

Interactive comment on “Developing European operational oceanography for Blue Growth, climate change adaptation and mitigation and ecosystem-based management” by J. She et al.

Anonymous Referee #1

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Written by leading scientists from EuroGOOS and the European operational oceanography community (<http://www.eurogoos.eu/>), this whitepaper presents in a clear, concise and well structured way knowledge gaps and scientific challenges that shall be addressed by the community for the next decade.

This paper is clearly written to arouse the awareness of the national and European research funding agencies to these challenges that request their support. However, the interest of this paper goes further this initial objective as it provides a rather fair and extensive description of the current operational oceanography landscape and helps identifying and explaining several emerging, often misunderstood but already important concepts such as operational ecology.

That being said, by definition, such a whitepaper defends subjective positions even if I would say most of the presented positions are largely shared by the community. As a consequence reviewing such paper is also a difficult task since reviewers' position is for sure as subjective as the authors' one.

I will therefore limit my review to two points that according to me are not fair enough or don't reflect the reality.

The first comment is about section 3.1 "Model development". This is a clear example of a subjective position. In response to the concept of "Unified Earth Modelling system" introduced by WMO, the Authors introduce the concept of "Unified Ocean Modelling system" or UOM. They define it as an ocean model able to simulate in a seamless and coupled way all the different subsystem models : waves, hydrodynamics –and not only ocean- , sediment transport, water quality and ecosystem. The authors present the concept of UOM as a brand new idea and clearly developed this long section (~150 lines between slide 16 to slide 20) in order to defend the vision of the CMEMS SAC members about the future developments of the models used in the framework of the Copernicus Marine Environment Monitoring Service (CMEMS). However, models such as for instance the Belgian COHERENS model (<http://odnature.naturalsciences.be/coherens/about>) or the Portugese MOHID model (<http://www.mohid.com/>) already fulfil the UOM definition. Being continuously developed and improved for the last 25 years, both models are used in operational oceanography applications and have worldwide user communities dealing with local, coastal, regional and basin-scale applications for short term forecast as well as for climate applications. As a consequence, the paper will really gain in pertinence and credibility if the Authors could refine their vision instead of just inserting the following poor disclaimer: "It is worthwhile to mention that the model development in the CMEMS strategy mainly focuses on the evolution of the existing global and basin scale operational models, new emerging models (...) and models for downstream services (...) have not been sufficiently addressed in the strategy" (slides 20 and 21).

The second major comment is about the introductory paragraph of “Modelling and forecasting” in section 4.1.1 “Operational oceanography in the coastal waters – State-of-the-Art ” in slides 29 and 30. The Authors suggest there that CMEMS plays a leading role to consolidate and homogenise the fragmented coastal forecasting community and has therefore taken over objectives and tasks of the ECOOP project. According to me, this is false. The ECOOP project has been closed out 5 years ago. Since then, some activities developed in the ECOOP project have been taken over by EuroGOOS ROOSes; other have been continued at Institute’s level; the remaining ones have simply disappeared by lack of financial support. For these 5 years, CMEMS and the previous MyOcean projects have plaid no significant role to structure the coastal forecasting community. Therefore, I would really advice the Authors to better explain their meaning. In particular, I’m wondering whether the sentence “Such objectives and tasks are now largely taken over by CMEMS” (line 27, slide 29) has just been added to better sell the subjective position of the CMEMS SAC members : “The research in this area has been identified as a CMEMS research priority - seamless interactions between basin and coastal systems” (lines 1 and 2, slide 30) or whether this sentence finds its origin in the delegation agreement Mercator-Océan has received from the European Commission to implement the Copernicus Marine Environment Monitoring Service.

To conclude my review, this article is a position paper listing the challenges that request the support of the main national and European funding agencies for the next decade. In case Ocean Science publishes such articles, I would advice the editor to accept it for publication provided the final manuscript takes into account the two comments I’ve pointed out.

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Discussion paper

