



GROWTH AND INNOVATION IN OCEAN ECONOMY – GAPS AND PRIORITIES IN SEA BASIN OBSERVATION AND DATA

D10.4 Second Panel Report (Bruxelles 13/03/2017)

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Executive Summary

The second MedSea Checkpoint Panel meeting was held in Bruxelles, February 13, 2017. This report documents the participants and the discussion about the Second Data Adequacy Report (DAR) of the MedSea Checkpoint project.

Panel members asked several questions and clarification on the Second DAR content which are answered reflecting the revision of the DAR.

Introduction

The aim of the Panel meeting was to evaluate the Second Data Adequacy Report (DAR) produced from the MedSea Checkpoint Consortium work in the second 18 months of the Project.

The expert Panel for the MedSea Checkpoint is composed of:

1. Monika Peterlin - environmental agency
2. Miguel Bernal - regional international organization for fisheries
3. Jan Erik Hanssen - private industry
4. Alberto Lamberti - academia - coastal engineering
5. Piero Lionello - academia - climate science of the Mediterranean Sea

All experts received copy of the draft version of the Second DAR Report one week before the meeting in Bruxelles in order to stimulate the discussion and provide concrete feedback.

Dr. Monika Peterlin and Dr. Miguel Bernal were not able to participate to the meeting. However Dr. Monika Peterlin provided her comments by email on February 11th.

Panel Meeting agenda and participants

The second Panel meeting was held in Bruxelles on the 13th of February 2017 at the Royal Flemish Academy of Belgium for Science and the Arts from 9:00 to 17:00 with the following agenda.

AGENDA

MONDAY, February 13 2017

Time	Subject: EMODnet MedSea Checkpoint Panel meeting	Speaker
8:30-9:00	People meet	
9:00-9:30	The development of the EMODnet Checkpoint service for the Mediterranean Sea	N. Pinardi
9:30-10:00	Introduction to Checkpoint metadata and indicators	E. Moussat
10:00-10:30	Demonstration of Checkpoint Service	S. Simoncelli
10:30-11:00	<i>Coffee break</i>	
11:00-12:00	The 2nd Adequacy Report	G. Manzella
12:00-13:00	Discussion and questions from experts and stakeholders	Moderator: S. Simoncelli
13:00-14:00	<i>Lunch</i>	
14:00-15:00	Preliminary Expert Report content discussion	Moderator: N. Pinardi
15:00-16:00	Discussion with Checkpoint Project Partners Closure of session with all project Partners	Moderator: S. Simoncelli
16:00-17:00	Final arrangements for Panel report	N. Pinardi
17:00	<i>End of meeting</i>	

In total there were 20 participants, 16 from partners, 3 experts and a representative of EMODnet secretariat. The list of participants is shown below

Name	Institute Affiliation	Signature
Partners		
Nadia Pinardi	INGV	<i>[Signature]</i>
Simona Simoncelli	INGV	<i>[Signature]</i>
Giuseppe Manzella	INGV	<i>[Signature]</i>
Claudia Cesarini	CLU	<i>[Signature]</i>
George Zodiatis	UCY	<i>[Signature]</i>
Gianna Fabi	CNR	<i>[Signature]</i>
Nora Tasseti	CNR	<i>[Signature]</i>
Lluís Gómez Pujol	SOCIB	<i>[Signature]</i>
Giuseppe Scarcella	CNR	<i>[Signature]</i>
Joaquín Tintore	SOCIB	<i>[Signature]</i>
Fabio Raicich	CNR	<i>[Signature]</i>
Nixon Bahamon	OCEANS.CAT	<i>[Signature]</i>
Federico Falcini	CNR	<i>[Signature]</i>
George Kallos	NKUA	<i>[Signature]</i> NO
Eric Moussat	IFREMER	<i>[Signature]</i>
Sofia Reizopoulou	HCMR	<i>[Signature]</i> NO
Chara Kyriakidou	HCMR	<i>[Signature]</i> NO
Yann-Hervé De Roeck	FEN	<i>[Signature]</i>
Vladyslav Lyubartsev	CMCC	<i>[Signature]</i>
Experts		
Jan Erik Hanssen	I-TECH	<i>[Signature]</i>
Alberto Lamberti	ONIRCO	<i>[Signature]</i>
Piero Lionello	UNISA	<i>[Signature]</i>
CONVAGH MCMEE L	SECRETARIAT	<i>[Signature]</i>

Meeting Presentations and further discussion

Four presentations were given in order to describe the project developments and the content of the second DAR. In particular:

1. Pinardi (coordinator) gave a general introduction to the methodology, the service and the DAR results.
2. Moussat (Ifremer) presented the metadatabase, the availability and appropriateness indicators and the overall methodology of the assessment process.
3. Simoncelli (INGV) gave a demonstration of the MedSea Checkpoint Web Portal and an overview of the 45 Targeted Products generated by the partners, how to access and visualize them from the challenges web pages.
4. Manzella (INGV) described in details the DAR2 results.

A discussion among the partners, the experts and the secretariat followed. The main issues raised and discussed are here provided.

1. **Jan-Bart Calewaert** (Head of EMODnet Secretariat) asked: Which would be the recommended frequency of a monitoring assessment?

Answer: Pinardi answered not less than 2 years. Manzella pointed out that it should be advisable to use the same methodology for all European basins. Moussat added that we need to improve how the metadata information is collected and measured, referring for example to data policies and the necessity to harmonize the indicator criteria. Pinardi emphasized that the assessment was done also collecting expert opinions that from a complementary set of indications about monitoring gaps that will be very useful until indicator statistics will be robust enough. However expert opinion about monitoring gaps is necessarily “Challenge” restricted, cannot go across the Challenges as the Checkpoint probably were supposed to assess. It is recommended to increase the number of challenges or the number of targeted products per challenge in order to increase statistics rapidly.

2. **Piero Lionello** inquired about the proposed 11 recommendations: “are those absolute or are somehow biased by the adopted approach?”. He had the feeling that another group of people could have obtained different results.

Answer: Manzella and Pinardi answered stressing the fact that the implemented methodology is objective but the results are affected by the insufficient statistics for each indicator. Even if the aim of the project was to provide recommendations on the monitoring gaps and not to implement a new methodology, a new method was developed that uses objective measures of quality but again the input data sets are fewer than needed to get appropriate statistical significance (i.e. only 1-5 input data sets for each characteristics were used).

Piero Lionello pointed out that information about data set quality control could have been introduced in our quality measures. The point is well taken and will be considered in a next phases of the project. At present, the selection of the dataset by the partners among all the possible input datasets identified in the Literature Survey could be taken as a proxy of the quality of the data set.

3. Discussion about the proposed recommendation n.7: “Connect EMODnet Portals to EU projects to act as a repository of all data collected by H2020 and future research programs.

The DAR2 results show that the majority of the data producers for Challenge products are EU Framework projects and these data should be made available for re-use through the EMODnet Portals.

Answer: Pinardi provides examples: the EUROSION project had no impact on the development in the sediment mass balance estimation because the data were lost after the project. Another example is CoCoNet project whose final produced data were not injected into an European database so they will possibly be lost. A possible solution could be that the EU call would specify in advance the data and metadata standard format to adopt and the policy for data sharing and cataloguing. Another suggestion is the forcing of the adoption of DOIs for data sets and the requirement for long-term archiving of the data.

4. The DAR2 identified a major gap in the opening and sharing of the fishery data. Fishery data are now managed by Institutional entities and they need to be opened to the research community.

Answer: Scarcella (CNR) raised the problem of standardization of fishery data. From 2002, there is a EU data collection framework with a strict methodology to be applied but the results are low level, they do not cover all species. Moreover, the southern part of the Mediterranean is a gap. The DAR2 results show that fishery data should be collected for re-use by an EMODnet Fishery Portal. MPA connectivity studies will benefit by that.

5. Gianna Fabi confirmed that fish impact (VMS) data are still not available from the Member States and if available they are not available as raw data but only post-processed. This constitutes a limit to many applications.

Answer: Pinardi pointed out that the DAR2 shows the missing link between the fishery research community and the fishery management authorities for the post-processing of the data. This is a serious gap and different solutions could be found to maintain sensible data information reserved yet allowing the data to be explored by scientists (i.e. sensible information could be removed from the data sets, like name and nationality of the vessel, etc.).

Panel Report

After the open discussion, the coordinator asked the experts to give their feedback on the DAR. The summary of the three experts questions and answers by the project partners follows.

Alberto Lamberti Feedback

1. **Comment:** The work done is complex and it may result difficult to communicate. How do we think to communicate the project results and information to a wide public. For instance the “platform movement” characteristics (i.e. AIS data or other vessel traffic data) provide more information than it appears from the report.

Answer:

One of the many issues in communication is the adoption of a common language with the clarification of the meaning of important terms used in various competing claims. EMODnet Checkpoints could advance the frontiers of knowledge as perceived by the various component of the societies. “As perceived by ...” is an important qualifier for the communication of Checkpoints results in a societal context. What is perceived by some professionals could be different from those perceived by others. A social epistemology approach would require first to make explicit how different participants to a discussion understand the terms they use. Then it would be necessary to converge on common understandings by sharing conventions. **The Mediterranean Checkpoint used the SeaDataNet ‘common vocabularies’ as the basis for the development of a communication strategy. In this common vocabulary each term is defined and explained after consultation at international level.**

All our characteristics are defined by P02 vocabulary definitions that are now reported in Annex 1 to the DAR. It is impossible to re-write these definitions at full length for questions of readability. We hope this is enough for the DAR. We have now added the mention to the SeaDataNet vocabulary in the Executive summary and the Introduction to make sure readers are aware of the choices made.

In order to clarify our results, the section on Key gap analysis (section 8) has been partially modified with a description of the usage of the input data in the Challenge products. We hope this clarifies the results and the nomenclature at least for the DAR2 gap analysis.

2. **Comment:** The definition of the yellow indicators between $\pm 10\%$ is very narrow. What about if we use $\pm 20\%$ as a filter? Could the results change?

Answer:

The Mediterranean Checkpoint Data Product Specifications (DPS) have been produced to assess the Input Data sets supplied to- and used by- the Challenges for the Targeted Data Products (TDP). As stated in the DAR2, a Data Product Specification (DPS) is a precise technical description of the data product in terms of the requirements that the product should fulfil.

Appropriateness indicators provide a quantitative information on 'How Much' the data fulfil the DPS requirements. In other words the indicators are a measure of the discrepancy or error between the DPS and the actual Upstream Data used by the product. They have been calculated as "percentage errors" and a threshold value ($\epsilon = \pm 10\%$) has been chosen in a subjective way.

However, on the basis of the Checkpoint metadatabase it was possible to assess the 'sensitivity' of the results to the threshold choices (ϵ) and the results were recomputed with $\epsilon = \pm 20\%$. We have now added section 6.2 that analyses the sensitivity to the score range. Results show that there is no impact at this stage for the final gap analysis.

3. **Comment:** The vocabulary may limit the communication of the results to the wide community. Maybe a smoother vocab, using common words when possible and reducing the use of acronyms, could be used to facilitate the communication.

Answer: We have thought to dedicate the last EMODnet newsletter to outline the DAR2 methodology and synthesize the conclusions in order to disseminate the results. However we have decided at this stage not to change the SeaDataNet vocabulary that we have decided to use from the beginning and that is used in the metadatabase.

4. **Comment:** Sediment mass balance info is not homogeneous. How would you build a possible database for sediment mass balance? The problem is to define the quantity of sediments transported offshore from the coast and also to quantify the shellfish contribution to sedimentation (it could reach a 80% contribution).

Answer:

At the meeting *Federico Falcini* specified the requirements that were considered in the analysis: 1) synopticity and 2) continuity. Then he suggested that a possible strategy could be to use satellite and modelling tools with some semi empirical parameterizations in order to implement an efficient monitoring system.

Lamberti: It would be partially adequate for the fine fraction but be careful about the coarser sediments on the bottom of the water column. The issue is also the sedimentation along the coast and not only at the river mouth.

Pinardi suggests a possible use of light penetration data .

Tintore' argues that sediment transport is a very local issue affected by the local environment characteristics and this is for him the main problem. The scales of the processes are about 100m in the near shore area.

Pinardi asked Lamberti: Do you agree that something has to be done in terms of a database construction?

Lamberti: Yes I do, starting from rivers monitoring but keeping the local scale. The inter-calibration between in situ and satellite may help to better understand how the in-situ data could be extracted into a larger region.

Pinardi made a parallel to SLA data from satellite and their inter-calibration with in situ data.

Pinardi suggests also that a better connection between CMEMS and Copernicus Land could be another starting point to design a monitoring system or an assembly database.

In the DAR2 Recommendation 4 has been changed as follows:

Recommendation 4: (critical action) invest in the development of a new monitoring strategy for the sediment mass balance at the basin scales, keeping however local relevance. Key elements of such new sediment mass balance strategy could include the integration of satellite with situ measurements and the fusion of coastal morphodynamics modelling and predictions with observations.

and Action 2 has been partially re-written:

Action 2: start a new R&D initiative for the planning and implementation of a monitoring and data access system for hydrology and sediment load at the coasts, as well as sediment bottom structure and composition. Such system should be based upon a basic satellite observing system for the rivers and coastal areas coupled to an in situ advanced monitoring/calibration/validation observational network and a morphodynamics modelling system.

5. **Comment:** Going back to the importance of a coupled monitoring system between satellite estimates of littoral sediment transport and in-situ measurement of river sediment load, the suggestion is to revise recommendation n.9 and rephrase it.

Answer: This is a good suggestion we have rephrased our recommendation accordingly. This is how it looks now:

Recommendation 9: make partnerships with the atmospheric observing and forecasting community (World Meteorological Organization-WMO) that has developed a global infrastructure and protocols for data sharing, recently including hydrology. Coupling the sediment flux measurements to such existing infrastructure could accelerate the effective remediation of the sediment mass balance data gap.

Jan Erik Hanssen Feedback

6. **Comment:** a comparison with the North Sea Checkpoint results could get some more conclusions or recommendations.

Answer: We have now inserted a new section (section 9.2) that discusses differences and similarities between the North Sea and the Mediterranean Sea Checkpoint results.

7. **Comment:** look at recommendation n. 3 and rephrase it specifying the results and data on which it is based.

Answer: We have now added under each recommendation the reference to the gaps and problems found in the data adequacy analysis and we have re-phrased recommendation 3 that now looks as follows:

Recommendation 3: (critical action) develop a metadata and data format system for maritime traffic data that will make possible to have ship traffic data available for the research community.

This recommendation derives from the monitoring gap extracted from Challenge 5, fishery impact assessment. A metadata system that will eliminate critical ship traffic information (i.e. ship name or other private/commercial information) but make available the data both in real time and delayed mode, will make possible to understand impact of fisheries and thus to solve a major data gap for the Mediterranean Sea.

Piero Lionello Feedback

8. **Comment:** Are the other regional Checkpoints implementing the same methodology? It would be desirable to define an European Checkpoint service to support decisions for future data collection initiatives that is stable and authoritative.

Answer: At this stage each Checkpoint developed, and it is developing, its own system. Only North Sea and Mediterranean Sea have concluded their analysis and a new section that compares the results in these two checkpoints has been added (9.2). Recommendation 10 (now nb 9) describes the need for the continuation and harmonization of the assessment system across Europe.

9. **Comment:** An indicator about QC/accuracy of the data is missing.

Answer: This indicator should be included among the availability indicators and it was not at this stage. The appropriateness indicator called “thematic accuracy” is partially considering this issue and it seems not to stand out as a major problem.

A proxy for this missing indicator could be extracted from the result that only 90 input data sets are used over the 266 initially. This could be due to insufficient QC/accuracy of the input data sets but it is impossible at this stage to say. The choice of a data set as input to a Challenge product is a matter also of reputation of data (expert knowledge on the input data set) and community assessments of data relevance and usability within the application domain (expert opinion). We have now added in the new section 9.2 a phrase acknowledging the possibility that the selection of the 90 out of the 266 potential input data sets could mean that quality/QC of the input data sets is low.

The phrase is here reported:

The North Sea Checkpoint reports that only 17% of the potential input data sets were used to meet the Challenges. In our case, the ratio is 90 over 266, i.e. 34% of potential upstream data sets were actually used for the Challenge products. The discrepancy between North Sea and Mediterranean input data sets is large but the common conclusion is that, as in the North Sea: “Such a falloff of appropriate data through the expert evaluation process indicates that, although there may not appear to be a data gap at first sight, the detailed analyses uncover gaps which do exist.”. Furthermore we argue that the falloff of the input data sets could be due to insufficient QC/accuracy of the input data sets but it is impossible at this stage to say. The choice of a data set as input to a Challenge product is a matter also of reputation of data (expert knowledge on the input data set) and community assessments of data relevance and usability within the application domain (expert opinion). This point will require more attention in the future development of the Checkpoint framework for Europe.

10. Comment: If the project objective is to provide recommendations and suggested actions for data and observation collection, it should be made clear that the results are strongly oriented by the challenges definitions.

Answer: We have specified in our executive summary and conclusions that our results are “emerging gaps for the basin scale monitoring system **in view of the 7 Challenges**”, we hope this is enough.

11. Comment: It would be desirable to know how could we score the recommendations according to an urgency criterion in urgent or less urgent. Is this feasible? Also considering that for characteristics among the different challenges pose different issues?

Answer: Following your suggestion we scored some recommendations as “critical” but we believe the real scoring system can only come from an authoritative process that is not yet in place for the Checkpoints and that refers to a priority among the Challenges.

Monika Pertelin feedback

Comment: From the point of marine assessment and management, results of your project are not very optimistic and show how much still needs to be done in the Mediterranean. There is one issue that kept surfacing a lot in the MSFD content – lack of data and coherent data management, especially in the Mediterranean. At the same time we have funding mechanisms in the Med for projects, where we are not ALLOWED to collect data (Interreg programs). We had several unsuccessful applications for projects, where data would be collected, but they were rejected from strange reasons. One of extremes for me was application for underwater noise monitoring –

proposal was rejected: explanation was that underwater noise has already been measured in the Baltic sea, so there is no need to measure it in the Mediterranean. From my work for EU Environment Agency, I can see that data from EU funded projects do not find their way to the 'outside world' (i.e. assessments and implementation of policies). Here the Commission should do something about the data from different projects repository and assure accessibility (by having a good metadata base at least).

Answer: We thank the expert for the insightful comment. We have now added in our new recommendation 7 a stronger statement on the necessity to have European and regional projects to collect relevant data to fill the gaps. The recommendation now reads as follows:

Recommendation 7: Connect EMODnet Portals to EU projects to act as a repository of all data collected and produced by H2020 and future research programs.

The DAR results show that the majority of the data producers for Challenge products are EU Framework projects (shown in the Literature Report¹) and these data should be made available for re-use through the EMODnet Portals. In addition it is necessary to increase the data collection initiatives in European and Interreg projects.

In conclusions, we would like to point out that a thorough check on all the indicators has been carried out and computations have been re-done to confirm the results. This check made it possible to add two new Tables, Table 5.2.2 for availability and Table 6.3 for appropriateness, that list the Characteristics in order of inadequacy. This allowed also to find a small error that reduced the Table 6.3 inadequate data sets from 17 to 15 without affecting however the general conclusions deduced from Table 8.1.

As an overview, two new sections, 6.2 and 9.2, were added to the DAR following the expert opinion. Finally recommendations have been reduced from 11 to 9 since the previous recommendation 5 and 8 were merged into one and the old recommendation 10 was eliminated because there was really not enough evidence from the DAR to put this as a recommendation.

Furthermore we added an acknowledgement section, which thanks the expert panel for the insightful comments.

¹ The Mediterranean Sea Literature Report is available here: http://www.emodnet-mediterranean.eu/reports_news/