

Project information

Keywords

Ocean health, ecosystem-based management, blue growth

Project title

Ocean Health in Transition (OHiT)

Year

2016

Project leader

Per Fauchald

Geographical localization of the research project in decimal degrees (max 5 per project, ex. 70,662°N and 23,707°E)

From 65°N, 12°E along the coast to 71°N, 31°E

Participants

Lead:

- Per Fauchald (per.fauchald@nina.no), Norwegian Institute for Nature Research (NINA) (per.fauchald@nina.no)

Administrative responsible

- Sidsel Grønvik (sidsel.gronvik@nina.no).

Partners:

- Institute for Marine Research:
 - o Erik Olsen
 - o Lis Lindal Jørgensen
 - o Gro van der Meeren
 - o Per Arneberg
- NIVA:
 - o Trine Bekkby
 - o Hartvig Christie
- NORUT:
 - o Eirik Mikkelsen
 - o Jannike Falk-Andersson
- UiT-Arctic University of Norway:
 - o Vera Helene Hausner
- International partners:
 - o Benjamin Halpern, NCEAS, University of California Santa Barbara
 - o Greg Brown, California Polytechnic University San Luis Obispo

Flagship

MIKON

Funding Source

Fram Centre (MIKON), Norwegian Institute for Nature Research, UiT-Arctic University of Norway

Summary of Results

Summary:

The growth in the blue economy is changing coastal ecosystems and communities. To guide ecosystem-based management, there is a need for developing measures of ocean health and analyze how industrial development is affecting sustainability goals. In the first year of OHiT, we have compiled a comprehensive database for computing and developing ocean health indices for Northern Norway. Data are collected from Norwegian management authorities, Statistics Norway and several research institutes. The work will be finished by the end of 2016. The datasets covers 81 coastal municipalities in Northern Norway, and time series are available for most of the variables. The datasets include detailed measures of fisheries, aquaculture, tourism, energy/mining, marine biodiversity, environmental measures, socio-economy and demography.

We have used the OHI framework (<http://ohi-science.org/>) as a basis for developing the Norwegian version of the ocean health index, which we have termed “*Kystbarometeret*”. The work of formulating the preliminary algorithms for the 10 sustainability goals in *Kystbarometeret* was the main task of a workshop held in September, and will be finished during a workshop in January 2017.

Based on the work in OHiT, a proposal for a four-year research project was sent to the program Marinforsk in NRC. If funded, *Kystbarometeret* will be implemented fully in 2017-2018. If not funded, a preliminary version of the *Kystbarometeret* will be developed, and the database will be used to investigate how the development in marine industries are related to socio-ecological sustainability goals along the coast of Northern Norway.

Highlights:

- OHiT is developing a Norwegian version of the Ocean Health Index. The index has been named *Kystbarometeret*
- *Kystbarometeret* consists of ten sustainability goals, specifically formulated for a Norwegian context
- A comprehensive database has been collected and compiled to develop and compute the sustainability goals in *Kystbarometeret* for 81 coastal municipalities in Northern Norway.
- The OHiT-database will be utilized to analyze how local growth in marine industries is related to sustainability goals.

Master and PhD-students involved in the project

None

For the Management

- “*Kystbarometeret*” developed in OHiT, might be used as sustainability goals for Ecosystem Based Management of Norwegian coastal areas.
- “*Kystbarometeret*” might guide Marine Spatial Planning on the municipality, county and national levels.
- Quantitative analyzes conducted on the extensive datasets compiled by OHiT will provide new knowledge on how indices of sustainability are related to the development of marine industries in Northern Norway.
- The analyzes will also provide new knowledge on the cumulative environmental impact of the marine industries in Northern Norway.

Published Results/Planned Publications

Scientific publication:

- Brown, G. & Hausner, V.H. (2016) An empirical analysis of cultural ecosystem values in coastal landscapes, Coastal and Ocean Management, in revision

Oral presentations:

- Fauchald, P. 2016. Ocean Health in Norwegian Arctic. NCEAS roundtable talk. 20 March 2016. NCEAS, University of California Santa Barbara.

- Fauchald, P. 2016. Ny miljøkunnskap fra store dataset. Foredrag på NINA-dagan, 19 October 2016.

Communicated Results

The database and the formulation of Norwegian indices of ocean health has been presented and discussed on workshops and meetings among the project members and together with the Ocean Health team at NCEAS, University of California, Santa Barbara.

The opportunities and challenges associated with quantitative formulation of sustainability goals was presented for researchers and managers at the NINA dagan in October 2016.

Interdisciplinary Cooperation

The research questions addressed by OHIT demands a broad interdisciplinary approach. All members of the research team have experience from interdisciplinary research and represent a broad suite of competence in marine ecosystem-based management, resource economy, sustainability science, and marine and coastal ecology.

Budget in accordance to results

The funding from Fram has been the only external funding for OHIT. From the grants, we have built an interdisciplinary research team, compiled an extensive database, formulated indices of ocean health, and developed a research proposal for the Norwegian Research Council.

Could results from the project be subject for any commercial utilization

No

Conclusions

If OHIT is successful in obtaining additional external funding, the extended project will develop new interdisciplinary methods for analyzing social-ecological systems. The extended project will allow a comprehensive involvement of stakeholders as well as including the local peoples' values and preferences in the definition of ocean health. The project will provide new interdisciplinary knowledge on how the growth in the blue economy affects ocean health.

Without additional funding, OHIT will finish the development of a prototype for "Kystbarometeret", and analyze the data in accordance with targeted questions related to sustainability and the development of marine industries.