The Way Towards the Yucatan Octopus Sustainability in the Misinformation Era: Challenges and Opportunities

El Camino Hacia la Sostenibilidad del Pulpo en Yucatán en la Era de la Desinformación: Retos y Oportunidades

La Voie Vers la Durabilité du Poulpe du Yucatan à L'ère de la Désinformation: Défis et Opportunités

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EXTENDED ABSTRACT

Mexico is one of the largest Octopus producers in the world, ranking first in America and third globally. This fishery is extremely important in Mexico, ranking seventh nationally for fishery production and fourth for its economic value. Its value reached 250 million dollars in 2021, employing more than 15,000 people directly and indirectly. There are 1,200 fishing permits representing 5,600 vessels exerting fishing pressure; and 80% of the production is exported to Europe and Asia (CONAPESCA, 2020).

Being a resource of high commercial value and having numerous stakeholders involved in the economic, political and social sectors, the fishery faces great challenges such as greenwashing, unregulated fishing gear, illegal fishing sizes, exceeding the catch quota allowed per season, in addition to the massive dissemination of unofficial information and rumors about the fishery, causing mistrust in the sector, inside and outside the country. But what is being done to deal with this? This session aims to offer a critical look at the sustainability of a fishery with a global impact, and to present the coordinated, evidence-based effort of the value chain stakeholders to approach fisheries sustainability standards.

In 2019, producers and companies in Yucatán interested in the sustainability of the fishery and competition in added value markets, launched a Fishery Improvement Project (FIP) (Fishery Progress, s.f.). This project is a multi-stakeholder effort to address the environmental, social, economic, and management challenges of the fishery along the Marine Stewardship Council (MSC) standard. Currently the FIP is made up of six fishing organizations and four markets and retailers, covering 10.8% of Yucatán octopus production and integrating new stakeholders regularly.

In the Yucatan Octopus FIP, actions are implemented to improve the lowest rated indicators regarding stock health, effect on ETP species and governance, as well as enforce the application of human rights and fisheries' social policy principles, with the aim of achieving MSC certification by 2024. To maintain the health of the stock, fishing monitoring is carried out by the FIP fishing organizations (FFO) through the digital logbook PescaData (PescaData, s.f.) where information on the fishing effort, octopus biometrics and use of bait is registered. To broaden the octopus stock information, a stock assessment methodologies workshop was held to compare different models used by experts from academia (five Universities and Research Center), FIP participants, NGOs, and the federal fisheries research agency (INAPESCA), with a scientific paper submitted for peer-reviewed as a result.

To minimize environmental impacts, FFO monitor the use of bait by documenting it in PescaData, additionally providing photographic evidence, and purchase invoices. PescaData allowed to improve an indicator score related to ETP species use as bait, since no ETP species have been registered. Additionally, surveys with fishers, genetic analysis and eDNA analyses are being carried out to corroborate the species that are being used as bait. With these information management strategies for the bait can be proposed.

Regarding management effectiveness, a monitoring of the Fishery Management Plan (FMP) was carried out, obtaining that 40% of the indicators are poorly implemented (Fig. 1). To update the FMP and National Fishery Chart, collaborative workshops with the fishery stakeholders and governmental authorities will be performed.

FIP stakeholders settled the basis for governance, establishing the ethical principles, rules and regulations for FIP participants, communication rules, integration fee, participants financial contribution, steps to integrate interested stakeholders, gradual sanction process when ethical principles are violated, and crisis and conflict management process. These community agreements promote the effective management of the resource, in the absence of government governance tools. To ensure compliance with the regulations and FIP rules a random audits process is developing. This FIP is the first in

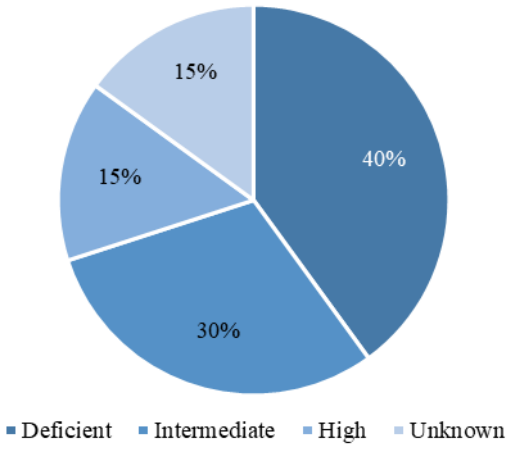

Figure 1. Monitoring implementation of the Fisheries Management Plan for octopus (*Octopus maya* and *O. vulgaris*) in the Gulf of Mexico and the Caribbean Sea (Suasnávar-Imán et al. 2021).

Mexico to develop and implement this process in small scale fisheries.

The FIP also addresses issues related to Human Rights and Social Policy. During 2022 the human rights and code of conduct were presented to the FFO, the vessel list was published and a voluntary Social Responsibility Assessment (SRA) was performed. SRA evidenced the need for actions to improve the three principles (Fig. 2). The workplan to address high risk scores is still in progress. However, these actions have allowed fishing workers to know their rights and to access to a grievance mechanism if their rights are violated.

As conclusion, despite the complexity of the fishery, misinformation and bad practices, the FIP has built trust among FIP participants, based on transparency and evidence. It has promoted collaborations between academia, government, fisheries authorities and fishing organizations, to provide valuable science-based data and to inform decision making. PescaData is a useful tool to advance towards the MSC certification, addressing several FIP challenges as unregulated fishing gear, illegal sizes, exceeding quota and use of bait.

KEYWORDS: Fishery Improvement Project; MSC Standard; Fishery Progress; PescaData

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Figure 2. Social Risk Assessment principle scores of the Yucatan Octopus FIP (Coronado, 2022).