Interactive comment on “Bridging the Gap between Observational Oceanography and Users” by Christiane A. Eschenbach

Anonymous Referee #1
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Author’s comments

Many thanks for your comments and suggestions!

Does the paper address relevant scientific questions within the scope of OS?
Especially the question of applicaton-oriented marine science and marine monitoring is a question of main interest for OS. “Bridging the Gap between Observational Oceanography and Users” tries to figure out the development process of COSYNA, the Coastal Observing System for Northern and Arctic Seas. The abstract states, that the analysis of data download has proved impact beyond academia.

→ In fact, the text is more guarded and says: „Analysis of data download provided some evidence for impact beyond academia.“

And this study should contribute to the emerging knowledge on integration of science and end-users.

Does the paper present novel concepts, ideas, tools, or data and are substantial conclusions reached?
The paper does not show an ex ante prepared scientific investigation process. But the author tries to bridge this gap by borrowing theoretical approaches from other disciplines, such as the iterative management method PDCA (plan–do–check–act or plan–do–check–adjust) and using approaches of transdisciplinary research and stakeholder interaction.

→ Also review 2 asks for more information on the PDCA cycle and the outline of a designed assessment. Therefore, an explanatory paragraph has been included (p 4, line 26):

„*The PDCA methodology is a tool to incorporate feedback and to break down the development, implementation, and continuous improvement of processes or products into small manageable steps. When applied to the life cycle of coastal scientific products, such as COSYNA products, stakeholder interaction would ideally be assessed in the following way.The first step would be to identify possible stakeholders by means of a stakeholder mapping exercise. During the initial phase of problem definition, consensus should be reached on the research question and the objectives of the project by all parties concerned, e.g. through a series of stakeholder workshops. It is essential that scientist and practitioners contribute their specific knowledge and speak to each other as equals. After common understanding is achieved during the „Planning“ phase, potential solutions should be generated and tested on a small scale ("Do" phase). For an initiative such as COSYNA this means to start with the development of one typical product. Thus, measuring and modelling concepts and devices are developed and established and a parameter field, e.g. current fields in the German Bight, is provided at a pre-operational level. During the „Check“ phase potential users would be asked for evaluation of and feedback on the pre-operational product. Assessment data should be gathered on a statistically sound basis with potential users from different groups. However, lack of resources often constrains the ideal number of stakeholders to involve and the activities that can be carried out. The results of structured quantitative and qualitative analyses should be fed back into the development cycle, meaning that aspects mentioned by potential users should really influence further product development. The "Do" and "Check" phases could be repeated several times to polish the product and its usability until all the stakeholders agree on the usefulness of the final product. Finally, the improved solution is fully implemented („Act“). Any evaluation of products and stakeholder processes requires success criteria and indicators that need to be set in advance (ideally with stakeholders).”*

A critical reading comes to the conclusion, that a requirements analysis for the dataportal COSYNA – and the described activities are not more or less such a requirement analysis - is declared in the article as a “stakeholder interaction process”.

→ In order to emphasize the fact that the whole process is important and that all the activities from the initial survey through to the external evaluation, interviews, workshops etc. are essential components of the COSYNA stakeholder interaction concept, the following sentences were added:

„The COSYNA stakeholder interaction concept follows a structured process encompassing a broad range of different interaction activities. The stakeholder interaction process continued as the initiative progressed and developed further with the development of the products. As is well known for projects, interactions in the beginning (initial survey, external evaluation etc.) had more influence on the design of the whole COSYNA initiative than later steps. During the initial phases data demands related e.g. to accuracy, data resolution and the design of measurements and approaches were a greater focus. During later stages, feedback of (potential) users on the pre-operational products, data presentation in the data portal and the user interface played a more important role. Later, during the implementation phase, interaction activities concentrated on fine-tuning and improving the usability of the products. During the course of the project the range of stakeholders changed accordingly: The range of interest groups addressed was broad in the beginning and later increasingly focused on key stakeholders. However, all the interest groups involved during the different phases contributed their specific practitioners’ experiences, and their specific demands regarding oceanographic data products, e.g. concerning parameters, types, resolution etc.. Thus, real-world questions were taken into account in the design of the COSYNA initiative.“

But stakeholder interaction would mean, that the stakeholder itself would directly influence the system and the kind of data, provided by the portal. But there is no indication, that such a real interaction process has taken place.

→ In order to make the stakeholder influence on COSYNA’s portfolio clear, the following sentence was included at the end of the section „Requirements of potential national and regional user groups“:

Thus, the COSYNA approach combining measurements and modelling was designed to meet these requirements. In accordance with the outcomes of the survey, the first COSYNA products to be realized were maps and forecasts of surface current fields in the German Bight. Data products on waves, temperature and salinity were next in COSYNA’s portfolio.

→ To point to the influence of the external evaluators, the following sentence was included at the end of the section „External evaluation of COSYNA products“:

Consequently, efforts were made to achieve more user-friendly data presentations and download possibilities (see section 3.3 and Breitbach et al. this volume).

Furthermore stakeholder interaction within a transdisciplinary process would mean, that different groups of stakeholders, e.g. NGO0s, public administration, citizen, tourism, fishermen would have been involved into a problem-centered investigation process, to come to a common solution.

→ In order to point to the different groups addressed in COSYNA, the following sentence was added into the section „Requirements of potential national and regional user groups“:

The initial survey addressed a broad range of organisations including science (universities and other research institutions), federal and state authorities, public administration, tourism, nature conservation, international and regional NGOs, private enterprises, fishermen, consulting groups, engineering companies etc..

In the discussion (p. 10) is stated, that stakeholder interaction and transdisciplinary orientations would have been established, during the planning process. The same abstract defines the objective of transdisciplinarity: “The core idea of transdisciplinarity is that different academic disciplines work jointly with practitioners to solve a real-world problem (Häberli et al. 2001)”. At least these objectives cannot be gained, just by involving the offshore wind energy into the consultation process as the paper shows in the Case Study. If there have been additional activities to work into broader scope towards

transdisciplinarity, these activities have to be pointed out. Otherwise the used concept of transdisciplinary research would not be adequate for the described activities.

→ As I'm well aware that our activities do not fulfill the criteria of real transdisciplinary research, I've been carefully using the term „transdisciplinary orientation" (instead of TDR). However, for those readers who might not be familiar with the concept of transdisciplinarity, I added some information on the core idea.
There was more than only the case study and I hope this is made clear now by the sentences added (see above).

The given reference to the process of product life cycle respectively PDCA just shows, that needs a continuing improvement, has to run through such an process. But where is the scientific value of this procedure? The scientific methods and assumptions are on different levels and do not always support the interpretations and conclusions.
Reading the article I steadily wondered , what could be the news from a scientific point of view. The Workflow process just led to a requirement analysis for data products. The following stakeholder interaction process has just been evaluating the provided data. And no wonder - business and science like to have good pre-processed no-cost data. At least the article contains no new findings or knowledgments, that are worth to be published in a high-ranking scientific journal.

→ Concerning the „lack of scientific value": This is a common, well-used argument levied against results derived at the interface of different scientific disciplines, and has often been criticized in the literature. Recently, some endeavours have been undertaken at national and international levels to identify appropriate success criteria and indicators.
I agree that the study is not a typical paper for a journal like OS. However, it adds valuable insights that are complementary to the overall COSYNA picture, so I would consider it worthwhile to include a paper looking beyond strict oceanography.

All the activities to develop the COSYNA dataportal are described in a well-structured and well readable form.

→ Of course, the stakeholder interactions described are related to the COSYNA data products - and these are presented in the data portal. However, in my opinion, this does not justify a description of these interactions only as „a requirements analysis for the data portal COSYNA".

The used literature is comprehensive and up-to-date. The objective of the paper – driving the ocean-monitoring more into a transdisciplinary and application-orientated direction – is creditable. But the scientific basis of the paper is weak. So I recommend to reject the paper.

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