Peru anchovy - industrial purse-seine
Three-Year Evaluation Report

Version 1.3, November 2022

Purpose

The three-year evaluation report template was developed by FishChoice. The objectives of the three-year evaluation report are:

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

FIP Information

Target species scientific name(s) and common name(s) [state target stock(s), if relevant]	Anchoveta - Peruvian anchovy (*Engraulis ringens*), Northern-Central stock
Fishery location	FAO Area 87, in Peruvian waters; Pacific, Southeast
Gear type(s)	Purse Seine
Estimated FIP Landings (weight in tons)	2,320,018 metric tons (2022)
Vessel type(s) and size(s)	Steel and wooden (6 vessels) hull vessels with holds larger than 32.6 m^3
Number of vessels	213
Management authority	Ministerio de la Producción del Perú (PRODUCE)
Assessor name(s)	Antonio Gomez Gomez
Assessor Organization/Affiliation	Independent Consultant
Date of report completion	December 2023

Stakeholder Consultation & Meetings

To better understand the current status of MSC Performance Indicators (PIs) and the status of progress on the FIP action plans we hold a series of interviews with FIP and fishery key stakeholders. The communications with stakeholders occurred through scheduled virtual meetings. The table below provides information about the meetings, including person's names, organization, date, and main topics discussed.

Name	Affiliation	Date and Subjects Discussed
Carmen Guerrero	CeDePesca	17th November 2023 ● General FIP progress, challenges, and next steps on workplan implementation
Miguel Romero	CeDePesca	23rd & 29th November 2023 ● General FIP progress, challenges, and next steps on workplan implementation ● On-Board Observer Program scope ● Salvamares program scope ● P1 overview
Gloria Meneses	Sociedad Nacional de Pesquería (SNP) / National Fisheries Society	28th November 2023 ● General FIP progress, challenges, and next steps on workplan implementation ● FIP workplan overview ● Salvamares Program
Mayra Palacios	CeDePesca	30th November 2023 ● On-Board Observer Program scope ● Species and habitat P2
Salvador Peraltilla	Sociedad Nacional de Pesquería (SNP) / National Fisheries Society	6th December 2023 ● General FIP progress, challenges, and next steps on workplan implementation ● FIP workplan overview ● Salvamares Program
Marilu Bouchon Corrales Erich Enrique Diaz Acuña	Instituto del Mar del Perú (IMARPE) / Sea Institute of Peru	12th December 2023 ● Fishery research program and data analysis

		● Species and habitat P2 ● Quota recommendations ● P1 overview ● Salvamares,and Bitácoras de pesca programs overview
Javier Alfonso Gaviola Tejada Lincol Roller Polo Bordonabe Juan Carlos Córdova Calle	Ministerio de la Producción (PRODUCE) / Ministry of Production of Peru	<u>11th December 2023</u> ● Fishery management ● Harvest Control Rules ● Decision-making processes ● Enforcement and Compliance ● Landings inspections

Summary of Findings and Recommendations

The present evaluation report was based on the Peru anchovy - industrial purse-seine Fishery Improvement Project Work Plan (from January 2020 to November 2023). The FIP profile will be updated in December 2023, so some updates still need to be included in the FIP profile, which could consist of some of the recommendations presented in this report.

Since January 2020, FIP partners have been working on:

The FIP is advanced, with high scores on many of its indicators. The FIP is moving towards MSC certification, so it has been working on improving the available information, making it more robust, and having more evidence to score the different MSC indicators. In addition, there were also various publications reinforcing anchoveta fishery management.

FIP partners have focused on ensuring that the anchoveta fishery, as an LTL species, complies with Principle 1, which states that ecosystem needs must be considered (action 1). A review of P1 was carried out by a specialized consultant who confirmed the scores of the different performance indicators at the level of scoring issues. This provided a better understanding of where efforts should be focused. IMARPE conducted the reports of Tam et al. (2020), and Diaz et al. (2021), to strengthen that P1 complies with the MSC requirements. External professionals reviewed these reports, and their observations were attended to (action 6).

FIP partners have been working with authorities to strengthen management (action 3), especially the anchoveta fishing fleet for direct human consumption. The publication of R.D. N° 061-2020-PRODUCE/DGSFS-PA, establishing guidelines for PRODUCE to provide IMARPE with data on illegal and unreported fishing in the Peruvian anchoveta fishery, thus including some of the uncertainty in resource assessments. Likewise, the publication of Resolution No. 306-2020-PRODUCE establishes the guidelines for the calculation of the total allowable catch (TAC) for the DHC sub-fishery and its relationship with the IHC TAC, clarifying between both quotas the total allowable catch for the species.

In addition, FIP partners have been advocating to minimize and hopefully eradicate unreported fishing and illegal vessels in the artisanal fishery to ensure that exploitation levels are within sustainable limits at all times (Action 4). In November 2021, the Government of Peru issued Supreme Decree No. 024-2021-PRODUCE, which mandates using the SITRAPESCA traceability system for fishing activities, and the SIGPESCA georeferencing system for fish transport. The decree aims to strengthen control and surveillance in Peruvian fisheries, including the Peruvian anchoveta fishery, and to curb illegal and unreported fishing.

Also, data collection on Principle 2 species (action 5) has been maintained in the on-board observer program, where professional observers have held data collection (with some interruption during COVID). The Salvamares program, which consists of training crew members as observers, has increased, all vessels have trained personnel, and the program's coverage has increased considerably. This program has been coordinated since 2020 by the SNP. In addition, training has been provided to reduce the impact of unwanted species. On-board observer program reports are available in open digital repositories and Salvamares program data is on the Humboldt Institute website.

Recommendations

The reviewer could see evidence of an external review of the Tam et al. (2020) and Diaz et al. (2021) reports, and the observations were addressed. It is recommended to fully document the review process, i.e., what observations were made, and how they were incorporated in the final report, in case of further consideration in a future full assessment.

We recommended continuing to promote the Salvamares program and strengthening the details of data collection to match the on-board observer program. In addition to preserving both programs, although the On-board observer program has less coverage than the Salvamares program, it serves as a benchmark to verify the quality of data collection. It is a data collection independent of the fishing industry (avoiding a possible conflict of interest).

Principle 2 species correspond to low catch percentages relative to the total anchoveta catch (far below designated weight thresholds of 5% or 2%). However, for fisheries with "exceptionally large" landings (≥400,000mt), the MSC standard (2018) indicates that the audit team "*shall still classify a species as main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations*". Therefore, obtaining as much information as possible on the P2 species is recommended to know the real impact on primary, secondary, and ETP species, even if their catches/interactions percentages are low.

Regarding habitat interaction, as the last three-year evaluation report recommended, we recommend performing a CSA to score higher in the 2.4.1 and 2.4.3 PIs.

Regarding the six-monthly and annual reporting progress, it is recommended to be more precise when linking the different tasks with activities carried out or completed, since a task is sometimes marked as complete by complying with a different activity (not the one that describes it). For example, Task 3.2, "Promote the adoption of differentiated catch quotas or similar measures for longnose anchovy during the El Niño warm events", which was finally decided to change the focus and deal with the species in principle 2 instead, eliminating/changing the activity for an improvement in the information on this species in P2. It would be convenient to add new tasks, or modify the existing ones so that the tasks and the description of the six-monthly progress are better aligned.

Regarding the PI 3.2.3. A more detailed review of how sanctions that underwent judicial proceedings were resolved (and if there is a deterrent effect), and evidence of the effectiveness of the entire system to reduce IUU fishing could help increase the SI's scores.

Lastly, remember that if the fishery aims to achieve MSC certification, the new version 3.0 of the fishery standard is now in effect. The project will need to adapt to the latest changes and requirements.

Summary of MSC Performance Indicator Scores

The table was filled referring to the MSC Fisheries Standard v2.01.

Principle	Component	Performance Indicator		Previous Score [2022]	Current Score [2023]	Rationale or Key Points
1	Outcome	1.1.1	Stock status	>80	>80	Ecosystem reference points have not been established for the N-C anchovy fishery. IMARPE established a target reference point (TRP) of 6 million mt and a target reference point (LRP) of 4 million mt, with a precautionary level between the two that considered annual fluctuations due to changes in oceanographic conditions. In 2019, the aim was to maintain SSB at a minimum of 5 million mt (Fish Source, 2023). The biannual setting of TACs for the upcoming fishing season uses a decision tree that incorporates an estimation of abundance by size and biomass of the stock. This is updated according to the potential oceanographic conditions in the short term (6 months). It recognizes that the environmental variability for anchovy is high and that an F-based management approach is preferable to biomass-based reference points which have little meaning in the context of wide interannual variations in sea temperatures and other parameters (Report P1, 2020a). A recent study by Díaz et al. (2023) using a single-species model showed that in 2020, Peruvian anchovy spawning biomass was 6.17 Mt. In addition, IMARPE

(2022) showed that in early 2022, B was above 9780370 mt. Both reports were greater than the TRP of 5 million mt.

The exploitation rate of 0.35 used to establish the quota, which represents fishing mortality between 0.43 and 0.69 in the best and worst scenarios, is well below the status quo level of 0.784. The maximum E of 0.35 is expected to maintain biomass substantially above the TRP. The decision tree measures and reviews the risk (Report P1, 2020a).

MSC allows the default needs in relation to LTL species of 75% of SSB to be lowered to a minimum of 40%SSB if the defined level: (i) does not impact the abundance levels of more than 15% of the other species and trophic groups by more than 40% (compared to their state in the absence of fishing on the target LTL species); and does not reduce the abundance level of any other species or trophic group by more than 70%. (MSC, 2018).
The available evidence indicates the consistent application of E=0.35 over recent years. Since 2000, the biomass has been substantially above the TRP of 5 million mt and just once in the past 26 years has fallen below the LRP of 4 million mt. Biomass and landings reflect fluctuations due to ENSO variability (Report 2020b).

In addition, Tam et al., 2020 assessed the ecosystem impacts of fishing the Peruvian anchovy in the Northern Humboldt Current Ecosystem. This analysis highlighted "at the status quo fishing mortality (F = 0.784) and level of anchovy depletion (around 19 % B0), does not impact the abundance levels of more than 15 % of the other species and trophic groups by more than 40%, and also does not reduce the abundance level of any other species or trophic group by more than 70 %".

Altogether,

					a) it considered that the stock is highly likely above the point where serious ecosystem impacts could occur. SG80 is likely to be met b) the stock is at or fluctuating around a level consistent with ecosystem needs. SG80 is likely to be met
		1.1.2	Stock rebuilding	NA	NA	Teams shall only score this PI when Stock Status PI 1.1.1 does not achieve an 80 score. (MSC, 2018)
	Management	1.2.1	Harvest Strategy	>80	>80	The anchovy fishery in Peru is managed in two parts: the industrial Indirect Human Consumption (IHC) fishery and the Direct Human Consumption (DHC) fishery, which includes small-scale and artisanal vessels. Both sectors are regulated through licensing, mesh size restrictions, and minimum landing sizes. Additionally, there is a Total Allowable Catch (TAC) and quota system and a spatial and temporal closure system. The Ministry of Production (PRODUCE) has the authority to implement temporary and/or spatial closures when the proportion of juvenile anchovies in the catch is too high or for reproductive purposes. The decision to close the entire fishery is based on the percentage of juveniles and is made on a season-by-season basis. Real-time catch reporting and observer programs are used to monitor the percentage of juveniles on a set-by-set basis. In some cases, exceptionally high recruitment of juveniles has resulted in the cancellation of the second fishing season, which has occurred four times in the last decade. The percentage of juveniles is reported for each haul in the electronic logbooks submitted to PRODUCE, reducing the reliance on sanction systems and prioritizing data collection. This real-time data reporting system is primarily used in the IHC fishery and not as extensively in the DHC fishery. However, the DHC fishery has a restriction that limits the landing of juveniles to no more than 10%. Violations of this limit may result in temporary closures of the fished area. Landings in the fishery are monitored by PRODUCE inspectors in port. It is worth noting that the system for closing the artisanal fishery when juvenile

						catches are high is not as quick or well-structured as the IHC system. a) The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving the goals to protect the stock and the ecosystem as discussed by Tam et al (2020). SG80 is likely to be met b) Trends in biomass, catch and harvest rates indicate that, while the stock fluctuates due to natural environmental variability, the harvest strategy appears to achieve the objective of maintaining the stock above the target reference point. The strategy is currently achieving its objectives and has been tested in the past through low biomass situations, and measures have always come into effect to protect the stock. SG80 is likely to be met c) Ongoing monitoring of anchoveta catches and landings is conducted to ensure compliance with regulations. This involves the use of satellite monitoring systems, onboard observers, and inspections at landing points. SG80 is likely to be met d) SG80 is met by default. e) Shark finning is not taking place. SG80 is likely to be met
		1.2.2	Harvest control rules and tools	60-79	60-79	a) *"The large number of HCRs in place present the basis for management response to the findings of the decision tree that is up-dated annually. These can be considered as "generally" understood as it can be shown that they have been applied in some way in the past, and they are*

explicitly defined or agreed" (Report P1, 2020a). They are meeting the criteria for SG60.

The decision table to determine TAC indicates that IMARPE indicates the maximum capture to maintain the remaining spawning biomass above both target and limit reference points. From the table, PRODUCE will select the TAC (Protocolo, 2020). However, there is no specification about what harvest rate should be chosen or why.

The MSC standard states: "*The consideration to reach the SG80, the HCRs should be regarded as 'well-defined' in the sense required to achieve an 80 score when they exist in some written form that has been agreed by the management agency, ideally with stakeholders, and clearly state what actions will be taken at what specific trigger reference point levels*" (MSC, 2018).

Despite the management agency will act effectively when needed and reduce the exploitation rate (changes in TAC, spatial and timely closures, spatial management) (Report P1, 2020a), the lack of a "written form" agreed on what to do when PRI is approached is keeping this SI to score higher.
SG60 is likely to be met

b)
Cedepesca 2017 concluded that (i) the HCR stems from the decision tree and is adaptive to variations in oceanographic conditions and the juvenile proportion of the stock; and (ii) the harvest of IUU fishing is considered in the stock assessments. In addition, Report P1, 2020a concluded that takes uncertainty is considered.
SG80 is likely to be met

c)
"*the healthy stock status and previous management responses to risk of overfishing and to protect the juvenile element present evidence that the tools in use are appropriate to control harvest by the IHC fleet. While it*

				>80	>80	*has not been demonstrated the available tools would be effective at reducing harvest by the DHC fleet, the entire fishery has been closed to safeguard juveniles. It may be concluded that the HCTs are effective at achieving the exploitation level required*" (Report, 2020a). I concur with the statement. SG80 is likely to be met
		1.2.3	Information and monitoring	>80	>80	IMARPE employs various methods to monitor the anchovy stock. They conduct two independent surveys at sea each year before the fishing seasons begin. In addition, they gather data from mandatory sampling on board vessels, including biometric information, as well as data from the satellite vessel tracking system (SISESAT). The IHC fleet is required to sample 100 fish from each catch and report the catch and biological data to IMARPE and PRODUCE daily. IMARPE collects catch and size data from all landings at the landing ports. IMARPE has time series of the main reproductive indexes (sexual proportion, spawning frequency, fertility, and average female weight) that allow them to identify any changes in the anchovy spawning cycle, and to estimate spawning biomass and potential production of eggs. This allows them to predict recruitment in the coming season. IMARPE runs an observer program to collect scientific data. Scientific reports are published on the IMARPE website. 1-5% of trips are observed by the IMARPE program. a) Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy. SG80 is likely to be met b) Cedepesca 2017 concluded that stock abundance is monitored regularly and supports the HCR (Nothing has changed). The condition of the anchovy is monitored through the measurement of several parameters, also oceanographic conditions are monitored.

							SG80 is likely to be met
							c) There are estimations available of unregistered catch, which range from between 2% - 4% of the landings (Report 2020a), and unreported catch estimation is considered in the stock assessment. It is expected that SITRAPESCA systems will reduce IUU. Although there are some unregistered catches, there is a big certainty about all the removals from the stock. SG80 is likely to be met
		1.2.4	Assessment of stock status	60-79	>80		a) Previous assessments concluded "The population assessment is carried out using direct and indirect methods, which allow for the estimation of total biomass, spawning biomass, and size structures of the stock. Additionally, it is possible to estimate all the biological indicators and fishery characteristics through the onboard observer program." (CeDePesca, 2017). In addition, Report P1, 2020a concluded the assessment is appropriate for the stock and for the harvest control rule. Furthermore, the last report Díaz et al., 2021, reinforces all of the above considerations. SG80 is likely to be met b) The rationale for MSC scores changing (RSC, 2022) highlighted that "it was not clear how these reference points were calculated and why have been fixed for several years. The fishery needs to provide a better description of the origin, nature and ways to calculate the reference points. In particular, it needs to be described how such reference points are appropriate for a key LTL such as the anchovy and how having a static biomass level is justified in a highly variable, environmentally dependent stock". Diaz et al., 2021 addressed some of these concerns. TRP and LRP together with E (35%) are defined for the SSB.

							Although reference points are not in terms of ecosystem needs and impacts, from Tam et al., 2020, we can infer that the assessment is appropriate for the LTL stock. Although, it is recommended to describe better how the anchovy biological reference points "are appropriate" reference points for LTL species (in terms of ecosystem impacts and needs). SG80 is likely to be met c) The fishery has conducted different approaches to assess the status of the Peruvian anchovy using alternative methodologies. In addition, in Report P1, 2020a and RSC, 2022 describes how uncertainty was incorporated in the assessments. The assessment takes uncertainty into account. SG80 is likely to be met d) above 80 by default e) IMARPE has a review internal process before publishing. In addition, there is an external review of the reports. SG80 is likely to be met
2	Primary species	2.1.1	Outcome		>80	>80	There are several observer programs: 1. "Bitácoras de pesca" run by IMARPE and monitors the 4-5% of the trips. 2. Salvamares program monitors around 10% of trips (FishSource), 2023 (although recently it has increased considerably, ≥60%, but no report is available from recent years). 3. The private onboard observer program monitors a few portions of the fleet (avg. 8.33%). Some rules are in place that may reduce bycatch: it is not allowed higher bycatch than 5% in weight; minimum mesh size and fishing is not permitted within 5nm from shore and around some protected islands.

| | | | | | | | We used the On-board Observer program to analyze the different species in P2 due to the greater detail of the reports, despite his coverage being lower.

The average bycatch was low (0.808% in 2017-18; 0.7% in 2018_2; 1.3% in 2019; in 0.86% in 2021_2; 3.35% in 2022; and 0.97% in 2022_2).

Principle 2 species corresponded to low catch percentages relative to the total anchoveta catch (below designated weight thresholds of 5% or 2%). However, for fisheries with "exceptionally large" landings (≥400,000mt), the MSC standard (2018) indicates that the audit team "*shall still classify a species as main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations*".

Under the normal criteria, all primary species will be considered minor species. However, we considered Jack mackerel (*Trachurus murphyi*) and Pacific mackerel (*Scomber japonicus peruanus*), the two higher bycatch species during the season with higher % of bycatch (2022) as the main species(table 1).

Previous reports (MRAG, 2020) identified Hake (*Merluccius gayi peruanus*) and Humbolt or Jumbo squid (*Dosidicus gigas*) as primary species, both of which were minor. In the data reviewed for this report, % for these species was very low (or not even present in the reports).

a)
Jack mackerel and Pacific mackerel, both stocks are not overfished (IMARPE, 2020), so main secondary species are highly likely to be above biologically based limits. SG80 is likely to be met.

b)
SG80 is met by default. |

				>80	>80	For both species, there is a data collection strategy is currently implemented to manage primary species, comprising three main components: -Statistical stock assessments. -Pelagic Resource Hydroacoustic Assessment Cruises (IMARPE, 2020). -Three catch data collection initiatives continuously gather data, including Salvamares' logbook program, IMARPE's landings, and the On-board observer program (see 2.1.1). PRODUCE establishes catch limits based on IMARPE stock assessment, and closes the fisheries when quota limits are reached. a, b, c) All above, SG80 is likely to be met. d) In the On-board observer program did not report finning in the FIP fleet. In addition, Peru has in place several legislations where sharks must be landed with fins attached (E.g.: El Peruano 2016). SG80 is likely to be met. e) N/A
		2.1.2	Management strategy			
		2.1.3	Information	>80	>80	a, b, c) A comprehensive observer program (Salvamares) covers the main of the FIP fleet and a private onboard observation program covers a portion of the FIP fleet, systematically monitoring the catch, bycatch and associated species from 2017-2018 to the present. Additionally, IMARPE monitors catches on ports and has and observer program. SG80 is likely to be met for all Scoring issues.
	Secondary species	2.2.1	Outcome	>80	>80	There are several observer programs: 1. "Bitácoras de pesca" run by IMARPE and monitors the 4-5% of the trips. 2. Salvamares program monitors around 10% of trips (FishSource), 2023 (although recently it has increased considerably, ≥60%, but no report is available from recent years).

						3. The private onboard observer program monitors a few portions of the fleet (avg. 8.33%). Some rules are in place that may reduce bycatch: it is not allowed higher bycatch than 5% in weight; minimum mesh size and fishing is not permitted within 5nm from shore and around some protected islands. We used the On-board Observer program to analyze the different species in P2 due to the greater detail of the reports, despite his coverage being lower. The average bycatch was low (0.808% in 2017-18; 0.7% in 2018_2; 1.3% in 2019; in 0.86% in 2021_2; 3.35% in 2022; and 0.97% in 2022_2). Principle 2 species corresponded to low catch percentages relative to the total anchoveta catch (below designated weight thresholds of 5% or 2%). However, for fisheries with "exceptionally large" landings (≥400,000mt), the MSC standard (2018) indicates that the audit team "*shall still classify a species as main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations*". Under the normal criteria, all secondary species will be considered minor species. However, we considered Red squat lobster (*Pleuroncodes monodon*) due to the relative higher % through the On-board Observer reports (e.g.:table 1). In addition, we considered the Longnose anchovy (*Anchoa nasus*). Although it was nonexistent in the reports we reviewed, it has historically been considered a main secondary species (Cedespesca 2017; MRAG, 2020). a) Longnose anchovy biomass has been stable in the last 20 years (Figure 1). Red squat lobster, biomass estimated by IMARPE was

						con 1.504.517 t (IMARPE, 2021), spring 1t and 2.201.712t in summer 2019 (IMARPE, 2019b) and 1.080.545 t. in summer 2006 (IMARPE, 2006) Biomass seems to be stable so we can expect that Main secondary species are highly likely to be above biologically based limits. However, more information will be needed in a full assessment. SG80 is likely to be met. b) SG80 is met by default.
		2.2.2	Management strategy	60-79	>80	Both species (see 2.2.1) The season-long review of logbooks, landing information, and hydroacoustic studies provides the foundation for management measures concerning certain secondary main species. The fishery's monitoring systems, including observer programs and logbooks (see 2.2.1), follow a defined program with established goals, methods, sampling intensity, and necessary information. Bycatch release protocols, annual catch composition estimates from Salvamares' logbook program and CeDePesca's independent On-board observer program. In addition, biomass estimates provide some evidence that the species' partial strategy is being implemented successfully. a, b, c) All SIs above, SG80 is likely to be met d) In the On-board observer program did not report finning in the FIP fleet. In addition, Peru has in place several legislations where sharks must be landed with fins attached (E.g.: El Peruano 2016). SG80 is likely to be met. e) N/A
		2.2.3	Information	>80	>80	a, b, c) A comprehensive observer program (Salvamares) covers the main of the FIP fleet and a private onboard

				>80	60-79	observation program covers a portion of the FIP fleet, systematically monitoring the catch, bycatch and associated species from 2017-2018 to the present. Additionally, IMARPE monitors catches on ports and has and observer program. SG80 is likely to be met for all Scoring issues.
	ETP species	2.3.1	Outcome	>80	60-79	There are several observer programs: 1. "Bitácoras de pesca" run by IMARPE and monitors the 4-5% of the trips. 2. Salvamares program monitors around 10% of trips (FishSource), 2023 (although recently it has increased considerably, ≥60%, but no report is available from recent years). 3. The private onboard observer program monitors a few portions of the fleet (avg. 8.33%). All programs agreed that there is a large number of interactions but with low mortality rates among ETP species. Mitigation measures include crew member training in the correct release of bycatch (FishSource, 2023). In Peru, there is significant legislation for protecting marine ETP species, including the prohibition of hunting sea lions, the protection of birds associated with guano production, and the national system of marine protected areas around islands, islets, and guano points. However, this legislation does not yet include biological limits for these species (CedePesca, 2017). The interactions vary over the years. For example, one year with high interaction was the second season in 2022, which reported a total of 70,670 birds, 7,600 mammals interactions. With the 99.52% of indirect interaction and 0.48% of direct interaction and 0.14% of mortality for birds and 0.17% for mammals (Report, 2022b). Up to 25 birds species has been reported, were some species with some deadly interaction were: the Peruvian booby (*Sula variegata*, IUCN: Least Concern); Peruvian pelican (*Pelecanus thagus*, IUCN: Near Threatened); Blue-footed Booby (*Sula nebouxii*,

				■	■	IUCN: Low Concern); Franklin's Gull (*Leucophaeus pipixcan*, IUCN: Low Concern); Pink-footed Shearwater (*Ardenna creatopus*, IUCN: Vulnarable); Guanay Cormorant (*Leucocarbo bougainvilliorum*, IUCN: Near Threatened); the seabird most commonly released was the Sooty shearwater (*Ardenna grisea*, IUCN: Near Threatened)(FishSource, 2023). (see Table 2 for more information). For mammals: South American Sea Lion (*Otaria byronia*, IUCN: Low Concern); Dusky dolphin (*Lagenorhynchus obscurus*, IUCN: Low Concern); common dolphins (*Delphinus delphis*, IUCN: Low Concern); South American fur seals (*Arctocephalus australis*, IUCN: Low Concern). Some interactions with other species ETP (birds, reptiles or mammals) have been highlighted, but we wanted to highlight those in which mortality has been reported. a) N/A, there are no national or international requirements that set limits for the ETP species that interact with this fishery. b) Direct effects of the UoA are likely to not hinder the recovery of ETP species. Due to the large landings of the fishery, more information is needed to confirm that "Direct effects of the UoA are highly likely to not hinder recovery of ETP species." (Specially those birds with determined with some concerns, Near Threatened and Vulnerable by IUCN) SG60 is likely to be met. c) Indirect effects would be the removal of anchovy as a food resource. Tam et al., 2020 developed an ecosystem model to determine the impacts of the fishery over the food web (including ETP species), concluding that there were no relevant impacts.

						SG80 is likely to be met
		2.3.2	Management strategy	60-79	60-79	Peru recognizes different ETP species susceptible to direct or indirect interactions with the anchoveta fishery. Anchoveta is considered a key prey species of some ETP species of the Humboldt Current ecosystem. On the other hand, the fishery interacts with ETP species such as seabirds or marine mammals. National legislation declares a list of protected species and prohibits the capture of protected species (seabirds, turtles and marine mammals) for commercial purposes (DS 034-2004-AG), including Peruvian Diving Petrel, Humboldt penguin, Guanay cormorant, Peruvian pelican, Peruvian booby, green sea turtle, South American sea lion and Southern fur seal. The commercial catch, processing and marketing of small cetaceans (Law 26585), and sea turtles (D.S 026-2001-PE) are prohibited by national regulations (Fish Source, 2023). On the other hand, there is a national system of marine protected areas around islands, islets, and guano points.

Furthermore, Salvamares observers/fishers have been training in realease techniques to minimize ETP species and actively avoid capturing ETP species (e.g., sea lions, dolphins) by stopping or even canceling fishing operations if they observe several individuals around the net. Additionally, any entangled birds that can be safely released are set free (stakeholder personal communication).

a, b)
As detailed above, a strategy is in place that minimizes the UoA-related mortality of ETP species, and they are expected to ensure the UoA does not hinder the recovery of ETP species.
SG80 is likely to be met

c)
The measures are considered likely to work, based on the specific FIP fleet specific information that indicates that

						there is little to no UoA-related mortality of the vulnerable ETP species. Although there are many interactions, most individuals are generally released alive and in good condition. However, the interaction with birds in some cases the mortality is high (around 50% for some species, e.g: Report 2019, Report 2022 and Report 2022b) and measures could be improved. In addition, the measures that reduce bird interaction need to be clarified. We could not consider that "there is an objective basis for confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or the species involved". SG60 is likely to be met d) 60 is met by default. Vessels comply with VMS showing that any spatial or seasonal measures, relevant to ETP species, are being complied with. SG80 is likely to be met e) Some alternative measures have been reviewed to minimize UoA-related mortality of ETP species. But not a regular revision (CeDePesca, 2018) SG60 is likely to be met
		2.3.3	Information	>80	>80	a, b, c) There is a comprehensive observer program (Salvamares) that covers a large portion of the FIP fleet and private On-board observation program that covers a portion of the FIP fleet, systematically monitoring the catch, bycatch and associated species since 2017-2018 to present. In addition to the IMARPE observer program. On ETP species, as some birds and marine mammals, the monitoring protocol identifies indirect and direct interactions. 'Direct interaction' indicates that an animal was trapped; "Indirect interaction" indicates that an animal was observed but not trapped. If the interaction is direct, the data records whether they were released unharmed, harmed, seriously harmed, or dead.

				>80	60-79	SG80 is likely to be met for all Scoring issues.
Habitats		2.4.1	Outcome	>80	60-79	Peruvian anchoveta fishing utilizes purse seine nets, which would typically suggest minimal interaction with the seafloor. However, through the Onboard Observer Program some interactions with the seafloor have been reported. Seafloor interaction data were collected using observer inference (when the gear height exceeded the seafloor depth), the presence of sediment in the net, and information provided by the fishing skipper during net deployment (through the Onboard Observer Program). a) Due to the nature of the seabed described above is unlikely that the UoA is reducing the structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. SG60 is likely to be met. However, more information is needed in order to score higher. b) The UoA is highly unlikely to reduce structure and function of the VME habitats. It is not permitted to fish withing the first five miles of the coast, including in protected areas. In addition, vessels carry VMS, which allows control of the activity in proximity to protected areas. SG80 is likely to be met. c) SG80 is met by default.
		2.4.2	Management strategy	>80	>80	Fishing is prohibited around specific islands to preserve their ecological status as important habitats for birds or marine mammals. This conservation measure minimizes habitat interactions in these areas, further safeguarding

						their ecological integrity. In addition, fishing operations are not allowed by law within five nautical miles of the coast. In addition, vessels carry VMS, facilitating monitoring and enforcement on fishing grounds and protected areas. The Salvamares and On-board programs gather information about habitat interaction, performance analysis, annual reports, and making information available, showing that measures are being implemented. a, b, c, d) Because of all above, SG80 is likely to be met.
		2.4.3	Information	>80	60-79	a) and b) The types and distribution of the main habitats are broadly understood. Salvamares and On-board Observer programs gather information about the habitat, type of substratum, and interaction with the habitat. However, information about the nature and vulnerability needs to be well known. Some information about the main habitats is available but not a level of detail relevant for the scale and intensity of the UoA. SG60 is likely to be met. c) The Salvamares program has increased its coverage, which is close to 100% in 2023. SG80 is likely to be met.
	Ecosystem	2.5.1	Outcome	>80	>80	Northern Humboldt Current System (NHCS) is one of the most productive seas due to its coastal upwelling producing a high abundance of zooplankton that supports the large biomass of the Peruvian anchoveta and other species of ecological importance (Gonzalez-Pestana et al. 2022) Anchoveta biomass is strongly affected by the oceanographic conditions; periodically, the upwelling that drives the Humboldt Current Large Marine Ecosystem's productivity, where the fishery operates, is disrupted by El

						Niño-Southern Oscillation (ENSO) events (Fish Source, 2023). The greatest impact of this fishery is the potential reduction of anchoveta availability as important prey for the rest of the food web, with a lot of species depending on it. a) Tam et al., 2020 develop a specific analysis of fishery impacts over trophic levels using ecosystem models, concluding that the anchovy fishery did not have any major impact on the food web. So, it is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. SG80 is likely to be met.
		2.5.2	Management strategy	>80	>80	a) With all the above (regarding P2), we can consider there is a partial strategy in place, and is expected to restrain impacts of the UoA on the ecosystem. SG80 is likely to be met. b) Tam et al. (2020) and Diaz et al. (2021) set some objective basis that measures will work. SG80 is likely to be met. c) There is evidence that measures are being implemented successfully. E.g.: compliance with the regulations on protected areas (vessels must have VMS) and fishing quotas. SG80 is likely to be met.
		2.5.3	Information	>80	>80	a, b, c, d, e) IMARPE monitors all levels of the ecosystem, from algae up to marine macro-fauna, top predators, marine mammals and birds. The main functions of the different ecosystem components are known. Data is also collected by Salvamares and the On-board observer program .

				>80	>80	In addition, Tam et al., 2020 develop a specific analysis of fishery impacts over trophic levels (that is considered in the P1.1.1 for LTL species) that required abundant information about trophic levels and interactions in the ecosystems. SIs are likely to meet SG80.
3	Governance and Policy	3.1.1	Legal and customary framework	>80	>80	Not applicable since project does not have actions or tasks linked to this PI
		3.1.2	Consultation, roles and responsibilities	>80	>80	a) PRODUCE is the competent organization in the areas of fisheries, aquaculture, domestic industry, and trade, and is exclusively responsible for fisheries management, industrial fishing, large-scale aquaculture, industrial standardization, and regulated product management (Legislative Decree No. 1047 - Law on the organization and functions of the Ministry of Production). The LD95 is the law governing IMARPE, defining its roles and functions. Other entities in the fisheries sector include the National Fisheries Development Fund (FONDEPES), Fisheries Health Agency (SANIPES), Technological Institute of Production (ITP), National Institute of Quality (INACAL), National Program To Eat Fish, INNÓVATE PERÚ Program, Innovation Program in Fisheries and Aquaculture, and Program of Productive Diversification b) There is a 'Forum for sustainable fisheries and aquaculture' (http://www.fpas.pe/) whose objective is to promote dialogue and research among the different actors in fisheries and aquaculture in Peru. Forum members include regulators, NGOs, companies, and academics. The forum organizes multiple meetings per year both in Lima and regionally to discuss relevant topics such as management issues. There is also an electronic suggestions platform. This forum has increased the ability for all parties to be involved (CeDepesca, 2018). Withal, the management system includes consultation processes that regularly seek and accept relevant information. The management system demonstrates consideration of the information obtained.

						c) The management system incorporates both informal and formal mechanisms to actively involve stakeholders. Engaging stakeholders in sharing proposals, and meetings with the government are a regular practice within the system. SG80 is likely to be met for all SI's. No changes in this PI
		3.1.3	Long term objectives	>80	>80	Not applicable since project does not have actions or tasks linked to this PI
	Fishery specific management system	3.2.1	Fishery specific objectives	60-79	60-79	a) The management system implemented for this specific fishery includes clear protocols for establishing the Total Allowable Catch (TAC) to keep the stock within sustainable biological limits, under Principle 1. However, there are no explicit short- and long-term objectives related to P2, or about ecosystem needs (important for LTL fishery in P1). (PRODUCE, 2017) SG60 is likely to be met.
		3.2.2	Decision making processes	60-79	60-79	Not applicable since project does not have actions or tasks linked to this PI
		3.2.3	Compliance and enforcement	>80		An electronic log system was implemented for all fleets to enforce controls and satellite monitorization is in place (SISESAT). Several measures are in place for intensive monitoring and inspection by IMARPE and PRODUCE (on port and on board). In 2021, it was also implemented a mandatory registry of information in mobile systems (Sistema de Trazabilidad de Pesca y Acuicultura - SITRAPESCA - and in the Sistema Georreferenciado de Pesca y Acuicultura - SIGPESCA) to ensure the traceability of the resources (Fish Source, 2023). a) The legal framework exists. In addition, PRODUCE published Legislative Decree No. 1393 which establishes measures to combat illegal activities in fishing. Likewise, at the beginning of 2019, PRODUCE published the Protocol (No. 054-2019-MP-FN) that aims to establish the procedure that must be developed to execute interdiction operations against the illegal activities related to the extraction and illegal prosecution of aquatic species,

						arranged by the prosecutor in charge of the investigation (FP, 2023). There is a mandatory satellite VMS and staff from PRODUCE at the legal landing points (focus mainly on IHC, personal communication). Altogether, it can be considered as a system, and due to the high level of control of the IHC fleet. SG80 is likely to be met. b) The law of Inspection and Sanction for the Activities of Fishing and Aquaculture 017-2017-PRODUCE, set the sanctions with non -non-compliance, and there is evidence that sanctions are applied. However, they are applied through long judicial processes that tend to prescribe, there is not a sufficient deterrent effect (CeDePesca, 2017) SG60 is likely to be met. c) Generally speaking, it is believed that the fishermen adhere to the regulations of the fishery management system (stakeholder personal communication) (SG60). Furthermore, measures have been implemented to address and rectify irregularities in recent years, thereby hindering the operation of illegal activities (e.g.: D LEGISLATIVO Nº 1393, SITRAPESCA). Evidence demonstrating the effectiveness of the MCS systems may increase SI scores. SG60 is likely to be met. d) There are some concerns about anchoveta for direct human consumption sold to fishmeal processing plants, which is not allowed (e.g. Grillo et al., 2019, De la Puente, 2020). These concerns and insufficient evidence to ensure no systematic non-compliance may prevent achieving SG80. SG60 is met by default.
		3.2.4	Management performance evaluation	>80	>80	a, b)

<table>
<tr><td colspan="6"></td><td>In recent years, the available evidence strongly indicates that the management system has undergone continuous reviews as the government has endeavored to address the challenges that have historically affected the sector. Some of the challenges include significant fluctuations in annual harvests, illegal fishing, and insufficient research for a fishery as substantial and intense as the anchovy fishery (see Report P3, 2020). Regular internal reviews are conducted, along with occasional external reviews. In addition, a fishery-specific Management Strategy Evaluation (MSE) was performed by IMARPE (Although it is not clear what implementation/modifications were done).
SG80 is likely to be met.</td></tr>
</table>

Table 1 Total catch (Kg), frequency of occurrence of fish species, crustaceans, mollusks and cnidarians that make up the accompanying fauna observed by the private On-Board Observer Program of the Peruvian anchovy fishery for indirect human consumption during the months of May-July 2022- Season 2022-I.

GT	NOMBRE COMÚN	NOMBRE CIENTIFICO	# Reg	FO	may	jun	jul	Total general	% Cap Inc	% Cap Total
CNIDARIOS	Malagua	*Chrysaora plocamia*	7	4%	2.45			2.45	0.001%	0.000%
CRUSTÁCEOS	Munida	*Pleuroncodes monodon*	85	43%	5,320.36	28,245.09	6,007.46	39,572.91	8.7%	0.3%
M-Cefalópodos	Argonauta	*Argonauta argos*	4	2%	91.50			91.50	0.0%	0.0%
M-Cefalópodos	Calamar	*Loligo gahi*	3	2%		91.01		91.01	0.0%	0.0%
PC-BATOIDEOS	Raya águila_2	*Myliobatis sp.**	3	2%	14.28		9.99	24.27	0.01%	0.00%
PC-BATOIDEOS	Raya	*Raya indet.*	1	1%		5.00		5.00	0.001%	0.000%
PC-BATOIDEOS	Raya águila_1	*Myliobatis sp.*	1	1%			0.35	0.35	0.0001%	0.0000%
PC-SELACHIMORFA	Tiburón azul	*Prionace glauca*	3	2%	135.90		7.50	143.40	0.0%	0.0%
PC-SELACHIMORFA	Tiburón martillo	*Sphyrna zygaena*	1	1%	3.80			3.80	0.001%	0.000%
PECES ÓSEOS	Caballa	*Scomber japonicus peruanus*	39	20%	8,012.05	187,820.82	5,235.42	201,068.29	44.4%	1.5%
	Jurel	*Trachurus picturatus murphyi*	7	4%	560.47	150,416.40		150,976.87	33.4%	1.1%
	Bonito	*Sarda chiliensis chiliensis*	4	2%	39,851.11			39,851.11	8.8%	0.3%
	Barrilete	*Katsunowus pelamis*	4	2%	19,589.48	544.23		20,133.71	4.5%	0.1%
	Agujilla	*Sphyraena ensis*	1	1%	341.53			341.53	0.1%	0.0%
	Cojinova	*Seriolella violacea*	1	1%		60.55		60.55	0.01%	0.00%
	Pampanito	*Trachinotus paitensis*	1	1%			18.35	18.35	0.00%	0.00%
	Espejo	*Selene peruviana*	2	1%		5.66		5.66	0.001%	0.000%
	Bagre	*Galeichthys peruvianus*	1	1%			0.15	0.15	0.0000%	0.0000%
		Captura Total Fauna acompañante (kg)			73,922.93	367,188.76	11,279.22	452,390.90		3.35%

Table 2. Example of interactions with birds during onboard observers for 2022 (Report 2022b).

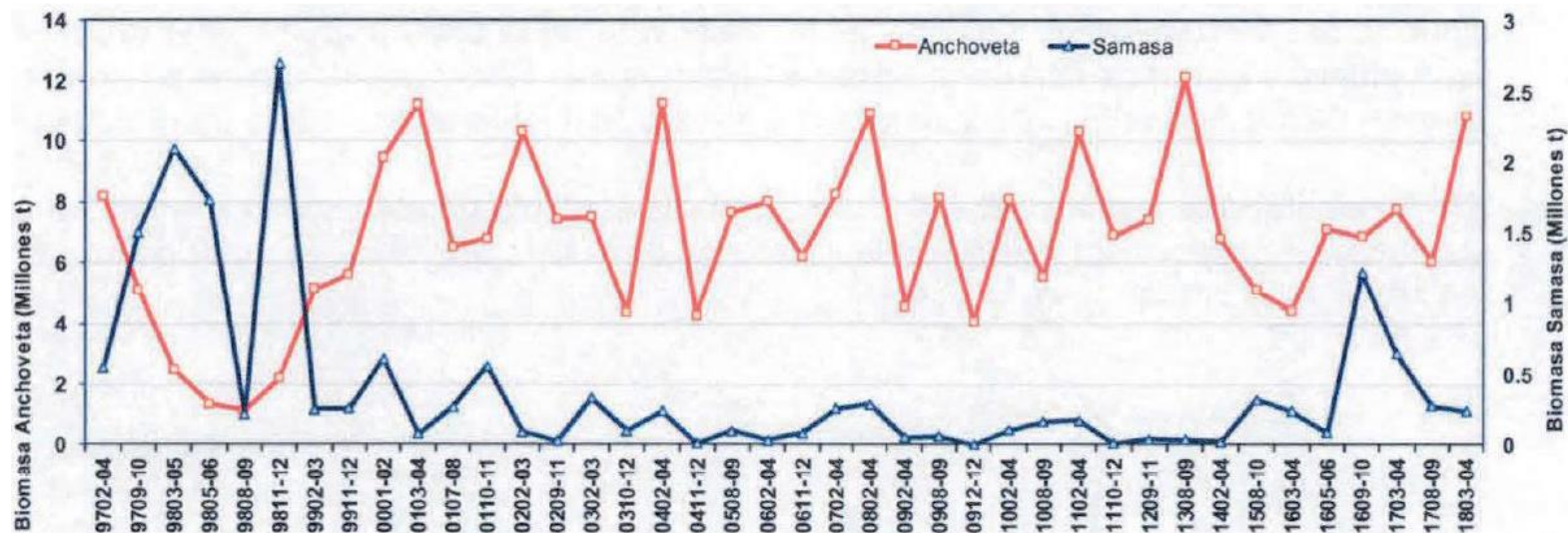| ESPECIE | Interacción Indirecta (No sufrieron daños) | | | Interacción Directa (Sufrieron daños) | | | | Post-Captura (Sufrieron daños) | | | | Total Individuos | Frecuencia de Ocurrencia |
| | | | | Antes | Durante | | Después | Estado en el que quedaron los individuos después de sufrir daños | | | | | |
| | Se encontraban presentes durante toda la faena, pero no sufrieron ningún daño. | | | Mientras se extiende el cerco | Cuando se inicia el cierre del cerco y se procede a llevar la red a bordo | | Cuando la red se encuentra a bordo y empieza a envasar la captura hasta que se termina la faena | | | | | | |
	I-N/S	I-P/E	I-A/E	D-A1	D-D1	D-D2	D-Ds1	P-C1	P-C2	P-C3	P-C5		
Albatros de las Galápagos - *Phoebastria irrorata*	1,401		820			1		1				2,222	32.85%
Cormorán guanay/Guanay - *Phalocrocorax bougainvilii*	650		85		3			3				738	13.50%
Fragata magnífca - *Fregata magnificens*	68	49	54									171	5.47%
Gaviota de Sabine- *Xema sabini*	116											116	1.46%
Gaviota de frankiln - *Leucophaeus pipixcan*	16,143		6,893		8			8				23,044	47.81%
Gaviota dominicana - *Larus dominicanus*	287	10	260									557	17.15%
Gaviota indet.	22		10									32	0.36%
Gaviota indet. *Larus* sp.	29											29	2.19%
Gaviota peruana - *Larus belcheri*	1365	14	482									1,861	16.42%
Gaviotín común - *Sterna hirundo*	1		5									6	0.73%
Gaviotín elegante - *Sterna elgans*	1											1	0.36%
Gaviotín peruano - *Sternula lorata*	2162	5	1770									3,937	6.20%
Golondrina de mar acorallada -*Oceanodroma hornbyi*	46											46	1.46%
Golondrinas de mar - *Hydrobates* sp.			14				1			1		15	2.19%
Págalo pomarino - *Stercorarius pomarinus*	169		20									189	5.47%
Pardela común /gris - *Puffinus griseus*	1371		189									1,560	25.55%
Pardela de pata rosada - *Puffinus creatopus*	3		3									6	0.73%
Pardela indet.	13											13	1.46%
Pelicano peruano - *Pelecanus thagus*	1984		942	1	2			1			2	2,929	34.31%
Petrel de mentón blanco - *Procellaria aequinoctialis*	1											1	0.36%
Petrel indet.	3											3	0.73%
Piquero de pata azul - *Sula nebouxii*	5996		3414		172	1	2	74		21	80	9,585	10.95%
Piquero peruano - *Sula variegata*	1659	15	613	3	7		2	10	2			2,299	22.99%
Potoyunco - *Pelecanoides garnotii*	536		2									538	4.74%
Zarcillo - *Larosterna inca*	13844	35	6893									20,772	33.94%
Total de individuos	47,870	128	22,469	4	192	2	5	97	2	22	82	70,670	
Delfín - Delfín indet.	82						6		6			88	2.19%
Delfín común - *Delphinus capensis*	354		43		4				4			401	4.74%
Delfín nariz de botella - *Tursiops truncatus*	14		25									39	0.73%
Delfín oscuro - *Lagenorhynchus obscurus*	70				11			1		10		81	1.46%
Lobo chusco - *Otaria byronia*	853		5962		123	7	20	12	76		62	6965	79.93%
Lobo indeterminado			26									26	1.09%

Figure 1. Longnose anchovy biomass estimates for 1997-2018 (IMARPE, 2019)

Environmental Workplan Results

The three-year evaluation template defined a result as:

- A regulatory policy change or regulatory action to improve the fishery (e.g., a new bycatch provision), or fishing practice change (e.g., a change in fishing gear developed voluntarily and implemented by the FIP) to improve the fishery
- A publicly verifiable positive change in the water (e.g., an increase in biomass of target stock, an increase in population of impacted protected species, a decrease in habitat or ecosystem impacted)
- An activity that led to an MSC performance indicator score change in the fishery

The following table presents the results of the Peru anchovy - industrial purse-seine Fishery Improvement Project three-year evaluation report.
Please note, completed actions are indicated in gray.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Explanation
1.2 Published the report "Ecosystem impacts of fishing the low trophic	1. Demonstrating that the management system	1.2.1, 1.1.2, 1.1.1	Task 1.2. Elaborate a document analyzing the role of anchovy in the ecosystem and the trophic needs of species that prey on it.

level Peruvian anchovy in the Northern by IMARPE. 1.3 Independent assessment report of the Peruvian anchovy fishery against MSC PI 1.1.1A (stock status for key LTL species). Increase in BMT score 1.1.1 1.4. Report analyzing the current performance of the fishery's harvest strategy against the MSC requirements for component 1.2 (Harvest strategy / Management).	considers the ecosystem needs.		Explanation: IMARPE published the document "Ecosystem impacts of fishing the low trophic level Peruvian anchovy in the Northern Humboldt Current Ecosystem" (Tam et al., 2020), this study analyzed the role of anchovy in the ecosystem and the trophic needs of species that prey on it. FIP partners have long advocated the need to verify that the fishery complies with the ecosystem's needs defined by the MSC standard. Task Completed in March 2020 Task 1.3. Elaborate a document together with the specialist hired in Task 1.1 to analyze whether the fishery complies fully with the MSC requirements for LTL species. Explanation: FIP Partners decided to contract a consultant to independently assess the fishery performance against MSC PI 1.1.1A (stock status for key low tropic level species). In the opinion of the external consultant, the Peruvian anchovy fishery would meet the MSC standard for PI 1.1.1A with a score of 90. Task Completed in June 2020 Task 1.4 Secure an independent analysis of the current performance of the fishery's harvest strategy against the MSC requirements for component 1.2 (Harvest strategy / Management). Explanation: FIP partners decided to add this task to the Action Plan, and requested an independent analysis of the current performance of the fishery against the four performance indicators that comprise MSC Component 1.2 (Harvest Strategy / Management). In the specialist's opinion, the analysis of the fishery performance in relation to the PIs comprising Component 1.2 indicates that the fishery would meet the MSC standard for Principle 1 at the SG80 level. However, three PIs in C1.2 are expected to attain scores above 60, but below 80 points. Task Completed in August 2020
No Applicable	2. Building a database derived from data gathered by the industrial fishing vessels.	2.3.3, 2.3.2, 2.3.1, 2.5.3, 2.5.2, 2.5.1, 2.4.3, 2.4.2, 2.4.1, 2.1.3, 2.1.2, 2.1.1, 2.2.3, 2.2.2, 2.2.1	Task completed in the previous three-year evaluation period
3.5. Publication of the R.D. N° 061-2020-PRODUCE/DGSFS-PA,	3. Promoting improvements for the Management System.	1.2.2, 1.2.1, 1.2.3, 2.3.2, 2.5.2, 2.4.2,	Task 3.1. Draft a proposal that ensures that harvest control rules under a low biomass scenario and the management objectives regarding the ecosystem are explicitly considered.

establishing guidelines for PRODUCE to provide IMARPE with data on illegal and undeclared fishing in the Peruvian anchovy fishery. 3.5. Publication of Resolution N° 306-2020-PRODUCE establishes the guidelines for calculating the total allowable catch (TAC) for the DHC sub-fishery an its relation to the IHC TAC		2.1.2, 2.2.2, 3.2.3, 3.1.2, 3.2.1, 3.2.4	Explanation: FIP partners agreed to extend their collaboration to complete several actions to achieve the FIP goals. Task completed in July 20 Task 3.2. Promote the adoption of differentiated catch quotas or similar measures for longnose anchovy during the El Niño warm events. Explanation: This activity was modified because the longnose anchovy can be considered a P2 species, and it is unnecessary to define differentiated quotas to reach a certifiable level. Instead, it was decided to secure the necessary information to evaluate this species in principle 2 as a main secondary specie. Task completed in April 20 Task 3.5. [MODIFIED] Hold meetings with fishery managers to encourage clarification of the relation between the IHC and DHC TACs, and transparency on how IUU fishing in the DHC fishery is handled, including compliance regarding judicial decisions. Task completed in January 2021
4.4. In November 2021, the Government of Peru issued Supreme Decree N° 024-2021-PRODUCE, which mandates the use of the traceability system SITRAPESCA for fishing activities, and the geo-referencing system SIGPESCA for the transport of fish. The decree aimed to strengthen control and surveillance in the Peruvian fisheries, including the Peruvian anchovy fishery, and to curb illegal and unreported fishing.	4. Promoting actions to increase traceability and minimize illegal activities in the small-scale fishery operating over the same fish stock.	1.2.2, 1.2.3, 3.2.3, 3.1.2	Task 4.4 [MODIFIED] Hold meetings with the authorities to support the implementation of actions to monitor and control fishing activities, guarantee the traceability of hydrobiological resources and products, and prevent IUU fishing. Explanation: FIP partners have been advocating for improvements in the fight against IUU fishing. In addition, they have been supporting the implementation of the SITRAPESCA program to expand its application. Although it is not entirely attributable to the FIP, the government's adoption of SITRAPESCA constituted a significant step for the FIP, as FIP partners had advocated for measures for several years. FIP partners have held several meetings with PRODUCE to better understand the implementation and monitoring in the fishery. Task on going Task 4.5. Disseminate the results of the workshops. Explanation: By installing the relevant topics in the fishery agenda, the FIP encouraged PRODUCE to adopt Ministerial Resolution N°306-2020 establishing a transparent mechanism for the definition of the DHC quota and making explicit the relation between both quotas and the scientific advice provided by IMARPE. The result of this task (Publication of Resolution N° 306-2020-PRODUCE) is shown above in action 3. Task completed in December 2020

			Task 5.5. Analyze and publish the outcomes of the observer program. Explanation: Reports from Onboard Observers Program have been analyzed up to date, and the Salvamares program from 2017-January 20, and they are available. SNP is charge of the the Salvamares program since 2020. The Salvamares program has increased in scope. Mainly, all the FIP fleets have trained staff. In addition, reports from On-board observer program are available in the Educación Superior Tecnológico Público "Ricardo Ramos Plata" repository (RRP, 2023); and Salvamares data in the Humboldt Institute website (IHMA, 2023). Task completed in September 21
5.5. Onboard Observers Program and Salvamares program technical reports are available at the Educación Superior Tecnológico Público "Ricardo Ramos Plata" repository. Salvamares program has their data available in the webside of Humboldt Institut. In addition, specific FIP fleet interaction information regarding P2 species and habitat is available.	5. Determining the impacts of the industrial fleet on ETP species and other ecosystem components and mitigate them, if necessary	2.3.3, 2.3.2, 2.3.1, 2.5.3, 2.5.2, 2.5.1, 2.4.3, 2.4.2, 2.4.1, 2.1.3, 2.1.2, 2.1.1, 2.2.3, 2.2.2, 2.2.1	Task 5.6. Promote space and time measures to mitigate the impact, in case it is deemed necessary in light of the analysis of the collected information. Explanation: Crew members have been trained to improve the release of species that may be affected by fishing operations. An Alliance between CeDepesca, WWF-Peru and SNP was formed to enhance the dissemination of release techniques. On the other hand, the information gathered so far indicates that no additional measures are needed. Task completed in September 21

Task 5.7. Hire an external validation for the Salvamares Program and the private Onboard Observers Program to identify improvement needs. Explanation: a certification company was hired to assess both programs (Salvamares and Onboard Observer Program) to recommend how to improve data collection. The final report was delivered with recommendations on how to make the Salvamares program more accurate about the information gathering (The final report is confidential). Task completed in October 21

In addition, the Salvamares Program Manual was updated (an output from 2017), with updated information about the program, goals, guidelines, and policies, among others.

Although all the above tasks are completed, this action is pending a task update. |
| 6.1. Review of Tam et al., and Diaz et al., reports by an external peer, | 6. Reinforcing the certainty of the information and assessment indicators for the target stock. | 1.2.4, 1.2.1, 1.1.1 | Task 6.1. Promote the peer review of Tam et al and Diaz et al assessment reports. |

improving the scoring of PI 1.2.4.			Explanation: Several meetings have been held with Produce and IMARPE where the need for peer review of both assessments was highlighted. In early 2023, the reports were reviewed by an external independent scientist, and IMARPE addressed the observations. Task completed in November 23

Supporting References

CeDepesca, 2017. Proyecto de mejoras (PROME) para alcanzar un estatus certificable para la pesquerái de anchoveta CHI stock centro-norte. 2017 https://fisheryprogress.org/system/files/documents_assessment/2017%2008%2014_CeDePesca_anchoveta%20CHI_actualizaci%C3%B3n%20de%20an%C3%A1lisis%20de%20desempe%C3%B1o%20MSC.pdf

CeDePesca, 2018. PROME de la pesquería de anchoveta peruana para Consumo Humano Indirecto. Justificación de cambio de puntuación, 2018. https://fisheryprogress.org/sites/default/files/indicators-documents/2018%2003%2027_anchoveta%20CHI_justificaci%C3%B3n%20cambio%20puntaje%20MSC_0.pdf#overlay-context=node/3546/improvement

De la Puente, S., R. López de la Lama, S. Benavente, J. C. Sueiro, and D. Pauly. 2020. Growing Into Poverty: Reconstructing Peruvian Small-Scale Fishing Effort Between 1950 and 2018. Frontiers in Marine Science 7. https://www.frontiersin.org/articles/10.3389/fmars.2020.00681

Diaz, Eric, Quispe, Elmer, Marin, Pablo, 2021. Assessment of the north-central stock of the Peruvian anchoveta (*Engraulis ringens*) using a stochastic surplus production model in continuous-time. Instituto del Mar del Perú

El Peruano. 2016. Normas Legales 60327. Articulo 1.- Prohibición de desembarque de aletas sueltas del recurso tiburón.

Fish Source, 2023. Retrieved on November 30th, 2023. https://www.fishsource.org/stock_page/1383

Gonzalez-Pestana, A., J. Alfaro-Shigueto, and J. C. Mangel. 2022. A review of high trophic predator-prey relationships in the pelagic Northern Humboldt system, with a focus on anchovetas. Fisheries Research 253:106386. https://www.sciencedirect.com/science/article/abs/pii/S0165783622001631

Grillo, J., R. Gozzer, J. C. Sueiro, and J. C. Riveros. 2019. Producción ilegal de harina de pescado en Perú a partir de anchoveta extraída por la flota artesanal y de menor escala. Oceana Peryu. 28 pp. OCEANA Peru. https://www.researchgate.net/publication/331135042_Produccion_ilegal_de_harina_de_pescado_en_Peru_a_partir_de_anchoveta_extraida_por_la_flota_artesanal_y_de_menor_escala

IMARPE 2006. DISTRIBUTION AND BIOMASS OF THE MAIN PELAGIC RESOURCES OF PERUVIAN SEA. SUMMER 2006. file:///C:/Users/antog/Documents/Asesor%C3%ADa%20FIPs/Anchoveta%20CHI/Reporte/Programa%20Observadores/INF.%2036(3-4)-5.pdf

IMARPE 2019. Biología y Pesquería de samasa (*Anchoa nasus*) en el litoral Peruano durante el periodo 1995-junio 2018. 10p.

IMARPE 2019b. DISTRIBUTION AND BIOMASS OF THE PELAGIC, NERITIC, AND OCEANIC RESOURCES IN THE PERUVIAN MARINE ECOSYSTEM OBTAINED THROUGH HYDROACOUSTIC CRUISES (2019)
file:///C:/Users/antog/Documents/Asesor%C3%ADa%20FIPs/Anchoveta%20CHI/Reporte/Programa%20Observadores/Bol%2035(2)-3.pdf

IMARPE 2020. OFICIO 1278-2020-IMARPE-PCD.
https://www.gob.pe/institucion/imarpe/informes-publicaciones/1924963-informe-correspondiente-al-oficio-n-1278-2020-imarpe-pcd

IMARPE 2021. ABUNDANCE OF *Engraulis ringens* AND OTHER PELAGIC SPECIES IN THE PERUVIAN MARINE ECOSYSTEM DETERMINED BY ACOUSTIC METHODS IN 2021.
https://biblioimarpe.imarpe.gob.pe/bitstream/20.500.12958/8165/1/Boletin%2038-1%20articulo%207.pdf

IMARPE 2022.Situación del stock norte-centro de la anchoveta peruana (*Engraulis ringens*) al 1 de abril y perspectivas de explotación para la primera temporada de pesca de 2022.

Instituto Humboldt de Investigación Marina y Acuícola (IHMA, 2023). Reviewed in December 2023
https://ihma.org.pe/data-de-calas-y-biometria-por-anos-y-temporadas/

IUCN, The IUCN red list of threatened species.
https://www.iucnredlist.org/

MRAG. 2020. Peru anchovy - industrial purse-seine - Independent 3 year Audit. 48 pp.
https://fisheryprogress.org/system/files/independent_audit/Peruvian_Anchovy_IHC_FIP_Review_2019_GB2338.pdf

MSC, 2018. MSC Fisheries Standard. Version 2.01.

Produce. 2017. Decreto Supremo Nº 005-2017-PRODUCE. Reglamento de Ordenamiento Pesquero del Recurso Anchoveta para Consumo Humano Directo. 14 p.

Protocolo, 2020. Elaboración de la Tabla de Decisión para la determinación del Límite Máximo de Captura Total Permisible por temporada de pesca en la pesquería del Stock Norte-Centro de la anchoveta peruana. 2020. Ministerio de la Producción. Instituto del Mar del Perú. Ed:05.

Report 2019. PROGRAMA PRIVADO DE OBSERVADORES. Pesquería de anchoveta peruana para Consumo Humano Indirecto – CHI Stock Centro- Norte - Temporada 2019.

Report 2022. PROGRAMA PRIVADO DE OBSERVADORES. Pesquería de anchoveta peruana para Consumo Humano Indirecto – CHI Stock Centro- Norte - Temporada 2022 – I.

Report 2022b. PROGRAMA PRIVADO DE OBSERVADORES. Pesquería de anchoveta peruana para Consumo Humano Indirecto – CHI Stock Centro- Norte - Temporada 2022 – II.

Report P1, 2020a: Working Group Fishery Improvement Project Peru Anchovy Industrial Purse Seine (FIP- Anchoveta) Component 1.2, 2020.
https://fisheryprogress.org/system/files/independent_audit/Peruvian%20anchovy%20MSC%20Comp%201.2%20%28200819%20FINAL%20%20%20PERU%20C1.2%29.pdf

Report P1, 2020b: Working Group Fishery Improvement Project Peru Anchovy Industrial Purse Seine (FIP- Anchoveta). PI 1.1.1A. 2020:
https://fisheryprogress.org/sites/default/files/documents_actions/Peruvian%20anchovy%20MSC%20PI%201.1.1%20%28200608%20%20FINAL%20peru%201.1.1%20v4%29_0.pdf#overlay-context=node/3446/actions-progress

RRP, 2023. Educación Superior Tecnológico Público "Ricardo Ramos Plata" repository (RRP, 2023). Reviewed in December 2023.
https://www.istprrp.edu.pe/repositorio/listar.php

Report P3, 2020: Working Group Fishery Improvement Project Peru Anchovy Industrial Purse Seine (FIP- Anchoveta). Principle 3. 2020:
https://fisheryprogress.org/system/files/independent_audit/Peruvian%20anchovy%20MSC%20P3%20%28201105%20PERU%20p3%20final%20version%29_1.pdf

RSC 2022. Rationale for MSC scores changes.
https://fisheryprogress.org/sites/default/files/indicators-documents/Rationale%20for%20MSC%20scores%20changing.pdf#overlay-context=node/3546/improvement

Tam, Jorge, Taylor Marc and Phd. Ñiquen, Miguel, 2020. Ecosystem impacts of fishing the low trophic level Peruvian anchovy in the Northern Humboldt Current Ecosystem. Instituto del Mar del Perú.
https://fisheryprogress.org/sites/default/files/documents_actions/IMARPE_Ecosystem%20impacts%20of%20fishing%20Peruvian%20anchovy%20in%20the%20NHCE%20-%202020%2004%2015_0.pdf#overlay-context=node/3546/actions-progress