



OCEAN OUTCOMES
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Mexico Campeche red snapper - vertical and bottom longline Three-Year Audit Report

Version 1.2, September 2021

Purpose

FishChoice developed the three-year audit report template. The objectives of the three-year audit report are:

1. To assess the fishery's performance indicator scores
2. To verify the results of the FIP's environmental work plans as reported on FisheryProgress
3. Optional: To provide recommendations to the FIP on environmental workplan actions that should be modified, including recommending additional actions/tasks that should be taken or suggested changes to timelines to help the IP achieve their stated objectives.

FIP Information

Target species scientific name(s) and common name(s)	<i>Lutjanus campechanus</i> / Red Snapper
Fishery location	Campeche, Mexico.
Gear type(s)	Bottom longline/longline
Estimated FIP Landings (weight in tons)	19 metric tons (Data from FIP 2021)
Vessel type(s) and size(s)	Small-scale vessels (Approx. < 10 meters of length) and medium scale fleet, larger vessels with a length between 12 and 22 m which act as mothership carrying between seven and nine alijos.
Number of vessels	Number of large (medium scale) vessels: 37; small-scale vessels: 67
Management authority	National Fisheries Commission (CONAPESCA)
Auditor name(s)	Ivan Martinez-Tovar
Auditor Organization/Affiliation	Ocean Outcomes
Date of report completion	March 6, 2023

FIP Background (Optional)

The Red snapper fishery represents one of the most important fisheries in the Gulf of Mexico (GM), and the fifth most important for the State of Campeche (Government of the State of Campeche, 2015). According to the 2018 version of the national Fisheries Chart (CNP for its name in Spanish), the multi-species "Huachinango and snapper fishery" in the Gulf of Mexico considers the Red snapper as one of the most important target species (DOF 2018), with Campeche tied as the second-largest producer with Yucatán and Tamaulipas and behind Tabasco (DOF 2018). In the past, Red snappers represented around 90% (Anderson et al. 2015) of the fishery production. The production history of the fishery shows that maximum landings were reached in 1993, with an average of 4,956.0 metric tons (mt) between 1986-1996. However, average production was reduced to 2,996.0 mt during the 2000 to 2015 period (DOF 2018). These changes have not been confirmed through a recent assessment of the biomass. According to dated evaluations, the Red snapper biomass decreased from 32,957.0 t in 1984 to 16,877.0 in 1999 (Monroy García et al., 2002). In addition to this, the current harvest strategy for the species is minimal, with no specific management plan, harvest control rules, or monitoring in place that effectively collects production information and other important aspects of the fishery, such as effective fishing efforts in place, as well as interactions with the habitat and impact on the ecosystem. Overall, managers stated the fishery as "deteriorated" in several states, including Campeche (DOF, 2018).

Stakeholder Consultation & Meetings

The review team reviewed the background and material needed to understand the current status of MSC Performance Indicators (PIs) and the status of progress on the client action plans. The communications occurred through scheduled meetings. The list below provides information for participants on specific communications.

Name	Affiliation	Date and Subjects Discussed
Alesa Flores	Comunidad y Biodiversidad A.C. (COBI AC)	<p style="text-align: center;"><u>Feb 16th, 2023</u></p> <ul style="list-style-type: none"> • Data collection efforts • Barriers and efforts to mitigate • Stock assessment • Scope of the project
Dr. Alejandro Espinoza-Tenorio	ECOSUR	<p style="text-align: center;"><u>February 8th, 2023</u></p> <ul style="list-style-type: none"> • Revision of the current legal management of primary, secondary, ETP species and habitat related to the red snapper fishery.

		<ul style="list-style-type: none"> ● General information regarding fishery interactions with local commercial activities. Engagement with stakeholders.
Dr. Raul Lara	INAPESCA	<p style="text-align: center;"><u>February 23th, 2023</u></p> <ul style="list-style-type: none"> ● Status of stock ● Institute efforts on data monitoring and scope of project ● Collaboration and coordination
Dr. Juan Carlos Perez	ECOSUR	<p style="text-align: center;"><u>February 7th, 2023</u></p> <ul style="list-style-type: none"> ● Assessments of the impacts on the habitat and ecosystem of the fishery. ● Project goals and current progress ● Engagement of stakeholders in the project ● Next steps.
Dr. Oscar Sosa Dr. Emiliano García	CICESE	<p style="text-align: center;"><u>28 February 2023</u></p> <ul style="list-style-type: none"> ● Stock assessments methodology (approach, robustness, data source) ● Collaboration, scope of project ● Principle indicators

Summary of Findings and Recommendations

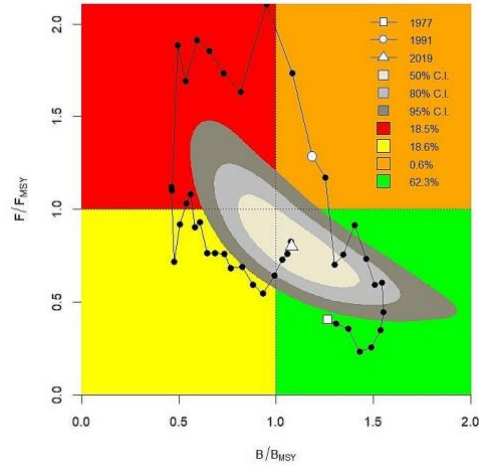
- Based on the conversations with some of the FIP participants, it is clear that the FIP has a positive impact moving the fishery in the right direction. Either by standardizing data collection, generation. To also improving the coordination with stakeholders in a region where it is historically difficult to operate, due to different factors, including the important oil industry.
- The project, although working exclusively with one cooperative, in a way represents a decent portion of the fishing effort that takes place in the geographical region, however, it was shared by some participants, the importance to keep reaching to other producers to have a more robust coverage of them and increase the impact of the project.
- The FIP project has undertaken actions and tasks that address all three MSC Principles. However, some management considerations although are being actively explored, might take long time to be achieved, it was noted that there has been limited participation at the federal level from managers (CONAPESCA). As the FIP continues, coordinators might consider developing additional tasks that aim to increase the involvement of decision-making representatives, particularly for the goals to improve the management aspects of it (i.e., design and implementation of HCR)

- The FIP has invested considerably in data generation, that will be important in particular aspects of the formal evaluation. Such as refining the model to evaluate the status of the stocks, using data beyond catches, and incorporating age and or size structure of the catches as well as other biology and ecology factors of the target species.
- There is still some uncertainty of when the participants will be officially authorized to use the vertical line as the gear in their licenses. This might become a bigger issue if not resolved soon.
- Catch composition information was collected, analyzed and most important species in terms of proportion of the catch have been identified. There is still some more data needed to confirm this, considering that some of the results showed data compiled by the two gears (bottom longline and vertical line).
- A recent stock assessments using data limited models were explored, and the collection of more data to improve this evaluation is currently in progress.
- The timetabling of the project seems to be appropriate -especially when revising the progress made so far- although the adoption of updates on the management regime may take longer than the time suggested within the workplan.

Recommendations

1. The profile shows several participants that might currently not be involved in the project. It will be recommended to update the list to reflect those that are actively engaged versus the ones that are not part of the project.
2. The fishery targets one species (*L. campechanus*) using two gears. Although minimal differences might exist, and scores for the different PIs might be similar. Since two gears are used and there are differences (particularly in catch composition and potential interactions with ETP species), the multispecies/multi-gear excel file should be used to represent this combination of species and gears for the project.
3. Although, collection of information related to catch composition is in place, the report “*Descripción de la pesquería de huachinango (Lutjanus campechanus (Poey, 1860)) capturado con palangre y línea de mano en Nuevo Campechito, Campeche, México*” showed some data that combine the catch using both gears. In order to have a better understanding of the catch composition, it is recommended to improve the data collection by separate the catch per gear. This takes special importance, considering the reporting of a potential “Endangered” species in the catch but data does not allow to differentiate if this is a problem with one specific gear (or both)(more details about this in P2 indicators)

Summary of MSC Performance Indicator Scores

Principle	Component	Performance Indicator	Previous Score	Current Score	Rationale or Key Points
1	Outcome	1.1.1	Stock status		<p>The most recent update of this fisheries profile on the National Fisheries Chart, was released in 2018 (DOF 2018). Managers stated that the red snapper was showing signs of being overfished and had been experiencing overfishing for several years (DOF 2018). In addition, the profile stated that Yucatán, Campeche, and Veracruz landings have been declining and recognized the fishery as deteriorating (not at their optimum in terms of abundance and fishing effort) in Tamaulipas, Veracruz, Campeche, and Yucatán. According to the FIP updates, an update of the official profile should be released in 2023. As part of the action: “Red snapper stock assessment,” an evaluation of the species, was developed by researcher consultants using the Monte Carlo method (CMSY). The authors used a combination of catch data, resilience, and qualitative stock status information on the data-limited model to estimate the biomass-producing MSY (BMSY), the fishing pressure-producing MSY (FMSY), catch in terms of MSY (CMSY) and reference points such as stock size (B/BMSY) and exploitation rate (F/FMSY).</p>  <p>Based on the results, the authors recognized the transition of the red snapper population in recent years and reported signs of a relatively positive trend. With the most recent year putting the species with a status of the biomass above the MSY</p>

						<p>(BMSY) (image and results taken from a draft report on the fisheries profile in FP.org).</p> <p>These results, when compared with another exercise showed a similar status, Balmori et al. (2022) also conducted a CMSY to evaluate the status of the stocks of three snapper species in the Gulf of Mexico. Including red snapper. The authors also found that red snapper was not showing signs of being overfished or overfishing was occurring.</p>
		1.1.2	Stock rebuilding			<p>Based on the results of both exercises, it is highly likely that the stock is above the PRI and has been fluctuating around MSY. In addition, although there are still uncertainties related to the quality and quantity of data available, most recent evaluations show similar patterns and provide a general idea of the status of the stock. A higher degree of certainty that the stock is above the PRI can be achieved by using a model that reflects the level of recruitment, using the information on the size structure of the catch. We believe current information is enough to improve the score of this PI to at least a passing condition.</p> <p>Considering the results obtained in the most recent exercise (see 1.1.1), a rebuilding strategy might not be necessary. This PI might improve once the stock assessment results are confirmed and published.</p>

Management	1.2.1	Harvest Strategy			<p>There is no specific harvest strategy for red snapper. The species instead is included as an associated species in other management instruments (such as the Official Mexican Norm for groupers of the Gulf of Mexico and the Caribbean Sea (NOM-065-SAG/PESC-2014).</p> <p>Managers consider the red snapper one of three target species of the “snapper” or “huachinango” fishery in the Gulf of Mexico. The fishery includes a series of measures listed within the fishery profile in the National Fisheries Chart (CNP)(DOF 2018). These measures include access control via fishing licenses, fishing areas, effort controls, closed season, and a closed refuge area. In addition, some gear specifications are included in the profile, and a “<i>variable harvest rate</i>” is listed as the management strategy. However, no detail about how this harvest rate is evaluated are included. Finally, the recommendations for the fishery include the creation of a specific NOM, a Management Plan, to restrict any increase in fishing effort and to have in place a monitoring program in coordination with INAPESCA.</p> <p>Overall, a robust harvest strategy, with regular monitoring, reference points, and harvest controls, is not in place for red snapper. Current measures (listed above) might be achieving certain success, based on the most recent evaluation (see 1.1.1). Still, these are not responsive to the status of the stock, nor an evaluation of the effectiveness is in place. It can be inferred that the harvest strategy is not periodically reviewed and improved as necessary, considering that the update to the profile has not occurred since 2018 (DOF 2018) which used information from 2015.</p>
	1.2.2	Harvest control rules and tools			<p>Improvements needed for this PI are directly related to the results of a new stock assessment that will allow the generation of a new strategy, including HCR. Based on the most recent evaluations (See 1.1.1). A baseline for a HCR has been identified. Currently, these are not part of the management, and it needs to be clear that uncertainties tied to the stock evaluation are better understood.</p>
	1.2.3	Information and monitoring			<p>Considering the importance of the resource, some relevant information related to stock structure, stock productivity, and fleet composition is available to support a potential harvest strategy. Managers monitor red snapper production via landing tickets (“Avisos de arribo”). These are mandatory and should include a description of the composition of the catch. However, no verification exists when these tickets are created, and the information tends to be inaccurate (Yozell 2020). Academic research related to the fleet composition, biology, and ecology</p>

						<p>of the species, as well as, fishing methods, gears and selectivity have been described. Similarly, fleet composition and interactions have also been studied.</p> <p>Most recently (September 2019), FIP participants started collecting information of their activities, including catch composition by gear and size. However, there is still the need to have a similar level of detail from other sources of fishery removal (e.g. other fleets operating in the same region, and other fleets targeting the same stock in the Gulf of Mexico).</p>
		1.2.4	Assessment of stock status			<p>The two most recent assessments for the species used a similar approach. The Monte Carlo model estimates to estimate the MSY based on catch data (CMSY). The method seems appropriate based on the information available. The authors were able to estimate a baseline for a management strategy. Including the status of the population against reference points. These included the biomass needed to achieve the MSY and the fishing effort in place to maintain the MSY. The authors identified the main sources of uncertainty. For example, there is a lack of specific size structure information and more specific details on other extraction sources. The goal for the evaluations is to be published in a peer-reviewed publication. But currently, this step has not been completed. Considering that results of both exercises (FIP led evaluation and Garcia-Caudillo et al (in draft) present similar results, the PI could be scored with a passing condition).</p>
2	Primary species	2.1.1	Outcome			<p>According to the Pre-assessment report, despite the lack of official data on catch composition, qualitative and some quantitative information available showed that of all the potentially caught species, none had levels determined by biological reference points. For this reason, no primary species were considered for this, and associated PIs (2.1.2 and 2.1.3)</p>
		2.1.2	Management strategy			<p>See 2.1.1</p>
		2.1.3	Information			<p>Some quantitative information has been generated and is available, to identify the catch composition and assess the impact of the UoA on the main primary species. Based on data obtained so far, there are no species in the catch that can be considered primary species (Perez-Jimenez et al 2022 and Flores-Guzman 2022).</p>
	Secondary species	2.2.1	Outcome		Vertical line	<p>Based on the data collection data and report generated in 2022, there is enough quantitative information to define bycatch for vertical line (but there is some</p>

					<p>uncertainty due to the fact that there are still some records that combine catch for both gears (Flores-Guzman 2022).</p> <p>For the vertical line (only) the main secondary species are, vermilion snapper (<i>Rhomboplites aurorubens</i>), lane snapper, (<i>Lutjanus synagris</i>) and Bonito (<i>Sarda sarda</i>) which is used as bait. The species should be included as a main secondary species since it represented ~20% when compared its used amount against the total catch (estimates are based on the databased from September 2019 to July 2022, where bonito represented ~78% of the bait used in the vertical line (~5.1 metric tons) and the gear produced ~25.4 metric tons of total catch).</p>
				Bottom longline	<p>Based on the data collection data and report generated in 2022, there is enough quantitative information to define bycatch for the bottom longline, but there is some uncertainty due to the fact that there are still some records that combine catch for both gears (Flores-Guzman 2022). For the bottom longline, it appears that <i>Bagre marinus</i> (~13%), and vermilion snapper (<i>Rhomboplites aurorubens</i>) (~5%) should be considered within the main secondary species, and similarly to vertical line, bonito used as bait should be considered, since it represented around 24% when compared to the total catch.</p> <p>Finally, this gear also reported a significant proportion of elasmobranch species (~36%), with Bonnethead shark (<i>Sphyrno tiburo</i>) reaching up to 17%. This aspect is important to review since Flores-Guzman (2022) reports the species as part of the Nuevo Campechito snapper catch, but Pérez-Jiménez et al (2022) mentioned that <i>S. tiburo</i> is caught close to the shore and is not part of the snapper fishery bycatch (the new version of the MSC standard 3.0 will consider Globally Endangered species by the IUCN as ETP species, which is the current status of <i>S. tiburo</i>) (IUCN 2022).</p>
	2.2.2	Management strategy		Vertical line	<p>Although it is necessary to confirm the different species that are part of the secondary species per gear. The current identified species (main and bait) lack of management measures that could be considered a partial strategy that is expected to maintain or not hinder rebuilding of main secondary species.</p>
				Bottom longline	
	2.2.3	Information		Vertical line	<p>Based on the data collection and report generated in 2022, there is enough quantitative information to define bycatch for vertical line and bottom longline</p>

					Bottom longline	<p>(but there is some uncertainty due to the fact that there are still some records that combine catch for both gears (Flores-Guzman 2022).</p> <p>The quantitative information available is adequate to assess productivity and susceptibility of main secondary species and minor species for both gears and when ready, inform the creation of a strategy.</p>
ETP species	2.3.1	Outcome			Vertical line	<p>No ETP species were identified from the fishers data logs, although five species with some type of IUCN risk category as well as two sharks in CITES Appendix II were identified, but represented < 2% of the records. The qualitative and quantitative information available allows to know the direct effects of the UoA, on the species. Similar fisheries in the region also noted that fisheries have low interaction or capture of marine turtles (SFW 2018).</p>
					Bottom longline	<p>The bottom longline is the gear that seems to have more interaction with elasmobranchs, including species listed in the Appendix II of CITES (Scalloped hammerhead, <i>Sphyrna lewini</i> and Silky shark <i>Carcharhinus falciformis</i>). In Mexico, the elasmobranchs fishery is regulated by the Official Standard NOM-029-PESC-2006 (DOF, 2007). There is a closed season for sharks on the Atlantic coast (DOF, 2014). The most recent update to the shark fishery in the Gulf of Mexico (DOF 2022) stated that the biomass of all of the shark species was found to be below the B_{MSY} but not under the level where stocks could be considered deteriorated (DOF 2022). Although it still needs to be confirmed the presence of ETP species under the MSC categorization. It will be important to consider to monitor these interactions closely. Based on this information, it is recommended to have a cautious scoring for this PI for the bottom longline gear.</p>
	2.3.2	Management strategy			Vertical line	<p>Based on the quantitative information available, the UoA seems to have no significant interactions with ETP species. Some of the potential species that fall within this category (i.e., sharks) have in place some measures (NOM-029-PESC-2006) that are expected to control the species status. Based on its use, there is some objective basis for confidence but there is no evidence available about their effectiveness, and a regular review of its effectiveness is unclear.</p>
					Bottom longline	<p>Considering that <i>S. tiburo</i>, might reach the ETP category for this UoA (under the new version of the standard), the lack of a management strategy in relation to the interactions with the ETP species, specifically to this fishery, prevents the system reaching a higher score. Currently, the species is included as part of the NOM-029-PESC and the measures are expected to control or mitigate negative impacts. However, similarly to vertical line, there is no evidence available about their</p>

						effectiveness, and a regular review of its effectiveness is unclear. Currently, according to the data available, interactions with <i>S. tiburo</i> are not common but the species accounted for ~17% of the total catch with bottom longline (Flores-Guzman 2022).
		2.3.3	Information		Vertical line	Available qualitative information was available during the pre-assessment, in addition, and as part of the FIP, monitoring through fishing logbooks has been conducted, including interactions with ETP species. Pérez-Jiménez et al (2022) analyzed the data and found some IUCN's Red List species, including the critically endangered (scalloped hammerhead), the endangered Atlantic goliath grouper (<i>Epinephelus itajara</i>) five vulnerable (red and vermilion snappers, black grouper (<i>Mycteroperca bonaci</i>), yellowmouth grouper (<i>Mycteroperca interstitialis</i>), and silky shark, and three near threatened species (lane snapper, southern stingray, and greater amberjack (<i>Seriola dumerili</i>) but these species were present in low catch percentage (Pérez-Jiménez et al 2022). The quantitative information is considered adequate to assess the UoA related mortality and impact on ETP species. In addition, if monitoring program remains in place, trends might be adequate to assess the strategy. Available level of information of the species that might be considered within the scope is enough to support measures and set a basic strategy.
					Bottom longline	
	Habitats	2.4.1	Outcome		Vertical line	The nature of the gear, has relatively limited impact with the bottom and data collection in terms of location will allow to determine the extent of interaction of the fishing gear. Based on some reports associated with the ecosystem, Pérez-Jiménez et al (2022) mentioned that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. But there is the need to generate more evidence to confirm this, for these reasons this PI is scored as passing with condition for both gears.
					Bottom longline	
		2.4.2	Management strategy		Vertical line	In the region, there are several protected areas that aim to protect habitats and/or species that inhabited them. The nature of the gear authorized for the fishery, that have limited interactions with the different habitats can be considered another measure in itself. The combination of all of this could be considered a partial strategy that is expected to achieve the Habitat Outcome 80 level of performance or above. Also, there is some objective basis for confidence that the partial strategy will work based on information directly about the UoA and habitats involved. Although more evidence is needed to confirm that the strategy is
			Bottom longline			

					implemented successfully, for these reasons, the score for this PI remains as if for both gears.
	2.4.3	Information		Vertical line Bottom longline	The types and distribution of the main habitats of the Campeche bank have been well studied, in addition, the area where the fleet operates is relatively well defined and data collected will allow to have a better understanding of the main habitats. Based on this information, the distribution of the effort of the UoAs and the overlap with main habitats and impacts of the gear use are broadly understood. The information available might be adequate to allow for identification of the main impacts of the UoA on the main habitats, and there the log books will provide reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gears. It will be important to continue generating data to monitor changes in the distribution of habitats to detect any increase in risk to the main habitats.
Ecosystem	2.5.1	Outcome		Vertical line Bottom longline	<p>The UoAs may be considered highly unlikely to disrupt key elements in the ecosystem structure because of the highly selective nature of the fishery (based on the catch composition) distribution of community or other key ecosystem elements. Based on the data collected, and the results of the study in 2022 that used ECOPATH model indicate that the ecosystem has high resilience and productivity. The authors reported that red snapper has little interaction with other groups (low connectivity) which suggests that the species is less important, in that sense, in the ecosystem's food web (Pérez-Jiménez et al., 2022). Based on this study, there is a high degree of confidence that there are no significant detrimental direct and indirect effects of UoA on ETP species, and ecosystem. The authors of the report concluded that:</p> <p><i>“... results highlight the need for systematic monitoring of the fishery to understand the catch rate trend, size structure, sex ratio, maturity stage ratio in the catch, and collect more information on trophic web interactions. The catch rate data of other species from the region are necessary to assess the impacts of harvest rate scenarios”</i></p> <p>This type of effort will generate the necessary evidence to confirm that the UoA unlikely disrupt the key elements of the ecosystem.</p>
	2.5.2	Management strategy		Vertical line	There are measures in place related to protect certain key elements of the ecosystem, such as elasmobranchs (regulated by the Official Standard NOM-029-PESC-2006 (DOF, 2007). Other controls such as limits on fishing effort or the

					Bottom longline	specific technical characteristics of the gears authorized. These measures can be considered to likely work on their objective. But these seems to work independently and not as part of a partial strategy. Considering the fact that a recent evaluation shows limited impacts on the Ecosystem (see 2.5.1) this PI, it can be considered as some evidence that measures are successful, but more monitoring is needed to generate evidence of this.
		2.5.3	Information		Vertical line	Studies on the Campeche bank are common and in general, information can be considered adequate to broadly understand the key elements of the ecosystem. Based on the data available, the main impacts of the UoA were assessed and the main function of the most important elements was identified. In addition, more data is continued to be collected and will improve the knowledge of the interactions within the ecosystem and the UoA interactions. Overall, this PI scored remains.
					Bottom longline	
3	Governance and Policy	3.1.1	Legal and customary framework			<p>The general legal and customary framework associated to fishing activities in Mexico (and the red snapper fishery) is consistent and well known by all parties involved. The federal management system sets governance and policy through the national fishery law. This instrument allows two bodies with management, (CONAPESCA) and research activities (INAPESCA). The national legal system includes a space for cooperation with other parties, to deliver management outcomes which are consistent with the Principles 1 and 2 of the MSC.</p> <p>In addition, the management system allows stakeholders to participate in the deliberations process, regarding management decisions, the process is open and details tend to be transparent. In general, the mechanism allows solving disputes, however, it was observed that it is recurrent the lack of attention to rights renewal requests necessary to execute the artisanal fishing activity, this situation could generate uncertainty in regard to surveillance, and a possible violation of the previously obtained rights, due to a lack of a correct mentioned requests management.</p> <p>Environmental and fisheries laws and regulations recognize the dependence on fishing for food and livelihood and include clauses to generally respect customary or traditional legal rights of these people. The fisheries' law, includes the rights for indigenous peoples to use fish as food are given priority and special considerations and are recognized and allowed (OECD 2013).</p>

		3.1.2	Consultation, roles and responsibilities			The organizations and individuals involved in the management process are well identified, as well, their roles and responsibilities have been explicitly defined. The management system includes consulting processes which regularly seek and accept relevant information, including local knowledge. Additionally, when the regulatory update processes are in action, they must be published on the National Commission for Regulatory Improvement web page and in the DOF (Official Federation Paper). This PI remains with no change.
		3.1.3	Long term objectives			General Law of Fisheries and Aquaculture defines explicitly long term objectives and is as well-defined in the CNP. This PI remains with no change.
	Fishery specific management system	3.2.1	Fishery specific objectives			<p>The red snapper fishery, does not have a robust fishery management plan in place. The measures describe on the PI 1.2.1. Represent the only measures directly apply to the recognized fishery (“Huachinango and Snappers of the Gulf of Mexico”) but do not have specific goals" The fishery management plan for Groupers and "associated species (that includes red snapper) for the GOM and Caribbean and the Fishery Management Plan for Groupers and associated species in the Yucatan Peninsula (DOF 2014, SAGARPA 2016), state that their goal is:</p> <p><i>“...to guarantee the conservation, preservation, ability of renewal, and optimal utilization of the different groupers and associated species and to promote the responsible use of these species, to promote their preservation and ability of renewal, as well as to promote the preservation of the environment and other biological resources”.</i></p> <p>The objectives are, however, mostly driven by the most important (and main target) species, red and black grouper. So these, cannot be applied to the red snapper fishery.</p> <p>Considering that the CNP profile (from 2018) recommends the generation of a specific Fishery Management Plan to define specific objectives and to develop an appropriate and precautionary harvest strategy for the fishery, including reference points and harvest control rules. For these reasons, we recommend this PI to be revisited and downgraded its score.</p>
		3.2.2	Decision-making processes			The fisheries' law describes decision-making processes, where the Fisheries National fisheries' Chart (carta Nacional Pesquera) includes <i>“the guidelines, strategies and other provisions for the conservation, protection”, restoration and exploitation of fishing resources [...]”.</i>

					<p>The contents of the Fisheries National Chart are intended to be binding in the decision-making and adoption/implementation of management measures. The red snapper profile on the Fisheries National Chart outlines recommendations for the management, including a no increase in the fishing effort in place. This kind of recommendations are provided to CONAPESCA via a technical opinion from INAPESCA. Thus, in theory, the decision-making processes employ a precautionary approach and are based on best available information. However, there has not been an update of this recommendation since 2018, so it does not seem that the decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner, and take some account of the wider implications of decisions. The PA reported that the decision-making process may have had a number of obstacles, possibly stemming from conflicting interests among stakeholder groups, since the existing measures and strategies are very weak or non-existent and recommendations do not seem clearly established or have been interrupted.</p> <p>Conflict resolution is mainly based on communication, fishers alert problems to the authorities and CONAPESCA in coordination with other institutions such as INAPESCA, and SEMAR seek for the origin of the problem. Once the problem and its origin have been identified, communication with the interested party is established again and an administrative and operative solution is proposed. When conflicts go beyond the dialogue, the support of the Attorney General's Office and the Ministry of the Navy is sought to ensure the sustainable General's fishery resources and to deal with conflicts according to the protocol of the aforementioned institutions. Though the dispute resolution procedures are not formalized, they are considered effective. Thus, the management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.</p>
		3.2.3	Compliance and enforcement		<p>Considering that at a federal level, CONAPESCA's General Directorate of Inspection and Surveillance aims to preserve CONAPESCA's systems and species. The task force is small (210 Federal Fisheries Officers in the country). There's an inter-institutional coordination with other competent authorities to There are procedures for inspection and surveillance, however, evidence that demonstrated the ability to enforce the management measures, is still lacking. Similarly, although a set of sanctions exists, evidence of these being consistently applied and thought to provide effective deterrence is not available.</p> <p>The FIP has one task related to this PI, and is to <i>“Share evidence through databases of incidents, violations, or sanctions, and, certified documents of</i></p>

						<p><i>compliance generate by red snapper fishery committee”</i> but has not started (as on March 2022 update). It is important to note that although the fishery authorizes the use of the fishing gears listed in this FIP (via the National Fisheries Chart profile), the UoA does not have those gears authorized within their current fishing licenses. As of the time of this audit was conducted (Feb 2023) the request to make the modification remains open.</p>
		3.2.4	Management performance evaluation			<p>There are mechanisms in place to evaluate some parts of the fishery-specific management system. The Carta Nacional Pesquera provides summary information about where, when and how much fishing is allowed, without altering the ecological balance and the most appropriate way to extract species susceptible of exploitation. This information is reviewed occasionally, but has not been updated since 2018.</p> <p>Stakeholder participation in the management process suggests that the management system is subject to internal and external review, including INAPESCA and other research and government agencies, NGOs, the industry and other stakeholders participating in the review process. However, the participants, form and frequency in which reviews occur for this fishery are not known. No evidence is available for this fishery, but assuming that the general fisheries management framework and the decision-making processes apply to this fishery, it is likely that it would meet SG60. This has to be confirmed</p> <p>Overall, there are mechanisms in place to evaluate some parts of the fishery-specific management system and the fishery specific management system is subject to occasional review. This PI currently remains unchanged.</p>

Environmental Workplan Results

Result	Related Action on Fishery Progress	Related MSC Performance Indicator	Explanation
Information gaps have been fulfilled by the implementation of a data collection program.	Fishery monitoring program	1.2.3, 1.1.2, 1.1.1, 2.3.3, 2.3.1, 2.4.1, 2.1.3, 2.1.1, 2.2.3, 2.2.1	Initial evaluation found that there was not enough data to score effectively score several areas of the fishery (e.g. confirmed catch composition), interactions of the gears with habitat and ecosystem impacts in general. The FIP, implemented training meetings to have in place fishing logbooks to collect information related to their fishing activity. As a result, data generated between 2019 and 2022 was analyzed and used to update the scores on several PIs (see scoring above).
Stock assessments using a more robust methodology (using data limited approach) was developed	Red Snapper stock assessment	1.1.1, 1.1.2, 1.2.3, 1.2.1, 1.2.4	Considering that the last official stock assessment was developed in 2000, there was a need to update information regarding to the status of the stock. FIP stakeholders, hired expert researchers that using a dynamic analysis of biomass to conduct the evaluation and using catch data records were able to generate an update for the fishery. The results indicate that the red snapper population is above the point where recruitment could be impaired, and currently working publishing these results in a peer review publication.
Ecosystem impacts of the fishery were inferred	Impacts on habitat and Ecosystem	1.2.1, 1.2.3, 2.3.3, 2.3.2, 2.3.1, 2.5.3, 2.5.1, 2.4.3, 2.4.1, 2.1.2, 2.1.1, 2.2.3, 2.2.2, 2.2.1	Effective assessment of the impacts of the fishery in habitat and ecosystem were not completely clear, the project started generating information through their monitoring system. In 2021, researchers started using bibliographic information that was complemented with the data generated by the project to developed a series of analysis that included the Productivity and Susceptibility Analysis of the species included in the bycatch, and the use of the ECOPATH with ECOSIM tool to inferred the impacts of the fishery in the ecosystem. The published results indicate that the red snapper fishery, generated low effects on the structure of the habitat and ecosystem. Authors recommended that a systematic fishery monitoring should be in place to better understand the changes in catch composition, and continue collecting information on trophic web interactions to update the evaluations (Perez-Jimenez et al 2022).

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