



**BERGEN SUMMER
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Transdisciplinary partnerships for education are needed to obtain sustainable fisheries across the globe



UNIVERSITY OF BERGEN

▶ ▶ ▶ SDG Bergen Science Advice in collaboration with Bergen Summer Research School's 2021 PhD course

The sustainable development goal target 14.4 states to effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans. In order to achieve this, we need to take into account the nexus between SDG 14 “life below water”, SDG 16 “peace, justice and strong institutions” and SDG 4 “quality education”.

4 key points

- Overfishing is still increasing and continues to be a global issue threatening the eco-systems of the world's oceans
- There is considerable regional variation in the achievement of goal 14.4 with some fisheries showing improved management and others showing worsening trends
- Stronger institutions and justice system are crucial to ensuring sustainability and improvement of life under water
- Global, transdisciplinary partnership to improve education and secure the sharing of knowledge can contribute to collective learning of how to manage global fisheries

Introduction

Even though up to 10 % of the global population relies on fisheries for their livelihood (FAO, 2020), and sustainable development of fishery (SDG 14.4) was one of the prioritized SDGs for 2020, overfishing and unfair distribution of the ocean's resources continue to be major global issues.

Despite significant positive effects on the sustainability of countries adhering to the 1995 International Code of Conduct for Responsible Fisheries, global scale analysis indicates low compliance with the code. (Coll et al., 2013). A majority of the members of the Food and Agriculture Organization of the United Nations (FAO, 2020) have reported a need to access more human resources; training and awareness raising, showing the need for more transdisciplinary collaborations in the field (FAO, 2020).

If policies do not fit the complexities of the fisheries systems, they might address the symptoms but not solve the root of the problem (Degnbol & McCay, 2007). There is therefore the need to approach the problem holistically from a trans-disciplinary point of view. As a relatively new approach that tries to facilitate the understanding of the complexity of small-scale fisheries problems, trans-disciplinary collaborations and research provides us with tools and methods to look at the concerns and to inform policies. The approach urges the assembly of disciplines in recombining information in a way that “draws the mind to puzzle about connection between information elements” (Kerne, 2005).

Through social learning, team members become better positioned and confident to interact, and also are capable of developing the respect and empathy needed to work in a heterogeneous team (Pohl & Hadorn, 2008). Bringing together different and distinct disciplines and integrating them to investigate a research problem has been applied in small-scale fisheries research and studies. Choi and Pak (2006) refer to this concept as ‘multiple disciplinary’ research, while others use more common terms like multi-disciplinarity and inter-disciplinarity to describe their research. In different ways and in varying degrees, these approaches have applied the concept of a trans-disciplinary approach to identify problems of small-scale fishing industry.

Analysis

Indicator 14.4.1 distinguishes fish stocks that are biologically unsustainable, with abundances below the maximum sustainable yield (MSY) level, from those which are biologically sustainable stocks, with abundances at or greater than the level that can produce a MSY, to monitor. According to the FAO's latest report on the State of the World's Fisheries, the percentage of fish stocks that are biologically unsustainable has increased from 10% in 1974 to 34.2 percent in 2017 (FAO, 2020).

Despite increasing global focus on how to achieve more sustainable fisheries, unsustainable methods are still used in fishery across the world. There are major variations in how the fisheries are conducted, with overfishing and market demands threatening to ruin below water ecosystems and affecting biodiversity (FAO, 2020). Points which were highlighted at the International Symposium on Fisheries Sustainability (COFI) of 2020, showing the need for more rapid changes in the institutional arrangements and securing further development of sector specific policies (COFI, 2021). Thus, facilitating a more just system for sustaining below water resources in relations to SDG 14.4 and 16.

Institutions are a key concept in fisheries management discourse, because through institutions management systems work and therefore, they are essential to not only fisheries but fishers and the ecosystem itself (Jentoft, 2004). To ensure the norms, values and knowledge that is needed for sustainable fishing practices, we need healthy communities and strong institutions (Jentoft, 1999).

Institutions can provide standards, guidelines, perspectives, and warnings. Because of climate change, conditions are already changing for fishers nowadays and they will change even more in the future. Local communities are apt to implement rapid changes and thus developing their methods to achieve a more sustainable fishery. We need strong institutions to establish more transdisciplinary collaborations between the different actors in fishery and to make sure existing regulatory agreements are fulfilled. (COFI, 2021).

We are in urgent need of strategies for scaling capacity development in data sharing especially in technically limited countries and regions. It is necessary to work globally to be able to impose and maintain sustainability. The increasing use of artificial intelligence can increase the accessibility and use and support the data sharing, collaboration and inclusiveness globally. Moreover, it is important to educating children on the new data and development globally in order to ensure the continuation in sustainable fishery. COFI (2021).

If fishers receive the right kind of education about the dangerous effects of some fishing practices, there will be good environmental condition for life below water which would provide the necessary condition for enough seafood. Fishers would then get enough to provide food for nourishment and a better livelihood for themselves. Quality marine education is needed to inform the culture, religion, and the way of life of the fisherfolk, especially those residing along the shores of the sea. This is possible within the framework of vibrant institutions and justice systems.

Conclusions

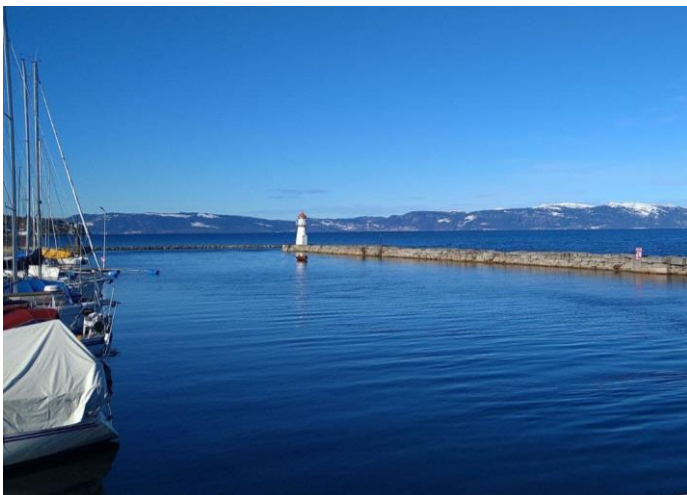
Fish provides more than 3.3 billion people with 20 percent of their average per capita intake of high-quality animal proteins, as well as with essential amino acids, fatty acids and micronutrients (FAO, 2020). Global pressure on fisheries through overfishing, illegal, unreported and unregulated fishing continues to put the sustained supply of already limited fisheries resources further at risk. Strong institutions to regulate such harmful practices provide a promising tool to sustainably harvest and manage our valuable but scarce fisheries resources in the long run (Costello et al., 2008). Yet the adoption, implementation and enforcement of institutions and sustainable management practices vary considerably between fisheries across the globe.

The continued variations in how sustainably fisheries are managed and indications of low compliance with the Code of Conduct, shows the need for arenas for more cross-cultural collaborations and transdisciplinary knowledge exchange. Reports indicate that managed well, fisheries can contribute to a more peaceful and equitable world (FAO, 2020).

Concerted international efforts, partnerships, and new forms of collaboration at the level of practitioners, as well as scientists and policymakers are crucial in order to support those lagging behind and advance education on sustainable fisheries management and comprehensive implementation of institutions on a global scale. With widespread quality education on the benefits and accessible options of sustainable fisheries management, as well as collaboration on the development of needed alternatives, stakeholders in fisheries can be empowered and supported to make a move towards the adoption of institutions.

Better institutions are also needed to manage sustainable fisheries and practices friendly to life below water which will lead to the possibility of more stability in marine fish stocks and subsequently better livelihoods for the fisherfolk.

Thus, in order to further the achievement of SDG target 14.4, it's interlinkages with SDG 4 and SDG 16 need to be recognized and capitalized on.



Recommendations

Establishing an equitable digital meeting ground for knowledge sharing and education for different scale key fishery actors.

Quality marine education which is aimed towards all groups of stakeholders is impetus for sustainable fisheries and life below water.

Global partnerships to enforce existing policies and help build stronger institutions which reflect our common norms towards fisheries.

Further relevant SDGs:

IMPRINT

SDG Bergen Science Advice in collaboration with Bergen Summer Research School's 2021 PhD course holders professor Birgit Kopainsky, Dr. Hiwa Målen and Dr. Ingunn Johanne Ness.

Relevance to the 2030 Agenda

SDG 14.4 is one of the ten targets under SDG 14: *Life below Water*, building towards the 2030 Agenda; sustainable development of fishery was one of the prioritized SDGs for 2020, but overfishing and unfair distribution of the ocean's resources continue to be major global issues.

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Partners



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