Ocean sustainability under global change

Top priorities for Norwegian research and prospects for collaboration

Summary from

Ocean sustainability under global change (Rapport fra Havforskningen nr. 36–2016)

IMBER - Future Earth Norway workshop

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Summary and key messages

In September 2016, the Integrated Marine Biochemistry and Ecosystem Research Project (IMBER, a Future Earth Research Project) and Future Earth Norway collaborated to convene a workshop to explore the top priorities for Norwegian marine research around ocean sustainability and prospects for collaboration, including with global initiatives such as Future Earth´s Oceans Knowledge-Action Network, over the next decade.

Addressing the complex sustainability issues facing the oceans requires the cooperation of a diverse range of academic disciplines (natural and social sciences, the humanities) as well as a multitude of actors from the public and private sector. More collaborative, disciplinary, interdisciplinary and integrated research will be needed. We were therefore proud to welcome a diverse group of high-level representatives from key organisations across Norway and Europe, including the FAO[1], IOC[2], IMR[3] and the Norwegian Department of Fisheries, Industry and Trade, with expertise in marine science, social science, economics, and global, national and local natural resource management.

[1] Food and Agriculture Organization
[2] Intergovernmental Oceanographic Commission of UNESCO
[3] Institute of Marine Research, Bergen

The meeting focused primarily on humans and their interactions with the oceans. There was a common experience that barriers exist that currently hamper transdisciplinary collaborations. Discussing those barriers emerged as one of the most important issues in the meeting. With such a varied mix of expertise, and the tight timeframe, group discussions and outcomes centred more around enabling interdisciplinary and transdisciplinary cooperation in marine research, rather than delving into specific aspects of oceanographic science. Nevertheless, much valuable information from a range of expert perspectives can be found in the presentation summaries following. The presentations are available for download at: http://hi.no/filarkiv/2016/12/imber_future_earth_norway_worshop_report_-final_1_dec.pdf/nb-no

A series of presentations set the global and local context and then the following gaps in marine research were discussed:

- Agreeing on a definition of a sustainable ocean
- Appreciating different values
- Acknowledging the limitations of models
- Gaps in knowledge due to management scales and lack of resources
- Incorporating different forms of knowledge
- Dealing with uncertainties
- Recognizing the power of normative goal setting
- Lack of successful interdisciplinary and transdisciplinary research
- The need for common platforms
- Society´s ownership of the ocean

In the next session, the participants split into four groups to discuss some of the knowledge and collaborations needed over the next decade in relation to specific aspects of marine research. These are listed in the table below:

Topic 1: Global marine ecosystem assessments and their role in regional management	Topic 2: Regional decision-making perspective	Topic 3: Socio-ecological research servicing policy needs	Topic 4: Modelling and scenarios
Overcoming problems concerning the scale of assessments	Scales of marine governance	Applying a systems approach at the local level	Know your audience
Choosing the methodology	Providing knowledge for regional and local managers	Answering the right questions and having the right objectives	Strengthening the connection between modellers and scientists
Bridging issues around scale and culture	Researchers collaborating with the community to highlight the value of the oceans, including leveraging citizen science	Build the profile of ecosystem services valuations, and recognise that the process is iterative	Visualize! It makes ecosystems easier to understand
		Educating for the future	We need more consideration on how to communicate uncertainty in the models

After further group work, the participants arrived at the following priorities list. More details can be found under each point within the report.

What research needs to be done?

- Improving integrated ecosystem assessments
- Assess and give guidance on how institutions should evolve in the next decade
- More research is needed into the trade-offs
- Create scenarios and visualizations
- Improve how we deal with uncertainties

What could the marine research community do?

- Focus more on solutions-oriented science
- Integrate, where relevant
- Work towards a common language and value-setting
- Self-reflect
- Try to catalyse long term inter- and trans-disciplinary research
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