providing organisations are all government with the exception of the Turkish partner who are a science (university organisation).

***Indicator 3 - Organisations that have been approached to supply data with no result.***

***Indicator 4. Volume of each data type downloaded from each portal.***

***Indicator 5. Organisations that have downloaded each data type.***

***Indicator 6. User statistics to determine the main pages utilised and to identify products being used.***

***Indicator 7. List of what downloaded data has been used for.***

***Indicator 8. List of organisations that have downloaded data from more than one portal.***

***Indicator 9. Interoperability of data of different types and from different portals.***

***Indicator 10. Monitoring level of interaction with member states national processes for data stewardship.***