CONCEPT NOTE FOR ICCAT ECOREGION WORKSHOP "IDENTIFICATION OF REGIONS IN THE ICCAT CONVENTION AREA FOR SUPPORTING THE IMPLEMENTATION OF ECOSYSTEM BASED FISHERIES MANAGEMENT"

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SUMMARY

The overall aim of the workshop is to advance in the identification of candidate ecologically meaningful regions that can serve as a basis to produce a more integrated ecosystem-based advice, and thereby support the implementation and operationalization of ecosystem-based fisheries management (EBFM) in the International Commission for the Conservation of Atlantic Tunas (ICCAT) convention area. The candidate regions should have boundaries that make ecological sense, and are practical in informing fisheries management. The workshop will gather CPC national scientists and external experts from different scientific disciplines (e.g. biogeography, oceanography, ecology, fisheries and fisheries management in the ICCAT area) to develop a "proof of concept" for broad-scale regionalization of the ICCAT convention area.

RÉSUMÉ

L'objectif général de l'atelier est de progresser dans l'identification de possibles régions écologiquement significatives qui peuvent servir de base pour produire un avis écosystémique plus intégré, et ainsi soutenir la mise en œuvre et la mise en marche de la gestion des pêcheries basée sur les écosystèmes (EBFM) dans la zone de la Convention de la Commission internationale pour la conservation des thonidés de l'Atlantique (ICCAT). Les régions candidates doivent avoir des limites qui ont un sens écologique, et qui sont pratiques pour renseigner la gestion des pêcheries. L'atelier réunira des scientifiques nationaux des CPC et des experts externes de différentes disciplines scientifiques (par exemple, la biogéographie, l'océanographie, l'écologie, la pêche et la gestion des pêcheries dans la zone de l'ICCAT) afin de développer une preuve conceptuelle pour une régionalisation à grande échelle de la zone de la Convention ICCAT

RESUMEN

El objetivo global del taller es avanzar en la identificación de posibles regiones ecológicamente significativas que puedan servir como base para formular un asesoramiento basado en el ecosistema más integrado, apoyando la implementación y puesta en marcha de la ordenación pesquera basada en el ecosistema (EBFM) en la zona del Convenio de la Comisión Internacional para la Conservación del Atún Atlántico (ICCAT). Las regiones candidatas deberían tener límites que tengan sentido ecológico y que sean prácticas para aportar información a la ordenación pesquera. El taller reunirá a científicos nacionales de las CPC y a expertos externos de diversas disciplinas (por ejemplo, biogeografía, oceanografía, ecología, pesca y ordenación pesquera en la zona de ICCAT) para desarrollar una demostración conceptual para una regionalización a gran escala de la zona del Convenio de ICCAT.

KEYWORDS

Ecoregions, tool, regional challenges, synthesize advice, EBFM

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1. Background

ICCAT has committed to implement EBFM in accordance with internationally agreed standards. The identification of spatial units or regions that make ecological sense is an important element of effective ecosystem planning and one of the starting points when operationalizing the EBFM process in a region (Fletcher et al. 2010, Staples et al. 2014). Regionalization of the ICCAT convention area can provide a foundation for developing a wide range of scientific products including integrated ecosystem assessments, ecosystem report cards, and large-scale ecological modelling to assist in the production of more integrated ecosystem-based advice to the Commission (Zador et al. 2016, Koen-Alonso et al. 2019).

In 2017, an EU funded project conducted some initial work towards a broad-scale delineation of the Atlantic and Indian Oceans into ecologically meaningful regions. These ecological regions were large enough to be practical to provide ecosystem-based advice to inform fisheries management in the context of tuna and billfish fisheries (Juan-Jordá et al. 2019a). This project developed and tested an evaluation criteria to identify regions, mainly based on: (1) the existing knowledge of biogeographic classifications of the pelagic environment, (2) the spatial distributions of major tuna and billfish species, and (3) the spatial dynamics of the main fishing fleets targeting these species. Based on these evaluation criteria, seven preliminary candidate ecoregions were proposed within the ICCAT convention area (Todorovic et al. 2019), and two preliminary candidate ecoregions were proposed in the IOTC convention area (Juan-Jordá et al. 2019a).

In 2018, this initial work was presented at the ICCAT Subcommittee on Ecosystems (SC-ECO) and the IOTC Working Party on Ecosystems and Bycatch (WPEB), as a conceptual scientific exercise to discuss its potential utility and to explore avenues for future work. The WPEB recommended convening a workshop in 2019 to provide advice on the identification of draft ecoregions based on a revised set of criteria and to foster discussions on the operationalization of EBFM in the IOTC convention area. This IOTC workshop took place in September 2019 with the participation of CPC national scientists and external experts. The most important output of this workshop was the constructive and technical discussions that took place in framing the general process of ecoregion delineation, from defining a checklist evaluation criteria, to evaluating data inputs and methods, and examining and refining candidate ecoregions based on expert knowledge within the Indian Ocean. This process resulted in a draft proposal of seven ecoregions within the IOTC convention area (Juan-Jordá et al. 2019b). In 2019, the WPEB recommended a second IOTC Ecoregion workshop to refine the entire process and to consider the expert advice and feedback received in the first IOTC ecoregion workshop.

In 2020, the process used to delineate candidate ecoregions in the IOTC convention area was presented to the SC-ECO. From this experience, the SC-ECO recommended convening a workshop in 2021 to advance in the identification of draft ecoregions and foster discussions on their potential use to facilitate the implementation and operationalization of EBFM within ICCAT.

2. Main objectives and tasks

The overall aim of the workshop is to advance in the identification of ecologically meaningful regions that can serve as a basis to produce integrated ecosystem-based advice, and thereby support the implementation and operationalization of EBFM in ICCAT.

The workshop will be structured with the following tasks:

Task 1. Review several world case studies (e.g. NAFO, ICES, CCAMLR, USA, Australia) in order to understand how pelagic regionalization have supported the implementation of EBFM in other organizations and countries.

Task 2. Review the current reporting structure of ICCAT data and stock boundaries and discuss potential constraints on using ecoregions to structure ecosystem-based advice.

Task 3. Discuss and develop a check list of evaluation criteria which identifies the factors to be considered when defining ecoregions in the ICCAT convention area.

Task 4. Review existing biogeographic classifications in the Atlantic Ocean, which are often used to inform the delineation of ecoregion boundaries, and discuss their relevance in the context of ICCAT species and its fisheries.

Task 5. Review existing data sets in terms of availability, quality and completeness to guide the choice of key data inputs for deriving the draft ecoregions. The data sets revised will include (i) existing biogeographic classifications, (ii) spatial distribution and catches of ICCAT species (e.g., oceanic tunas, billfishes, sharks, neritic species, other bycatch species), (iii) spatial distributions of ICCAT fisheries (e.g., baitboats, longlines, gillnets, purse seines) and (iv) other potentially relevant data layers.

Task 6. Develop a baseline ecoregion proposal analyzing selected datasets using spatial analysis that will be adjusted with expert knowledge. The spatial analysis will include examining the spatial patterns of species compositions and fishing fleets dynamics across multiple biogeographic provinces, and clustering analyses to group biogeographic provinces according to their similarity in terms of species composition and fisheries composition. The use of quantitative approaches that link different data layers describing the ecosystems including fisheries, coupled with expert advice are often used to ecoregion delineation.

Task 7. Test and validate the usefulness of the candidate ecoregions with respect to monitoring large scale changes in the ecosystem.

3. Expected outputs

- An evaluation checklist criteria with major factors to be considered to guide the development of draft ecoregions.
- An understanding of the data layers and methods used for deriving the ecoregions with its strengths and weaknesses.
- A proposal for candidate draft ecoregions.
- A workshop report with an executive summary with the main outcomes to be presented at the SC-ECO meeting in 2022

4. Organization and participants

A four-day workshop is proposed for the Fall 2021 (date to be determined). Depending on the evolution of the COVID-Pandemic, the workshop could be in person, online, or a combination of in person and online.

The ICCAT SC-ECO is organizing the workshop and the Commission has budgeted $15000 to support the travel costs of 6 -7 CPC scientist to the workshop. The workshop aims to gather around 20 experts from different institutes and organizations including CPC scientist and external experts, but the final number of participants will depend on the format of the workshop (in person, online or hybrid) and the available funds.

A pre-workshop analysis and documentation will be prepared and provided on the OwnCloud in advance to inform discussions at the Ecoregion Workshop. This pre-workshop analysis will provide the preliminary work and supporting documentation needed to inform the discussions related to the Task2-7 described above. External experts will be invited to present relevant case studies (e.g. ICES, NAFO, CCAMLR, USA, Australia) during the workshop.

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