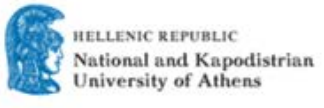
EMODnet

European Marine Observation and Data Network

SEA BASIN CHECKPOINT
Tender no MARE/2014/09-LOT4

D 17.3 Interim report



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Executive Summary

The Interim Report overviews the activities carried out by the Project "Sea Basin Checkpoint Lot 4: Black Sea", in the period ranging from the 15th July 2015 (starting date of the project) till the 15th January 2017.

The overview has been subdivided into five sections:

1. Literature Survey results (WP1);
2. Work package 2-13 activities;
3. Work package 14-15 on the Data Adequacy Report result and the first Expert Panel meeting;
4. Coordination, outreach and dissemination;
5. Next steps.

Introduction

The objective of EMODnet Black Sea Checkpoint is to examine the current data collection, the observation and data assembly initiatives in the Black Sea, analyze how they can be optimized and deliver the findings to the stakeholders through an internet portal.

Specific objectives of the project are:
1) Carry out a literature survey;
2) For each challenge:
   - Produce a metadatabase regarding the input datasets needed for the "Targeted products";
   - Produce Targeted products for the eleven specific Challenges;
3) Produce two Data Adequacy Reports.

The target audiences for these deliverables are the Institutional Actors (Policy Makers), the Upstream Providers, the Intermediate Users, the End Users and the General Audience as illustrated in the Table 1. below (Literature Survey, 2016).

Checkpoint activity/Audience	Institutional stakeholders/ Policy makers	Upstream data providers	Intermediate Users	End Users	General audience
General information					Main driver
Data Adequacy Reports: Gap indicators	Main Driver				
Data Adequacy Reports: Input data adequacy indicators		Main driver			
Checkpoint Service: GIS catalogue			Main driver		
Checkpoint Service: Targeted products				Main driver	

Table 1. Checkpoint activities versus audience (user category) of the Black Sea Checkpoint.

The orange (Table 1.) indicates the two main target Checkpoint user categories for the two Data Adequacy Reports (extracted from Literature Survey, 2016).

In the following the overview of the Literature Survey, the Challenge Work packages work, the first DAR and the Panel Report, together with the dissemination and coordination activities is presented.

1. Literature Review

The Literature survey is published in the Black Sea Checkpoint portal: http://emodnet-blacksea.eu/reports-and-news/ .

The EMODnet Black Sea Checkpoint Literature Survey was carried out between July 2015 and April 2016 in order to answer the following questions: is there an overview of data appropriateness and availability? Can any statement of fitness for purpose be made?

The Literature Survey was defined by the Black Sea Checkpoint framework for "Data Adequacy" assessment and it is based upon the ISO and ISPIRE international standards and adapted to the Checkpoint needs. The framework consists of three main components: 1) collection of the metadata information about the input data sets required by the Challenges; 2) definition of the assessment criteria; 3) development of the "adequacy indicators". The Literature Survey was built on the vocabulary definition and the methodology developed for the Mediterranean Sea Checkpoint that is followed also by Atlantic Checkpoint.

The basic terminology for "data" was defined in terms of "characteristics" and the environmental matrix where they were specified. The SeaDataNet common vocabulary was used to provide discovery parameters (so-called P01, P02 and P03 as present in the document http://www.seadatanet.org/Standards-Software/Common-Vocabularies). Using the SeaDataNet standardized sets of terms solves the problem of ambiguities associated with data markup and also enables records to be interpreted by computers. The characteristics are related to air, ice, fresh waters, marine waters, biota/biology, seabed/riverbed monitoring environmental matrices and human activities.

An initial list of characteristics needed by the EMODnet Black Sea Challenges was produced with an overall analysis of the most requested input data sets and the potential data providers. It was found that 48 different characteristics are needed by all Challenges and over 400 data sets are available in principle. A list of 56 data providers was identified from International, European, EU Member State plus Russia and USA Institutions and projects.

An overall survey on the Black Sea observational capacities and monitoring systems was discussed and this showed that a comprehensive overview of existing monitoring systems exists. It came clear that European Projects contribute to the development of the Black Sea large scale monitoring system while national measurement platforms have been put in place for the territorial waters during the past ten years.

In order to obtain an initial understanding of basin scale monitoring systems adequacy, we analyzed several literature Use Cases that described similar products to the Checkpoint Targeted products. The literature Use Cases were chosen on the basis of the fact that they present and evaluate the quality and the availability of the input data sets required for the Use Case. It was found that the 24 literature Use Cases used data adequacy elements such as: 1) spatial resolution and area coverage; 2) temporal resolution and extent. For all Use cases, data availability is generally high except for the accessibility. For a large number of the literature Use Cases the data are completely restricted and/or access to the input data requires specific agreements with the data owners.

In conclusion, the Literature survey showed that a large amount of input data sets exist at the basin scale level, so that a basin scale overview of the Black Sea monitoring system is available. The Literature Surveys should be carried out periodically, because conclusions rapidly become obsolete in a changing marine environment and for the increasing needs of the 'blue' economy.

2. Work package 2-13 activities

Black Sea Checkpoint aims to document the reliability and utility of the existing monitoring system at sea basin level, by developing fitness for use indicators to show the appropriateness and availability of monitoring data for the production of Challenge targeted products. The challenges are: CH1- Windfarm Siting, CH2- Marine Protected Areas, CH3- Oil Platform Leak, CH4- Climate, CH5-Coasts, CH6- Fishery Management, CH7- Fishery Impacts, CH8- Eutrophication, CH9- River Inputs, CH10- Bathymetry, CH11- Alien species.

Work packages 2 to 12 are dedicated to the eleven challenges which have to:

- define the targeted products;
- select the input data sets for the generation of targeted products;
- contribute to the construction of the metadatabase for the Checkpoint Service;
- contribute to the selection criteria and the Checkpoint indicators.

All Work packages that contributed to the first version of the metadatabase has been produced and made available in the Black Sea Checkpoint Web Portal (http://www.emodnet-blacksea.eu). This provided the basic information to build the First DAR.

The CH3 Oil Platform Leak output was activated on 5th May 2016 after EASME request.
Results indicated that the Bulletin was released within the prescribed time (24 working hours from the request) and its final version including expected impact of simulated oil spill on environmental and human activity was sent 13th May 2016.

All the other Challenge outputs are due in the next 18 months of the project.

Work package 13 contains the work plan for the development of the web portal and the Checkpoint service. During the first 18 months of the project two versions of the Black Sea Checkpoint Web Portal were released: the first version (January 2016) containing preliminary information about the project and the second (June 2016) containing the Checkpoint service functionalities.

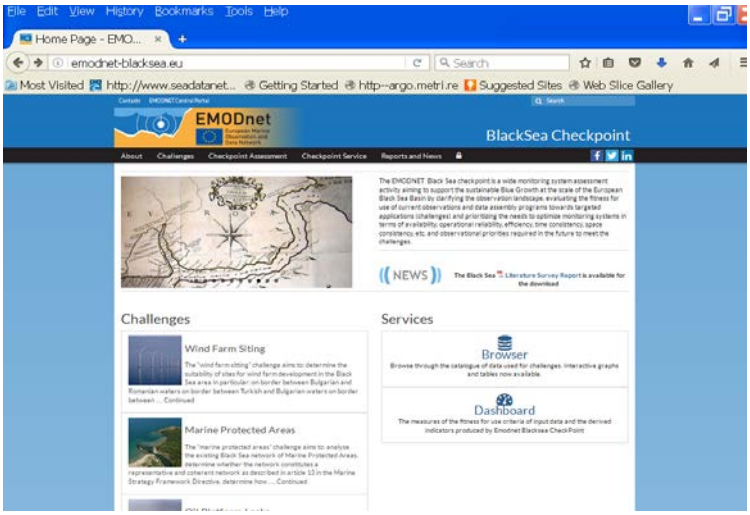

Fig.1 Second version of the EMODNET Black Sea Checkpoint portal

3. First DAR and Panel Report

The First DAR is published on the Black Sea Checkoint Portal: http://www.emodnet-balcksea.eu/reports_news/.

The aim of the DAR was to assess the Black Sea monitoring systems on the basis of the input data sets for 11 predefined Challenges. A completely new methodology has been developed based on ISO standards, INSPIRE principles and a set of quality indicators.

The first step in the process involved the definition of a "Data Adequacy Framework", which was derived from the ISO 9004:2009 standards. Data Adequacy is defined as the fitness for use of the monitoring data required by the Challenges. The Checkpoint adequacy relates to both the requirements and the needs of the Challenges and was developed considering the ISO 9001 Quality Management System. The quality assessment is subdivided into two major "territories": "appropriateness" and "availability", the first one answering the question "what is the quality of the monitoring data for the Challenge products" and the second one to the question "how is the data made available to the Challenges". In the first DAR only the "availability" indicators were explored and analyzed. Eight indicators were defined.

The second step in the analysis was to set up a metadatabase containing standardized information about the input datasets potentially usable by the Challenges to generate their products. The Black Sea Checkpoint metadatabase currently contains information describing input data for the Challenges that are uniquely identified as a combination of categories of characteristics, providers and other descriptors, together with the availability indicators' set. The metadatabase stays at the back-end of an INSPIRE Web and GIS platform, known as the Sextant, and uses the SeaDataNet common vocabulary to identify the categories of characteristics needed by the Challenges and to analyze the statistics of indicators.

The 1st DAR included the consolidated analysis of the needed characteristics required for the Challenge products and their input data sets. The Black Sea Checkpoint metadatabase contains 452 input data sets describing 40 different characteristics categories. About half of these categories are used by more than one Challenge, and several input datasets are potentially capable of describing them for the Challenge products. Most of the Challenges involve several characteristics categories which will be potentially used to generate the required products. For each characteristics category there is large number of input data sets (50-100) mainly due to routine choices made by the Challenge experts.

The 1st DAR contains as well the first assessment of the Black Sea monitoring system on the basis of the analysis of the availability indicators across all Challenges for the 452 input data sets and the 40 characteristic categories. The 8 availability indicators are classified on the basis of a three values range color system: "red" meaning "not adequate", "yellow" "partly adequate" and "green" "fully adequate". The analysis shows that for most of the indicators half are "not adequate" and the other half are "adequate". The single most negative score is for the "INSPIRE catalogue service" indicator, which is generally not adequate. Furthermore, the "Pricing" indicator is split in half between "not well documented pricing policy" and "open and free data policy". In summary, however, the majority of the scores for the availability indicators are positive, meaning that most of the data sets to be used by the Challenges are "adequate" in the terms of how they are made available to the Challenges.

Finally the EMODnet Thematic Portals and the Copernicus Marine Environment Service (CMEMS) were evaluated in terms of availability indicators. Results show that with a few exceptions the scores are "totally adequate".

In conclusion, the first DAR highlights that for the EMODnet Black Sea Checkpoint, a large number of data sets are available for the Challenges products (452) but their adequacy varies greatly from Challenge to Challenge and in respect of the different characteristics. The method developed in the Black Sea EMODnet Checkpoint seems useful for an objective assessment of the adequacy of the monitoring system at the basin scale. The second DAR will couple the availability criteria scores with the appropriateness, thus producing a complete assessment of monitoring systems at the Black Sea basin scale level.

A Panel meeting was held in Sofia, Bulgaria on 14th and 15th November 2016 to present the 1st DAR to the Expert Panel composed of:

1. Dr. Vanya Grigorova – environmental agency
2. Prof. DSc Jordan Marinski – academia – coastal engineering
3. Dr. Vangelis Papathanassiou – academia – marine biology and ecology
4. Prof. Dr. Bayram Özturk - – academia - fisheries biology and governance
5. Prof. Dr. eng. Eugen Rusu – academia – marine engineering
6. Ms. Iryna Makarenko – representative of the Black Sea Commission
7. Mr. Todor Denev - representative of the offshore energy industry

4. Communication

The project repository has been continuously updated during the reporting period with documentation and deliverables. The repository web address is:
http://emodnet-blacksea.eu/project-shared-point/.

During the reporting period several meetings were carried out, most of them were organized through the web platform to reduce travelling costs and time.

- ✓ Kick-off meeting in Varna, Bulgaria (12-14 October 2015)
- ✓ 1st annual meeting, Varna, Bulgaria (14-15 June 2016)
- ✓ Panel meeting, Sofia, Bulgaria (14-15 November 2016)

The Black Sea Checkpoint coordinator took part in the following meetings:

- ✓ 5th EMODnet Steering Committee Meeting held in Brussels on 9 - 10 December 2015.
- ✓ 6 th EMODnet Steering Committee Meeting on 21- 22 June 2016, Brussels, Belgium

5. Next step

Next steps of the project include the following major milestones:

- ✓ the production of the Challenge targeted products;
- ✓ the definition of the assessment criteria and indicators for ‘appropriateness’, not included in the First DAR;
- ✓ the preparation of the Second DAR Report and the Second Panel meeting.

The work plan for these steps is described in detail in the Black Sea Checkpoint project proposal.