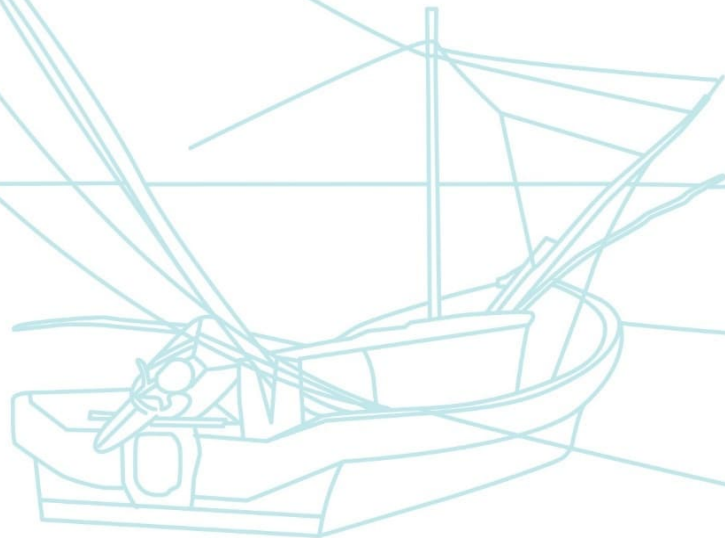




**COBI**

Comunidad y Biodiversidad

**Report:**  
**Feedback workshop with the fishing sector for the  
Fisheries Management Plan for Octopus (*O. maya*  
and *O. vulgaris*) in the Gulf of Mexico and  
Caribbean Sea.**



Prepared by: Polo Barajas-Girón and Lorena Rocha-Tejeda

November 13 and 15, 2023



## Acknowledgments

To the team conformed by Dr. Alicia Poot, M.C. Jesús Soto, Dr. Miguel Gamboa, M. C. Jose Carlos Mona González from the CRIAP- Yucalpetén (by its acronym in Spanish: Centro Regional de Investigaciones Acuícolas y Pesqueras), to M.C. Saúl Pensamiento, Dr. José Francisco Chávez, M.C. Cristina Hernández Tlapale, M.C. Sebastián Caña Hernández from the CRIAP-Lerma from the National Institute of Fisheries and Aquaculture. To the Campeche and Yucatan Fishing Sector. To the Secretariat of Sustainable Fisheries and Aquaculture of Yucatan. To the Institute of Ecology, Fisheries and Oceanography of the Gulf of Mexico. To the Ocean Stewardship Fund for the ITM grant, and the Walton Family Foundation, for funding the improvements in the Octopus fishery in Yucatan, Mexico.

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## Introduction

Mexico is one of the largest producers of octopus in the world, ranking third in 2016-2018. This fishery ranks seventh in the country's fish production and fourth in economic value. For the past ten years, the states of Campeche and Yucatán have been the largest producers of octopus in the country (CONAPESCA, 2018).<sup>1</sup> The species that are harvested in the state are the mayan or red octopus (*Octopus maya*), the common octopus (*O. americanus*, formerly known as *O. vulgaris*) (Avendaño et al., 2020),<sup>2</sup> however, the last specie has not yet been officially updated by the Mexican federal government. The octopus fishing season in the Yucatan Peninsula runs from August 1st to December 15th each year.

This fishery was pre-assessed in 2018 under the Marine Stewardship Council (MSC) standard, identifying various areas of opportunity that require improvement to meet the 28 Performance Indicators (PIs). One of the main challenges of the octopus fishery is the generation of fishery information, which allows documenting more variables during the fishing operation (date, fishing schedule, type of gear used, area of capture, type of bait used, volume caught of the target species and the biometric data of the organisms). This information will make it possible to evaluate and design strategies to improve the current management of the fishery, as well as that of the species used as bait.

Since this fishery aims to be certified by the MSC sustainable fishery standard, during 2023 actions have been taken to improve the rating of PIs scored with ratings below 80. One of the actions is related to principle 3, which addresses the governance of the fishery as decision-making, fisheries regulations by establishing and updating the Legal Fisheries Management Instruments (LFMI) and the Fisheries Management Tools (FMT) and the respect for these rules by the actors of the fishery together with the proper execution by the responsible authorities. One of the most important LFMI in fisheries in Mexico are the Fisheries Management Plans, which the National Commission of Fisheries and Aquaculture (CONAPESCA) defines as: the set of actions aimed at the development of fishing activity in a balanced, comprehensive and sustainable way; based on up-to-date knowledge of the biological, fisheries, environmental, economic, cultural and social aspects of it.

At the beginning of 2023, the Mexican Institute for Research in Sustainable Fisheries and Aquaculture (IMIPAS by its Spanish acronym) of the Atlantic and Community and Biodiversity A.C. (COBI) signed a collaboration agreement to assist in the implementation of improvements for the octopus fishery in the Yucatan Peninsula, this within the framework of the [Yucatan Octopus FIP](#), one of the main activities that the interdisciplinary team has worked on, is the update of the Octopus Fisheries Management Plan (OFMP), which was published in [2014 in the DOF](#), which creates the need to update it with the scientific information generated during these nine years and above all to update the FMT. As part of this process, a face-to-face workshop was held with the fishing sector and local authorities of Campeche and Yucatan with the aim of socializing the update of the FMT and providing feedback on the prioritization of their OFMP Lines of Action, which will include the inclusion of the new octopus species identified and the new

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1 CONAPESCA, (2018). Secretaría de Agricultura y Desarrollo Rural, Comisión Nacional de Acuacultura y Pesca, Anuario Estadístico de Acuacultura y Pesca 2018, (CONAPESCA), México.

2 Avendaño, O., Roura, Á, Cedillo-Robles, C. E., González, ÁF., Rodríguez-Canul, R., Velázquez-Abunader, I., et al. (2020). *Octopus americanus*: a cryptic species of the *O. vulgaris* species complex redescribed from the Caribbean. *Aquat. Ecol.* 54, 909–925. doi: 10.1007/s10452-020-09778-6.

model to determine the quota for mayan octopus and the population status of both octopus species.

## Overall Objective

Socialize the update of the Fisheries Management Tools, and provide feedback on the prioritization of its Lines of Action in the update of the Octopus Fisheries Management Plan. This update of the OFMP will include the new model to determine the quota for mayan octopus and the population status of both octopus species.

## Methodology and Results

**Date and place:** On Monday, November 13th and Wednesday, November 15th, 2023 in Campeche, Campeche: Auditorium of the VI Research Campus of the UACAM. and Mérida, Yucatán: SEDER (Secretariat of Rural Development) offices, respectively.

**Participants:** Edgar Narváez Yerbes, Angelita del S. Canul Pérez, Ruben Sánchez Rebolledo, Pedro Gonzalo Chi Pech, David Alejandro Cab Collí, Abraham A. Canul Santos, Juvencio Pastrana Oliva, José del Carmen Huicab Fernández, Efraín Sulub Chulin (**Campeche fishing sector**); Sara Herrera Torices (**SEMAR**); Angelina del C. Peña Puch, Yassir Torres Rojas, Atahualpa Sosa López, Carlos E. Paz Ríos, Jaime Navarro Flores, Juan Manuel Matú Fierro (**EPOMEX**); Saúl Pensamiento, José Francisco Chávez, Cristina Hernández Tlapale, Sebastián Caña Hernández (**CRIAPL-INAPESCA**), José Luyis Arzabala Molina (**IT-Lerma**); Humberto G. Reyes Gómez, Santiago Jonathan Quetz Que, (**CONANP**); Juan José Sánchez Vivanco, José Enrique Hernández Castro, Hugo Arturo López Correa (**CONAPESCA**); Edward Ceballos, Ulises B. Durán V., Otilia Muñoz Solís (**INPESCA**); Unai Markaida, Adrian Núñez (**ECOSUR**); Mayte Rendón Cabrera, Elías Melken Macossay (**PROFEPA**); Nuria León Tolentino, Selmy Gpe. Jurado Dzib, (**SENASICA**); Ana Teresa Sabas Flores (**CETMAR**); César Uriel Romero Herrera (**SEMARNAT**); Raquel Rosas Vega (**ITMAR**); Domingo Flores Hernández (**UACAM**); Constantina Castaneda Gutierrez, Onan Eleazar Ramírez, Víctor Manuel Alcantar Cárdenas, Ramiro Cam P., Roberth Mar, Rey Arturo C. P., Eisy rosado Ramírez, Ana María Pech Chacón, Joaquín Caviol Flores, Paul Heron Ortega Tun, Jesús Francisco Avilés, Leonardo Pech, Antonio Cupul P. Juan Antonio Cupul, Ana María Frías, Juan Nazario Cohuo Lave, Luis Arturo Caamal Flor, Liliana K. Caamal Pech, Manuel Núñez Erguera (**Yucatán fishing sector**); Pastor Contreras Avilés (**CONAPESCA**); Alicia Poot, Jesús Soto, Miguel Gamboa, Jose Carlos Mona González (**CRIAPY-INAPESCA**), Alberto Sosa H, Edgar Remi Ramírez Núñez, Ana Lidia Rodríguez Sánchez, Daniela Santana Cisneros, Rolando Meneses Acevedo Víctor Manuel Alcantar Cárdenas (**SEPASY**); Luis Moisés Félix A. (**CANAINPESCA**); Rudy Abad, Víctor Zacarías, Ricardo Novelo, Manuel Sánchez, Carlos Novelo and Moisés Rosado (**octopus-FIP**), Lorena Rocha, Marco Polo Barajas (**COBI**).

## Topics:

Rules of coexistence – The rules of coexistence among the participants of the workshop were presented, emphasizing respect for opinions and the times to participate orally and in writing.

Objective of the workshop – It was explained that the objective of the workshop was to make them aware of the main information that will be updated in the OFMP so that the participants can give their point of view, together with the selection of the priority actions to address in the fishery.

Process of updating the OFMP – Dra. Alicia Poot described the process that is required for the updating of the Fisheries Management Plans and in which step we are for the Octopus Management Plan, emphasizing the importance of integrating the ideas and perspectives of all those involved in the fishery such as: fishing sector, economic, academia, CSOs and federal, state, and municipal government agencies.

Biological and population characteristics of the Maya and common octopus. – M.C. Jesús Soto and Dr. Francisco Chávez detailed the main biological characteristics of both octopus species, relating them to the FMTs that will be updated in the OFMP, and referring to the questions of the initial diagnostic evaluation. The FMTs were:

- Fishing Permits and Concessions – Fishing permits and vessels may not be increased.
- Target species – In Yucatan and Campeche are *Octopus maya* and *O. vulgaris* this species was determined in 2020 through molecular and taxonomic studies to be a cryptic species called *O. americanus*. In Veracruz it will change *O. vulgaris* to *O. insularis*. This is because Flores-Valle in 2018<sup>3</sup> identified by molecular methods that *O. vulgaris* is actually a cryptic species *O. insularis*, which is distributed in the Gulf of Mexico involving the area of the Veracruz Reef System and Lobos Tuxpan Reefs.
- Fishing Season – Will continue from August 1st to December 15th.
- Legal fishing gear – It will still be only by drift, rod (jimba) and line.
- Global catch quota per season – Will be calculated using generalized depletion and surplus production models.
- Minimum Catch Size/Weight – It will continue to be 110 millimeters of mantle length and 450 grams of total weight.
- Closure of fishing areas: Fishing Refuge Zones and Marine Protected Areas – ZRP Celestún and update of the network of ZRPs in Yucatan, as well as the Veracruzano, Lobos-Tuxpan Reef Systems and the Alacranes Reef National Park.

Supporting model for estimation of catch quota and stock status. – Dra. Alicia Poot addressed in greater detail the model of generalized depletion and surplus production, which will be implemented to determine the catch quota of Mayan octopus and to know the population status of both octopus species each year. She commented that this model is more suitable to be implemented in short-lived and fast-growing species, such as the octopus, and also mentioned that the previous model that uses field data will continue to be used, so that both models will be used. Finally, he commented that the status of the population of both octopus species will be updated in the Octopus Technical Sheet of the National Fisheries Charter at the beginning of next year 2024, which is not in "DETERIORATION" but in its "MAXIMUM SUSTAINABLE", so fishing effort cannot be increased and it is necessary to respect the FMT.

Importance of prioritization of lines of action and relevance for the establishment of a work agenda. – M.C. Saúl Pensamiento explained the importance of having feedback from the fishing sector in the process of selecting the lines of action that will be established in the components of the OFMP. Mentioning how all actors related to the fishery should be involved in the selection and implementation of the components, and actions focused on addressing the needs of the fishery to achieve its sustainability. He detailed the methodology for selecting and weighting the actions according to their feasibility and impact (Figure 1), these actions are grouped into four components:

- C1. Biomass and 3recruitment in your MRS – 20 actions
- C2. Economic profitability and benefits for society – 15 shares
- C3. Good quality of fishery products – 8 actions
- C4. Improved social and environmental environment – 19 actions

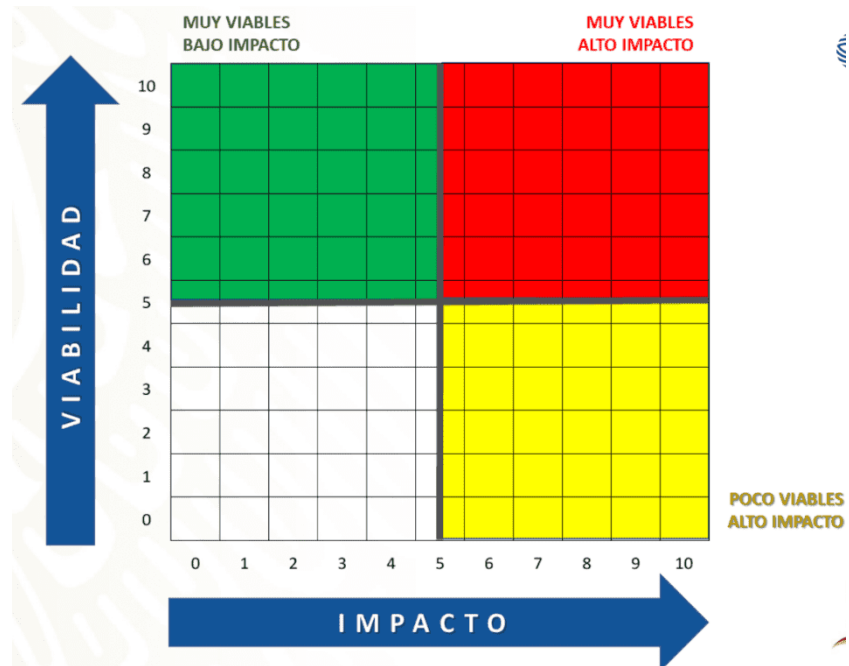


Figure 1. Diagram to weigh on a scale of 1 to 10, of the 62 actions according to their feasibility to be implemented, and the impact they would have if achieved.

### Dynamic:

Diagnostic evaluation at the beginning and end of the workshop to detect acquired knowledge and record the perception of the workshop.

Presentations by specialists to provide key insights.

Interactive working group sessions with the participation of the fishing sector.

Feedback and conclusions from the participants in the workshop to consolidate collective learning and perspectives.

### Affairs:

The main comment and concern from the sector in both states was the importance of addressing illegal fishing, since they mentioned that during the fishery temporary closure it has been on the rise, especially in Campeche, where they do not use the jimbas, but use blocks to add the octopus and later capture it through semi-autonomous diving.

3 Flores-Valle A, Pliego-Cárdenas R, Jimenez-Badillo MDL, Arredondo-Figueroa JL, Barriga-Sosa IDLÁ. (2018) First Record of *Octopus insularis* Leite and Haimovici, 2008 in the Octopus Fishery of a Marine Protected Area in the Gulf of Mexico. Journal of Shellfish Research 37:221–227. DOI: 10.2983/035.037.0120

Other comments were related to the little importance that the authorities have given to the sector in the past, so they recognized the exercise of informing them of the updates of the OFMP so they can give feedback, since this exercise had not been done before.

In general, the actions selected as priority and viable were those related to Illegal, Unreported, and Unregulated (IUU) fishing and on the knowledge and socialization of the population status of the octopus:

- 1.2.2. Strengthen inspection and surveillance in the areas of fishing, plants, berths, landing and transportation of fishery products.
- 1.2.3. Promote before Congress the classification of illegal fishing as serious based on studies and consequently the establishment of stricter penalties for violators.
- 1.2.4. Strengthen the estimation of illegal, unreported and unreported fishing using standardised methods.
- 1.3.1. Determine and increase the accuracy with which the catch quota by season and state is estimated for the red octopus (*O. maya*) and establish a more far-reaching mechanism for communicating the quota to managers and the industry.
- 1.4.1. Ensure the implementation of the ban as a mechanism for the protection of reproduction.

### Agreements:

In Campeche, another exclusive workshop for the fishing sector will be held at the beginning of next year, due to the request of people from the fishing industry who could not attend.

INAPESCA will analyze the results of the input and output diagnostics, and the prioritization of the lines of action, will share them with COBI once they have been carried out.

Alicia commented that it is necessary to have an exclusive internal collaboration agreement for COBI's collaboration for the update of the OFMP.

During the first quarter of 2024, the manuscript of the OFMP will be shared with octopus specialists from the academy for feedback, then a virtual workshop will be held with people from the academy to select and weigh (categorize in order of priority) the 62 actions of the four components.

During the second quarter of 2024, an in-person workshop will be held with the fishing and commercial sectors and the agencies of the three levels of government (municipal, state and federal) related to the octopus fishery in Campeche and Yucatán, to present the OFMP updates. and the Work Plan according to the actions selected by the fishing sector and academia as high impact and viable. With the objective of generating collaboration and monitoring agreements to be implemented once the OFMP is published in the Official Gazette of the Federation.

### Notes:

- In Campeche, Governments, Academia and the Fishing Sector were invited because there are fewer people, so M.C. Saúl considered that it could be implemented in a single workshop with all the actors, however, he later realized that it is best to obtain the information separately to avoid roses and biases when obtaining information from each actor. So he will hold another workshop only with the fishing sector.
- Dr. Alicia commented her interest in holding the workshop again in Yucatan, but now with the fishing sector represented only by fisherwomen, to contrast the results, and even to identify if there are differences in the dynamics of the workshop.

## ANNEX I

### Photographic compendium of the workshops in Campeche and Yucatan

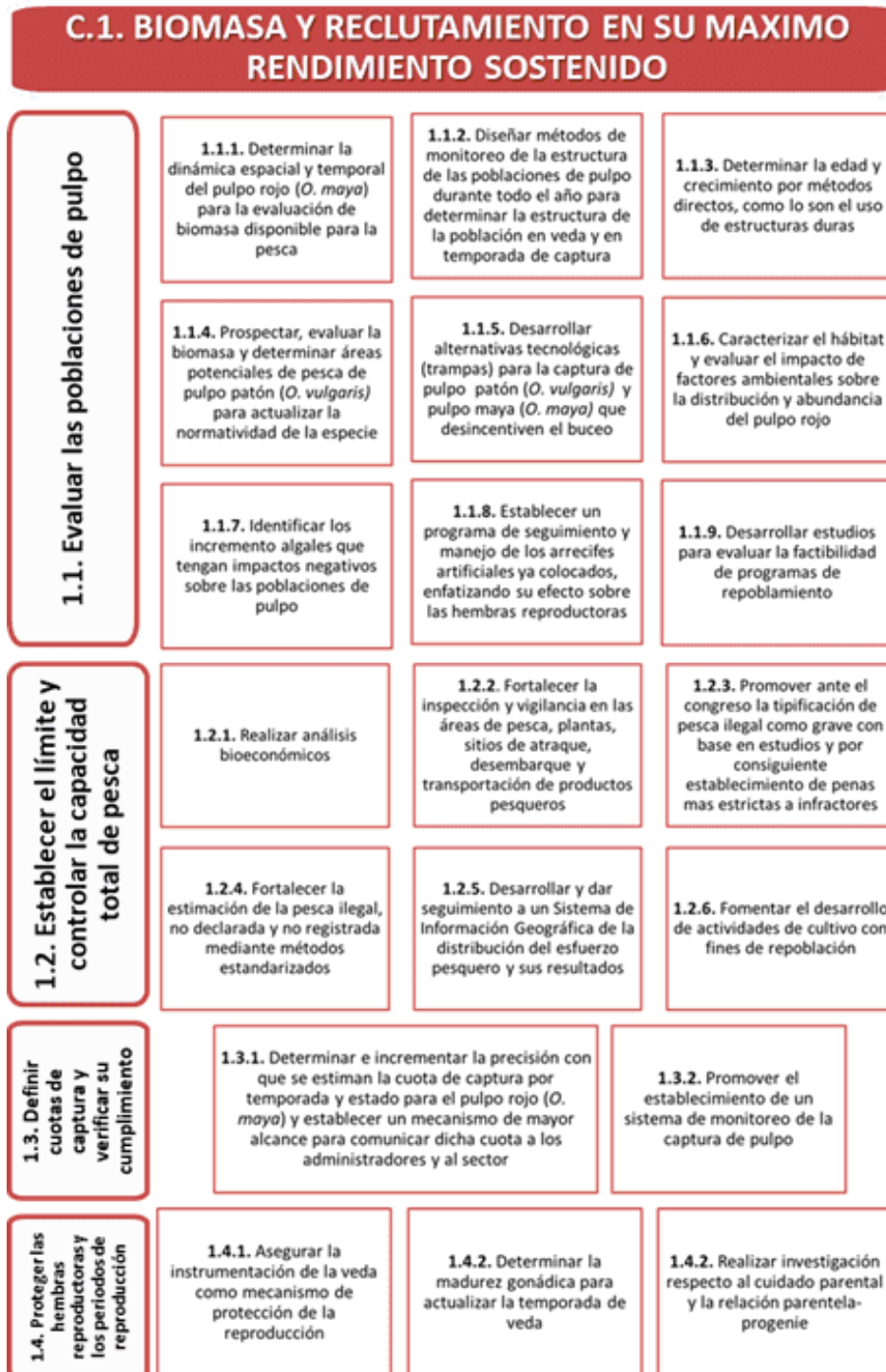






## ANNEX II

### Diagram of the four components with their 62 actions



## C.2. RENTABILIDAD ECONOMICA Y BENEFICIOS PARA LA SOCIEDAD

### 2.1. Fortalecer la cadena productiva de pulpo

**2.1.1.** Implementar un programa de equipamiento y modernización de la flota de mediana altura y la flota mayor

**2.1.2.** Realizar un estudio sobre las relaciones laborales y compromisos económicos que los pescadores adquieren con permisionarios y cooperativas para detectar malas prácticas y proponer soluciones

**2.1.3.** Elaborar un estudio de las condiciones actuales sociales y económicas de los pescadores en las comunidades pesqueras de Campeche y Yucatán para generar los indicadores socioeconómicos

**2.1.4.** Determinar las necesidades de capacitación del sector (en temas de calidad, tecnología, comercio, mejora continua de procesos, responsabilidad social y desarrollo sustentable y su profesionalización)

**2.1.5.** Gestionar la creación de un fondo ante casos de contingencias ambientales (marea roja, derrames de petróleo y huracanes)

### 2.2. Fomentar el desarrollo de alternativas tecnológicas para el procesamiento que de el valor agregado

**2.2.1.** Promover la certificación de la pesquería de pulpo

**2.2.2.** Promover la denominación de origen y marca colectiva del pulpo del litoral del Golfo de México y Mar Caribe

**2.2.3.** Promover un programa de incentivos para pescadores que realicen prácticas de pesca responsable

**2.2.4.** Fomentar la industrialización del pulpo y sus derivados

### 2.3. Promover el acceso del producto a nuevos mercados con mejores precios

**2.3.1.** Instrumentar un programa de divulgación nacional e internacional para el consumo de pulpo

**2.3.2.** Realizar estudios de mercado de canales de distribución nacional e internacionales

**2.3.3.** Promover el establecimiento de medidas arancelarias para que las exportaciones sean ágiles

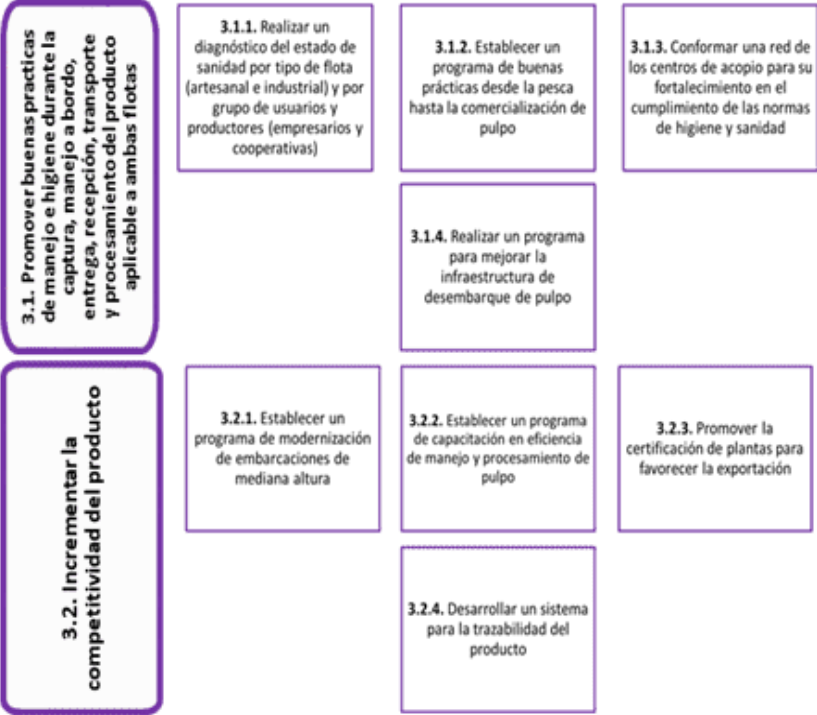
**2.3.4.** Evaluar la factibilidad de comercializar la producción de forma consolidada para el establecimiento de estándares y precios

### 2.4. Desarrollar estrategias para disminuir costos de operación

**2.4.1.** Realizar estudios de tecnología de capturas para mejorar el desempeño de las artes y para evaluar la factibilidad de prolongar la vida útil de equipos y artes de pesca

**2.4.2.** Realizar un análisis de compras consolidadas de los diferentes insumos para la producción

## C3. BUENA CALIDAD DE LOS PRODUCTOS PESQUEROS



## C. 4. ENTORNO SOCIAL Y AMBIENTAL MEJORADO

### 4.1. Promover un programa de seguridad del pescador

4.1.1. Promover una cultura de seguridad marítima entre los pescadores

4.1.2. Promover la creación de fondos para auxilio en caso de emergencias en el mar

4.1.3. Identificar y desarrollar un programa de seguridad social adecuado para las condiciones de trabajo del pescador

4.1.4. Gestionar la presencia de la autoridad marítima y la aplicación de los programas de Protección Civil en todas las comunidades de pescadores

4.1.5. Capacitar a los pescadores acerca de la importancia y riesgos de la marea roja

### 4.2. Promover una cultura de uso responsable del recurso

4.2.1. Llevar a cabo un programa para el desarrollo de la cultura sobre la pesca responsable y normatividad

4.2.2. Fortalecer el vínculo entre los pescadores y las instituciones de investigación para mejorar el conocimiento sobre ciclos biológicos, determinación de especies y situación de las poblaciones pesqueras

4.2.3. Fortalecer las acciones de inspección y vigilancia con la participación de los usuarios del recurso

4.2.4. Organizar eventos y presentaciones en comunidades de pescadores para informar sobre avances de los programas del Plan de Manejo

### 4.3. Promover el aprovechamiento armonioso del recurso a nivel estatal y regional

4.3.1. Establecer una estrategia efectiva de comunicación para informar sobre el esfuerzo máximo

4.3.2. Evaluar la posibilidad de delimitar las zonas de pesca en los permisos

### 4.4. Promover el desarrollo de una cultura ambiental en la comunidad

4.4.1. Promover el fortalecimiento y difusión de los programas de prevención de la contaminación por operación y mantenimiento de embarcaciones

### 4.5. Reducir el impacto de la pesquería sobre otros recursos y el ecosistema

4.5.1. Valorar el impacto sobre las poblaciones de jaibas y cangrejos por su uso como consumo de carnada para la captura de pulpo

4.5.2. Realizar estudios de factibilidad para el uso de carnadas alternativas

4.5.3. Evaluar la factibilidad del uso de las vísceras de pulpo y llevarlas al puerto para su aprovechamiento

4.5.4. Asegurar que las jimbas que usan los pescadores provengan de plantíos reconocidos o autorizados y no de ecosistemas silvestres

4.5.5. Evaluar y promover posibles usos alternativos de las jimbas una vez concluida la temporada de pesca

4.5.6. Fomentar las buenas prácticas de buceo turístico en la zona de pesca de pulpo

### 4.6. Reducir el impacto de otras actividades sobre el hábitat y la población de pulpo *O. maya*

4.5.6. Fomentar las buenas prácticas de buceo turístico en la zona de pesca de pulpo