# Stakeholder workshop on EMODnet Atlantic Checkpoint Findings

14 February 2017, Brussels


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On 14 February 2017 afternoon stakeholder workshops, one per sea-basin, were organised by EMODnet as part of the EMODnet Stakeholder Conference (14-15 February 2017). Each sea-basin workshop was expected to come up with concrete recommendations to data adequacy issues identified within the framework of the sea-basin checkpoint. Hereafter are presented the results of the Atlantic Workshop.

## Participants

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|---|---|---|
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# Introduction

In a short opening presentation the Chair defined the objective of the workshop: to provide concrete solution-oriented proposals to some data adequacy issues that the Atlantic Checkpoint had identified so far.

The Project had produced a list of issues to be discussed. The issues had been grouped by theme (physics, human activities, biology, bathymetry, habitat, chemistry, geology). The participants got through these issues and tried to work out a recommendation for each.

# Main outcomes of the discussions

All the recommendations worked out in the course of the workshop are available in the next section. The following are a short selection that we consider as the top recommendations.

- **HF radar presence should be increased**. Compared to USA, where 75% of coasts are covered by HF radar, the presence of HF radars in Europe is poor. HF Radars provide real-time information on sea-surface currents, which is key for many applications: Marine safety (search and rescue, oil spill), Marine resource (Renewable marine energy), Environment (water quality monitoring, pollution control), weather forecast and ocean 3D modeling
- **A GPS vertical correction for all existing operational Tide Gauge platform in Europe** in order to enable the integration of land vertical motion in the computation of absolute sea level.
- **A free AIS (Automatic Identification System) service should be developed to make available the AIS vessel tracking data**. Currently they are not free and are expensive. Such a service would foster the use of AIS data by applications such as “Oil leak” (impact of spill on traffic), "Windfarm siting" or MPAs (competition for space, traffic statistics), fisheries impact, or “Invasive species” (ballast water as vector of species transport). It would also be in support of surface current computation (which itself is in support of many applications) because current speed and direction can be derived from boat drift
- **In some fields need for standardisation prior to integration in data platforms**
    - Alien species
    - Species mobility/behaviour
    - Human activities layers (e.g. aquaculture)

  We encourage initiatives (e.g. working groups) for such standardisation.
- A little **more effort** has to be done **for full availability for free of existing data** whose acquisition was **funded by public money**. This is obvious for survey data on bathymetry.

# Minutes of the workshop

For each issue identified by the Atlantic Checkpoint the participants made some recommendations and those were scored according to their urgency (1 = urgent, 2 = not urgent). Prior to the workshop, the Project had classified each issue as 'observation' whether the issue was a lack of observation or as 'service' whether the issue was a lack of service.

## Physics

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | Sea surface currents observations scale and coverage | Sea surface currents: there is a clear need for sound finescale sea surface current observations. Such data is required for many applications: Marine safety (search and rescue, oil spill), Marine resource (Renewable marine energy), Environment (water quality monitoring, pollution control), weather forecast and ocean 3D modeling, research | observation | **More real-time data required. Increase HF radar presence, especially in relation to strategically important areas/pathways (Oil slick/Emergencies).** | 1 |
| 2 | Hydrodynamics models resolution | Gridded models outputs provided by Copernicus for some key variables (e.g. wave or current energy, temperature, salinity) typically have a resolution of around 7km. Some applications such as broad-scale habitat mapping or MPA connectivity require oceanographic data with ideally hectometric resolution | service | **Provision of higher resolution gridded model (500m).** | 1 |
| 3 | Hydrodynamics models gridded output metrics | Copernicus provides GIS layers on physical variables that are generally archived time series averaged over a predefined time period (e.g. temperature daily or monthly averaged). Providing such information is quite useful but this unique metrics (average) may not be sufficient and not meet the data user's need: one may need e.g. a percentile or a standard deviation rather than a mean value. | service | **Provision of supplemental metrics: percentile10, 50, 90 and standard deviation** | 2 |

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 4 | Spatially distributed information on the uncertainty of predicted values | Typically physical oceanography models (e.g. currents, waves, light, temperature, etc.) provide little to no information on the uncertainty of the values they compute. Applications (e.g. habitat mapping, offshore energy) need an estimate for each model cell of how much they can be confident in the predicted value. | service | **Recommendation for provision of associated spatially distributed confidence assessment (i.e. not only, as performed today, point validation of the predicted values with observed values)** | 2 |
| 5 | Sea level/land motion observation integration | Sea level and land motion observations: an increase in the number of GPS measurements at tide-gauge locations is needed to provide information on vertical land motion. | observation | **A broad programme of GPS correction at each tide gauge** | 1 |
| 6 | Sea level model spatial resolution | Sea level models resolution: according to Slangen et al (2016) sea-level change should be estimated on a national level, which is what coastal planners are interested in, but the spatial resolution of the current sea-level projections is still relatively coarse. (…) models will need to use finer grid resolutions to account for local effects, such as coastal evolution and sediment transport. | observation | **EU wide initiative to deliver improved sea level models, either through re-analysis or using satellite info and other sources.** High temporal resolution is required. | 2 |
| 7 | Wind vertical distribution | The literature survey stressed the lack of appropriate information on wind vertical distribution | observation | **EU wide initiative to deliver improved wind vertical models. Interaction with private / public interest. Upward looking LiDAR systems to deliver wind profile. National meteorological services** | 2 |

# Human Activities

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | AIS availability | AIS (Automatic Identification System) vessel tracking data are not freely available for download, although key input of applications such as “Oil leak” (impact of spill on traffic), "Windfarm siting" or MPAs (competition for space, traffic statistics), fisheries impact, or “Invasive species” (ballast water as vector of species transport). It would also possibly in support of surface current computation (which itself is in support of many applications) because current speed and direction can be derived from boat "crabbing" | service | **Delivery of free access to AIS data and highest possible resolution of marine traffic information. Next ESA Sentinel satellites that will be launched around 2020 will collect AIS data. They may be room for making that data available for free (an EMODnet Initiative?)** | 1 |
| 2 | Fishing data availabitlity | Fishing: At the moment, collected data (catches, efforts, landings, VMS, logbook data) need to be requested from the Member States via data calls or are made available on a case-by case basis. | service | **Data access must be simplified. It is today extremely cumbersome for Member States and creates data bottlenecks. Need for centralisation and provision of relevant interpreted datasets. Possible coding of fisheries data for areas across region. Data would be coded but still interrogable in models.** | 1 |
| 3 | VMS availability | Map of Fishing effort: at the moment the most comprehensive and recent datasets available on bottom fishing effort and intensity are a series of maps generated in 2016 by the ICES Working Group on Spatial Fisheries Data (WGSFD) who assembled VMS data from vessels, coupled with log book data obtained via a data call to 21 countries of the NE | service | **If above recommendation (collected data more widely available) not feasible, the spatial resolution/coverage of products on fishing effort should be dramatically increased** | 1 |

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| | | Atlantic and Baltic. These maps only cover the OSPAR area, their time coverage is from 2009 onwards and their resolution 0.05 degrees (~5 km). If the purpose is to assess fisheries impact on seabed habitats, this resolution is not sufficient, as it is dramaticacally lower than that of the broadscale habitat maps provided by the EMODnet Seabed Habitat lot (250m). | | | |
| 4 | Tourist beaches proxy data | Oil spill impact: For the assessment of impact of an oil spill on tourist beaches the dataset used as a proxy was the EMODnet dataset 'Quality of bathing water' which might not be comprehensive. | service and observation | **Development of Human activities layers. Parking Lots / Hotel Beds/Leisure Activities. Satellite data interpreted via crowd sourcing ?** | 2 |
| 5 | Aquaculture sites spatial representation | Oil spill impact: Aquaculture sites are often found as point locations rather than polygons boundaries. Data on shellfish aquaculture currently available on the EMODnet Human activity portal are clearly not satisfactory, as they are still mostly in point form from many sources. GIS compliant cadastre data were found for Ireland and France but are still missing elsewhere. | service | **This issue is not limited to aquaculture sites but is true for a lot of Human activities GIS layers. Working groups to standardise in which form the information should be captured in datasets and provide guidance to data originators for delivery of datasets to the existing infrastructure** | 1 |
| 6 | information on MPAs management consistency | Information required for identification of IUCN categories of MPAs is not readily available, scattered among different sources and mostly in national languages. Data are not always up to date | service | **Development of a web platform to centralise this information. Harmonisation of delivery specification** | 2 |
| 7 | Small scale fisheries data | The literature survey stressed the difficulty to collate data on recreational fisheries and artisanal/small scale fleet, the impact of which on ecosystems is however substantial | observation | **Development of artisanal fisheries layers. Proxy layers (vessel registrations/ Infrastructure/licencing/Local knowledge)** | 2 |

# Biology

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | Alien Species data consistency | The European Union lacks a comprehensive framework to address the threats posed by the introduction and spread of non-indigenous species (NIS). At present, data are rarely if ever gathered through standardized surveys specifically designed to detect NIS.One of the problems is the lack of standardisation of terminology and metrics to describe the status of biological invasions, influenced, in turn, by quality, validity and potential bias of the underlying data. | service | **Developement of standards Development of NIS Pathways Resource (Biogeographic basis).** | 1 |
| 2 | Alien Species data collection | Current efforts are fragmented and suffer substantial gaps in coverage. Poorly studied NIS taxa, NIS in poorly-studied habitats and regions, small-bodied species and additional lacunae impede our understanding of NIS diversity. | observation | **More data Acquisition is required Definition of protocols for acquisition of data and elimination of bias** | 1 |
| 3 | Alien Species data availability | Existing data suffer from being referenced a lot in publications, so although data are easily found and get 75% of easy download, responsiveness and readiness are low. Data policy and its visibility are very low, probably due to the absence of these indicators in web sites dealing with this topic which are still in their early development | service | **Centralisation in EMODnet Biology phase 3** | 2 |
| 4 | Species mobility observation | Overarching need to know species mobility (behaviour e.g. migratory corridors, staging, feeding, nesting, breeding areas, larval dispersal) for birds, mammals, reptiles, larvae, fish, salmon, eels, invasive species. This information is crucial for applications such as impact of renewable energy, MPA management, impact of climate change. | observation and/or service | **Standardisation of Tags/Genetic datasets. Coordination of monitoring datasets (Tags/Genetics). Increase scope of existing tagging initiatives.** | 1 |

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 5 | Fisheries discards and bycatch data availability | Fisheries: Data on discards and incidental bycatch (e.g. marine predators)<br>- are not available for many countries in the Atlantic<br>- there is no regulation on data collection thus no obligation for fishermen to accept the presence of observers onboard<br>- when they exist are only available on special data call from Member States<br>- more specifically, data on PETS (Protected, endangered and threatened species) bycatch are scarce and dispersed as they are held in National Research Institutes' databases | observation and service | **Some data on bycatch around the Azores has recently been added in EMODnet Biology. Promote this initiative.** | 1 |

## Bathymetry

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | Bathymetry 250m DTM product accuracy | the bathymetry 250m DTM product has lots of gebco values and the whole bay of Biscay comprises interpolated values | observation | **Production of a Higher resolution product will be carried out in EMODNET phase 3** | 2 |
| 2 | Spatial coverage in western Atlantic | On the western side of the Atlantic There is no full-coverage DTM product such as that of EMODnet 250m. The main access point for bathymetry is NOAA website, which provide discocery services for Survey datasets. You can also download them, but one by one, by clicking them. | service | **Development of an integrated service and of a DTM as that of EMODnet** | 1 |

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 3 | Bathymetry resolution | The literature survey stressed that higher DTM resolution than 250m is required for many applications (e.g. 50m to 100m for applications such as wind farms, sea level estimates or hydrodynamic modeling) | observation and service | **Data Acquisition Programme, in prioritised areas - Coastal/SOLAS/Blue Growth/MPAs** | 1 |
| 4 | Survey datasets availability | Some restrictions are found with EMODnet bathymetry survey datasets data policy. In the North Atlantic a high proportion of 88% of the 10,000 survey datasets are obtained by negotiation. The negotiation led to the following results:<br>- 16% were available for free (just wanted to know what we intended to do with the data)<br>- 57% were charged<br>- 27% are still pending (an email address was provided for further negotiation) | service | **The 16% should be made available without negotiation**<br>**The datasets funded by public money MUST be made available for free** | 2 |
| 5 | Medatata completeness | Another request is for metadata completeness (e.g. soundings timestamp) | service | **Delivery of timestamping as part of metadata mandatory** | 1 |

# Habitat

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | availability of data on carbon sinks habitat spatial distribution | The literature survey reports a lack of data on seagrass, mangrove, kelps, coral reef spatial distribution | observation | **Data Acquisition across carbonsink habitats**<br>**Spatial distribution modeling across extensive areas may be an alternative to costly extensive surveys** | 1 |
| 2 | Deep sea habitat observations | Many deep sea offshore habitats are under-studied and poorly inventoried. The most prominent data gaps involve the lack of consistent, region-wide surveys of biological data on marine species across taxa and trophic groups. This especially applies to the abyssal plain, which is under-represented, with available biological data being more restricted to surface or shallow water regions in and around coastal areas (Patricio et al, 2014) | observation | **Data Acquisition across deepwater habitats** | 2 |
| 3 | Catalog of habitat sample points | Availability of habitat sample point data: the UK Marine recorder is a huge habitat database that has stored and made available for years all sample point data that were collected in the UK and Irish waters with a view to produce habitat maps. Unfortunately in Europe the Marine recorder is an exception. Elsewhere such data are held at best in national databases, and sometimes on personal computers, making access to this information difficult or impossible | service | **EMODNET Seabed Habitats Phase 3 will tackle this** | 1 |
| 4 | Finescale habitat maps coverage | The literature survey reports a lack of habitat maps at EUNIS level 5-6 (maps from surveys), even in the coastal zone. Complete coverage is achieved by the EMODnet broadscale map, however with insufficient thematic accuracy and spatial resolution for finescale applications | observation | **Prioritised Data Acquisition** | 2 |

# Chemistry

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | Nitrate and Phosphate data availability | Nitrate and Phosphate concentration in rivers: data is scattered, often available from local sources only, with the metadata sometimes incomplete (e.g. measuring date) | service | **Harmonisation of metadata protocols for all contaminants in order for EMODNET to aggregate the data** | 1 |
| 2 | EMODnet chemistry data access services | Problems with robustness of EMODnet chemistry data access services were reported | service | **Report directly to Data Providers** | 1 |
| 3 | OSPAR ODIMS data access service | OSPAR ODIMS portal: although there are several options to access, request and download data in the portal, it doesn't consistently work. The portal interface and server appears sometimes unstable giving error messages when browsing data files | service | **Report directly to Data Providers** | 1 |

# Geology

| | Issue | Issue Description | Need for better… | Recommendation | Urgency |
|---|---|---|---|---|---|
| 1 | EMODnet seabed substrate map distribution restriction | 1/250,000 seabed substrate EMODnet product: in France some existing maps were not made available. | service | **Request Data Provider to make data available in EMODNET Phase 3** | 1 |
| 2 | seabed substrate data resolution in shallow waters | the literature survey stressed insufficient scale of the seabed substrate due to lack of resolution in coastal zones | observation | **Data acquisition subject to prioritised drivers** | 2 |
| 3 | seabed substrate data knowledge in deep waters | the literature survey stressed insufficient scale of the seabed substrate due to lack of information in deep waters | observation | **Data acquisition subject to prioritised drivers** | 2 |
| 4 | Unprocessed datasets | a wealth of sediment samples in analog form are still unexploited | | **Rescue Project for historical sediment sample datasets** | 1 |