Food and Agriculture Organization of the United Nations

FAO elearning ACADEMY

International Technical Webinar
Deep sea fisheries and their management in the high seas: An introduction and review of recent developments

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Questions and Answers

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1) **Some countries cannot have access to deep sea fisheries for ability to conduct data collection. What's FAO Role to support deep sea fisheries as well as biodiversity management conservation?**

    The GEF funded, and FAO implemented Deep-sea Fisheries (DSF) Project is supporting regional fisheries management organizations (RFMOs) to sustainably manage DSF under their mandate in areas beyond national jurisdiction (ABNJ). The key objective of the project is to ensure that DSF in the ABNJ are managed under an ecosystem approach, thus reducing impacts on biodiversity.

2) **Will this course cover SDG 14 and other relevant SDGs supporting DSF?**

    The e-learning course "Strengthening deep-sea fisheries management in areas beyond national jurisdiction" aims to provide an introduction to the management of DSF in the ABNJ, covering both the policy and legal, as well as the operational aspects of management, and outlining the roles and responsibilities of States at both national and regional levels. The course does not cover SDG 14 and other SDGs per se, but its contents contribute to achieving SDG 14.

3) **Does the project's focus on sharks mean the exclusion of other deep sea species? It also seems that the North African region does not appear in the partners?**

    The project focuses on improving the management of DSF in ABNJ, including reducing impacts on biodiversity, especially deepwater sharks and vulnerable marine ecosystems (VMEs) such as deepwater corals and sponges. The North African region is covered in the project through the partnership with GFCM.

4) **What are the potential environment impacts of deep sea fisheries and how can sustainable fishing practices be implemented to mitigate them?**

    In general, it is the "significant adverse impacts" that we are trying to avoid with our deep sea fisheries; these are impacts severe enough to result in long-term reduction on populations or ecosystem health. This is mainly limited to long-lived vulnerable species like seabirds, turtles, deepwater corals and sponges, deepwater sharks, and the like. Most fisheries adopt measures to ensure these do not happen, which can close areas to fishing in certain places or at certain times.

5) **What impacts does deep-sea fisheries have on the marine ecosystem particular in terms of biodiversity loss and habitat degradation?**

    Deep-sea fisheries are conducted with fishing gear that comes into contact with the seafloor at depths of between 200 to 2000m. This may be bottom trawls, gillnets, longlines or pots. The largest concerns are for vulnerable marine ecosystems, which was spoken about in the webinar. These are mainly corals and sponges. To identify these areas can be challenging, but when identified they are usually closed to bottom fishing to provide protection.

6) Is there any role of veterinarian in the field of aquatics?
Veterinarians can play a role in aquaculture but little in deep sea fisheries.

7) Is there involvement of technology such as AI for the monitoring and control of DSF or DSF management measures?
Many technologies are used to help manage fisheries. Artificial intelligence is relatively new but we are exploring its use to help on-board observers identify certain similar-looking groups of fishes. In this respect, our project is focussing on a "smart" identification key that we hope will assist observers in accurately recording deepwater shark catches.

8) For the SPRFMO, are the CMMs available online?
Yes, the SPRFMO CMMS are available at:
https://www.sprfmo.int/fisheries/conservation-and-management-measures/

9) To Craig Loveridge: Are seabird collisions with trawl cables and net interactions observed and recorded as part of your 100% observer cover data protocols? If so what % of observer data collection protocols are dedicated to collecting this data? Is there data or figures available on the levels of seabird interactions for the fisheries in the area publicly available? Are the data protocols available?
The answer is yes, our seabird measure requires flag States to report annually, on the seabird mitigation measures used by each vessel flying their flag and fishing in the Convention Area, as well as any observed seabird interaction data and the level of observer coverage focussed on recording seabird bycatch.
This information is in the annual reports to the SPRFMO Scientific Committee meetings alongside a report on bycatch of species of concern in these fisheries the 2023 meeting with these documents is here:
https://www.sprfmo.int/meetings/scientific-committee/11th-sc-2023/

10) Great presentations, thank you. There has been a lot of information regarding collection of data. Where are these data stored and can they be assessed by all?
Sustainable fisheries management required data. This falls into two types: data to ensure measures (rules) are followed, and data for scientific assessments to provide advice on stock status and future catch limits. Most (but not all) of this data is available on the public sections of the RFMO websites, though some of it is quite technical. Global catch statistics are also on the FAO fisheries webpages.

**11) Could Mr Bernal give us extra information about DSF observer program especially training, and recruitment process?**
In the framework of the current MedSea4Fish programme (https://www.fao.org/gfcm/activities/fisheries/cooperation/medsea4fish/en/), the GFCM's capacity development programme for the Mediterranean Sea, the Secretariat is enhancing the collection of data on vulnerable species (namely elasmobranchs, marine mammals, seabirds, sea turtles and macrobenthic invertebrates) in several countries of the Mediterranean and Black Sea, covering main vessel groups (e.g.
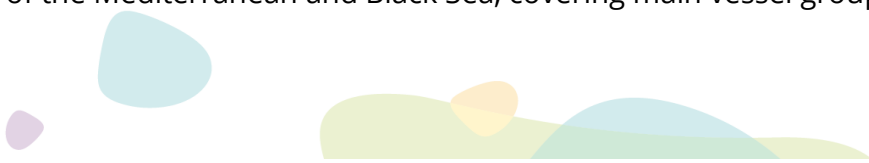
trawlers, purse seiners and small-scale fisheries) and not specifically but including DSF. Both the collection of data on incidental catch of vulnerable species fisheries and dolphin depredation occurs through commonly published methodologies. (https://www.fao.org/gfcm/publications/series/technical-paper/640/en/ and https://openknowledge.fao.org/handle/20.500.14283/cc2943en). The training and the recruitment process is lead at the national level and under the CPs responsibility.

12) **What would be the scope for a university or Institute to co-create a course with FAO?**

The FAO elearning Academy overall objective is "universal education" offered as a global public good, to anyone, at anytime and anywhere in the world, thus promoting gender and social equality in the access to education…

The FAO elearning Academy has created many University Master's and Post Graduate Degree Programmes, with various universities and university networks worldwide. In fact, Universities are among the most valuable partners of the FAO elearning Academy. Academia is involved in the design, development and use of the FAO elearning courses, which are integrated as part of University learning programmes. The FAO elearning courses can also be used to create personalized and professional learning paths, associated with University micro-credits.

Integrating FAO elearning courses, provides a huge advantage to students, who can, from one side, obtain an official University Degree from the University and from the other, be granted the FAO digital badge, that certifies the competencies, acquired through the courses.

As you are aware, the FAO elearning Academy is adopting the Digital Badges Certification System, to certify the acquisition of competencies, in order to progress talents within organizations for in-service professionals and increase employment opportunities, for university students, who are entering in the professional world https://elearning.fao.org/mod/page/view.php?id=5179

The integration of the FAO competency-based elearning courses, designed and developed by various experts worldwide, using a collaborative approach, allow Universities to raise education standards, and better equip students and young professionals with employability skills and competencies.

13) **Bottom fishing paying close attention to bottom trawls, impacts the bottom of the sea and its fauna. What has been done to cope this form of fishing?**

This is the subject of the *Review of the implementation of the DSF Guidelines* and recommend reference to this for further details.

14) **How are international regulations and governance mechanisms addressing the challenges of managing deep-sea fisheries in the high seas, and what recent developments have occurred in this regard?**

The international instruments relevant to the management of deep-sea fisheries in the ABNJ are outlined in Lesson 2 of the FAO E-learning course "Strengthening deep-sea fisheries management in areas beyond national jurisdiction". The most relevant

instrument is the *International Guidelines for the Management of Deep-sea Fisheries in the High Seas.* The *Review of the implementation of the DSF Guidelines* highlights the recent developments in the implementation of these guidelines.

15) **Is this course linked to any other FAO e-learning courses?**
Monitoring and preventing ciguatera poisoning
https://elearning.fao.org/course/view.php?id=648
The fisheries performance assessment toolkit
https://elearning.fao.org/course/view.php?id=530
Compiling data on the contributions of small-scale fisheries to sustainable development https://elearning.fao.org/course/view.php?id=1050
Fish loss assessment methods https://elearning.fao.org/course/view.php?id=1031
Food loss and waste in fish value chains
https://elearning.fao.org/course/view.php?id=567

16) **What exploratory/new deep sea fisheries are taking place within the SPRFMO convention area?**
There are 4 new/exploratory fisheries occurring in SPRFMO; one targets crabs/ lobster by use of traps while the other 3 target toothfish using bottom long line methods.

17) **Regarding the Scientific Observer Programme on DSF to be implemented in the Med, how challenging do you envisage might it be? Who will be responsible for its implementation and enforcement? And who will be funding it?**
A large percentage of vessels in the Mediterranean are small-scale vessels. There are a few industrial vessels targeting high value species and these should be the priority for an observer program and the complete coverage of DSF with Vessel monitoring systems (VMS) is the main challenge in the Mediterranean Sea as of now. In the framework of the current MedSea4Fish programme (https://www.fao.org/gfcm/activities/fisheries/cooperation/medsea4fish/en/), the GFCM's capacity development programme for the Mediterranean Sea, the Secretariat is enhancing the collection of data on vulnerable species (namely elasmobranchs, marine mammals, seabirds, sea turtles and macrobenthic invertebrates) in several countries of the Mediterranean and Black Sea, covering main vessel groups (e.g. trawlers, purse seiners and small-scale fisheries) and not specifically but including DSF. The implementation of the observations programmes is under CPs responsibility.

18) **In many areas like the Northern Bay of Bengal data on biological community, particularly fisheries in the deep sea are very rare. Data are often sporadically available to specific countries/institutes. Can FAO play a role in establishing a platform to share those data?**
In the ABNJ, data on the retained and landed fish catches are well documents and available of RFMO and FAO websites. The review found that catch data for discarded species is less well reported, and this is something the DSF project is striving to improve. Ecosystem level data is very expensive to collect, but when available is on RFMO websites

and in scientific publications. Information on deep-sea fisheries management measures is found on FAO's VME DataBase and also on RFMO websites.

19) What are potential shifts in management of deep sea fisheries that may occur with the ratification of the BBNJ Agreement? How can RFMOs help guide the development of BBNJ Agreement management frameworks?

The BBNJ Agreement requires states, in implementing the agreement, to not undermine relevant international instruments and existing sectoral organizations including fishery bodies (IFBs). The Agreement also requires consultation with IFBs on various activities including the establishment of MPAs and other area based-management tools (ABMTs), conducting environmental impact assessments (EIAs) as well as other areas that require consultation. A total of 16 RFMOs, including the seven project's partners have the regulatory competence to conserve and manage fisheries in ANBJ. The BBNJ Agreement processes and decision-making could benefit from the institutional and regional fisheries regulatory frameworks and conservation and management measures (CMMs) in place which enable States, in implementing the BBNJ Agreement to, among others, build on the decisions of existing IFBs and avoid duplication and conflict. Additionally, it is crucial for RFMOs to remind states and interested entities that the BBNJ Agreement was not negotiated and adopted in a regulatory vacuum and emphasize their continued relevance in the conservation and management of BBNJ by demonstrating that they are effective in making science-based decisions and ensuring compliance with such decisions.

20) For Tony: Is there any cross-sectoral mechanism to address the impacts of non-fishing activities on vulnerable marine ecosystems, which have already been protected by RFMOs?

VMEs are closed to bottom fishing by RFMOs in the ABNJ. Under existing international instruments, they are not closed to other human activities, and this may be further complicated by extended shelf claims where the seafloor under parts of the ABNJ can be under national jurisdiction. There have always been informal mechanisms to discuss these issues among interested parties, but formal cross-sectoral mechanisms still need to be developed. It will be interesting to observe how states (through RFMOs, ISA, CBD and the BBNJ Agreements) will address this issue.

21) What are challenges of the deep-sea fisheries management and vulnerable ecosystem protection?

Deep-sea fisheries occur at 200-2000m depth with bottom trawls that require smoother ground with gentle slopes and softer sediments. Gillnets and longlines can be set on rougher ground. VMEs, comprising mainly of deepwater corals and sponges, typically like to attach themselves to hard rocky, rough ground, where bottom fishing is difficult to conduct. Finding VME areas in these very deep waters is difficult, but once found they can be protected by closing the area to bottom fishing. In addition, these are protocols that immediately stop vessels fishing in an area after they accidently catch higher numbers of VME species. There are some sea pens, corals and sponges that can be widely distributed on soft, muddy habitats, and these are difficult to protect.

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