EMODnet-CMEMS
Thematic Workshop on Coastal Issues

Date: 16 June 2020 14:00-17:00 CEST (including 2x10 minutes Comfort Break)

Invited Participants:

- EMODnet Secretariat, Thematic Coordinators & technical experts
- Mercator Ocean International and other Copernicus Marine Environmental Monitoring Service Experts
- European Commission: DG MARE; DG DEFIS; DG CLIMA; DG ENV; DG RTD; DG JRC
- Copernicus Land Service, European Environment Agency (EEA)

Main aims of the workshop: the workshop with a technical focus aims to bring together EMODnet, CMEMS, inter-DG representation and the EEA to discuss marine data and data products and information on Coastal behavior. Objectives include assessing existing capabilities and emerging areas for collaboration across EMODnet themes and between EMODnet and CMEMS, in particular with a regional focus.

Moderator Chair: Iain Shepherd (DGMARE)

Platform: Hosted by EMODnet Secretariat via Zoom Webinar

***Note**: all presentations are to be made available on the Maritime Forum as pdf files – agenda see Annex*

Brief minutes, conclusions, main messages & topics for follow up

Coastal challenges

- There is general agreement among DGs and participants from both Copernicus and EMODnet that coastal challenges are extremely important.
- A grand challenge and major gap is loading from rivers. There is not an international protocol for collecting the data for both the water flow and the nutrients, the sediments, the contaminants. This is a key gap, the interface with the hydrological community is scarce. This is therefore a major focus at global level.
- Sediment loss from rivers, and monitoring how changes in rivers will impact sediment transport, nutrients, etc. is vital, bearing in mind regional differences and types of coastal morphology.
- Statistics on land cover changes - wetland loss, urbanisation are also difficult to find. Going back to WW2 times (1939-1945) for coastal change is an option as there are plenty of aerial photographs from this period.

Exchange on Copernicus and EMODnet

- Copernicus (CMEMS/CLMS) has identified coastal challenges as a priority since 2017. This resulted in a Coastal Roadmap across services, where now two services have started to work: The Marine Service and the Land Service. For Copernicus 2.0, creating a one stop shop is under consideration; the 'Coastal Knowledge' hub is being suggested as a way to foster use of Copernicus products by coastal stakeholders, to co-develop coastal solutions with the member States. Consistent, coherent and ambitious as much as possible, it is currently in draft stage. The

Coastal Knowledge is therefore still only a proposal but it is hoped it will be accepted which will depend largely on the availability of budget.

- Timing is right for EMODnet and others to input into the Copernicus Coastal Roadmap to ensure joint activities, building on complementarities;
- EMODnet has assembled over the years relevant datasets and products with high relevance for addressing coastal challenges and will continue this focus.
    - Particularly relevant is work from thematic lots Physics, Geology, Bathymetry and Chemistry (rivers), but also other lots should be explored further;
    - Reflections from the EMODnet Checkpoints (related to EOOS):
        - Checkpoints revealed general lack of useful data and information on the coasts, while most of human activities take place there.
        - From the Checkpoint assessment, we know that in particular fishery data is lacking and AIS data are a big gap.
    - EMODnet is moving to a next phase, with further integration of services which will allow better combination of data and product resources with CMEMS, also on coastal aspects.

Fostering synergies

- Agreement that considering joint approach building on complementary will be very important.
    - From CMEMS side there is a call to look at the complementarity with Member States assets, systems, and practices. The call targets to mix both o the local models and solutions with the Copernicus models and products both at sea and on land. Sediments, Seafloor damage (trawling), Erosion are all important topics
    - For Bathymetry, the plan under discussion for CMEMS (post 2021) is focused on Copernicus satellites (S2 in particular) and to derive bathymetric data where and when satellites can help. This should be a core European product to be used as an input for groups that deliver bathymetric products (and EMODnet in particular)
    - You cannot always know the value of free data e.g. EMODnet Bathymetry map made a "massive" improvement in storm surge forecasts in North Sea. Making available data as in Copernicus and EMODnet will support the innovation capacity of Europe for public and private actors, for better science and innovation.
    - CMEMS/EMODNET for coastal : Need to choose one or two focal topics and continue with this partnership. Clearly list what has been done by EMODnet and CMEMS and see how we can find solutions for everyone, focusing on coastal zones.

The way forward:

a) Select 2-3 focal topics for short to medium-term follow up

Follow up actions could be centered around following topics:

- **Sediments dynamics**: One of the most important issues is sediment loss from rivers. Consider dynamics from suspended material transported by **rivers** (and trapped by Human Activities like dams) to the way river input is distributed by marine currents and where and how far suspended material deposits.
    - This topic would involve CMEMS/CLS and several EMODnet thematic data assembly groups: Human activities, Physics (currents), Geology (sedimentary deposits, bed structure, erosion), Chemistry (composition), Biology and Seabed Habitats (colonizing communities), etc.

- **EMODnet Bathymetry, Geology & CMEMS interaction on** dynamic/coastal bathymetry and coastlines/erosion. This could include focus on satellite-derived bathymetry with applications on dynamic coastal behavior. To take it forward specific questions and objectives would need to be defined, taking into account and building on some examples of where SDB has proved useful and consider input from the concluded EMODnet coastal mapping project.
- **Chemistry**
    - Contaminants coming from **rivers**.
    - European Environment Agency (EEA) shared idea to **combine in situ stations with Earth Observation data.**
        - EMODnet are really keen on developing collaborating offering what is already available (e.g. river data) and work on new joint products. This could be taken forward in a small expert group for further discussion into details
        - MOi would be interested to join this discussion on rivers since they have initiated work in this direction as presented in Pierre-Yves LeTraon and Antonio Novellino's presentations.

b) Explore opportunities for complementarities/synergies on longer time scale covering

- **Biology/biodiversity**: particularly plankton data and products, in creating new/other type of products, noting that EMODnet Biology (linked to EurOBIS and OBIS) is not restricted to Europe and covers the entire ocean.
- **Coastal Human Activities:** explore across relevant datasets what could be of interest in combination with environmental datasets from CMEMS/EMODnet on coastal management issues.
- **Seabed Habitats**: potential incorporation of seafloor impact data bringing together Human Activities, Physics and Seabed Habitat Data.

Main Decision/Action

Organise a series of follow-up/discussion between

1) DGs and Secretariats + other EU organisations to define framework and prioritization of focal topics for follow up
2) Thematic expert group collaborative team focusing on selected topics, e.g. on sediments dynamics, SDB+dynamic bathymetry and coastlines/erosion and contaminants from rivers as outlined in the meeting summary minutes.

(EMODnet Secretariat, MOi, DG MARE, DGDEFIS, 30 September 2020)

Annex - Draft agenda

- **Welcome and scope of the meeting** (Iain Shepherd, DGMARE; Fabienne Jacq, DG DEFIS) - 5'
- **Introduction of the Speakers** - 5'
- **Copernicus Marine Environmental Monitoring Service (CMEMS)** (Fabienne Jacq, DG DEFIS)
- **Copernicus Marine and Land coastal data and data products** (Pierre-Yves Le Traon, MOi; Matteo Mattiuzi, EEA) - 30'

Comfort Break - 10 min

- **Overview of European Marine Observation and Data Network (EMODnet) coastal data and products:** data and data products relevant to the coast; and how these data and products can be used in the CMEMs modeling effort at regional level – 5' presentation and 5' Q&A each
    - EMODnet brief introduction (Jan-Bart Calewaert, EMODnet Secretariat)
    - EMODnet Bathymetry (Thierry Schmitt, SHOM; Dick Schaap, Maris)
    - EMODnet Biology (Joana Beja, VLIZ)
    - EMODnet Chemistry (Alessandra Giorgetti, INOGS; Dick Schaap, Maris)
    - EMODnet Geology (Henry Valius, GTK; Sytze van Heteren, TNO; Rhys Cooper, BGS, Andrea Fiorentino, ISPRA)
    - EMODnet Human Activities (Alessandro Pittito, Cogea)
    - EMODnet Physics (Antonio Novellino, ETT)
    - EMODnet Seabed Habitats (Mickael Vasquez, Ifremer; Eleonora Manca, JNCC)

Comfort Break - 10 min

- **Predicting the global coastal ocean**, a UN Decade initiative (N. Pinardi; University of Bologna) - 5'
- **Structured Discussion (30')** to identify:
    - Complementarities and interoperability of both initiatives for coastal behavior information;
    - Areas for collaboration (e.g. using EMODnet data and data products for CMEMs modelling efforts, at a regional level; CMEMS outputs to validate EMODnet data products etc.)
    - Collaboration across different EMODnet themes.
- **Final comments and considerations from participants** (All participants) **- 5'**
- **Conclusions and next steps** (Iain Shepherd, DGMARE; Fabienne Jacq, DG Defis) – 5'

Annex - List of Participants:

Panelist

	Name	Affiliation
1	Rhys Cooper	BGS
2	Alessandro Pititto	COGEA
3	Martin Verlaan	DELTARES
4	Zoi Konstantinou	EC
5	Fabienne Jacq	EC
6	Ivan konatchiev	EC
7	Iain Shepherd	EC
8	Matteo Mattiuzi	EEA
9	Jan-Bart Calewaert	EMODnet
10	Andrée-Anne Marsan	EMODnet
11	Kate Larkin	EMODnet
12	Francis Strobbe	EMODnet
13	Knut Hartmann	EOMAP
14	Antonio Novellino	ETTSOLUTIONS
15	Henry Vallius	GTK
16	Sylvie Pouliquen	IFREMER
17	Alessandra Giorgetti	INOGS
18	Andrea Fiorentino	ISPRA
19	Eleonora Manca	JNCC
20	Thorsten Kiefer	JPI-OCEANS
21	Dick M.A. Schaap	MARIS
22	Angelique Melet	MERCATOR-OCEAN
23	Pierre-Yves Le Traon	MERCATOR-OCEAN
24	Antonio Reppucci	MERCATOR-OCEAN
25	Thierry Schmitt	SHOM
26	Patrick Gorringe	SMHI
27	Sytze van Heteren	TNO
28	Nadia Pinardi	UNIBO
29	Joana Beja	VLIZ
30		

Attendee

	Name	Affiliation
1	Alexander Müller	BGR
2	Juan Carlos Fernandez	EC
3	Lucie Pautet	EC
4	Grigore Rischitor	EC
5	Juan Pablo Pertierra	EC
6	Fabrice Pourceau	EC
7	Monika Peterlin	EEA
8	Tim Collart	EMODnet
9	Xiaoyu Fang	EMODnet
10	Bjarni Pjetursson	GEUS
11		

12	Verner Brandbyge Ernstsen	GEUS
13	Xavier Monteys	GSI
14	Natalia Ospina-Alvarez	ICRA
15	Arthur Pasquale	INFO-RAC
16	Giordano Giorgi	ISPRA
17	Alessandro Lotti	ISPRA
18	Francesca Catini	ISPRA
19	Joaquin Tintore	SOCIB
20	Jelena Knezevic	UN
21	Daria Mokhnacheva	UN
22	Lennert Tyberghein	VLIZ
23	Ana Rodriguez	