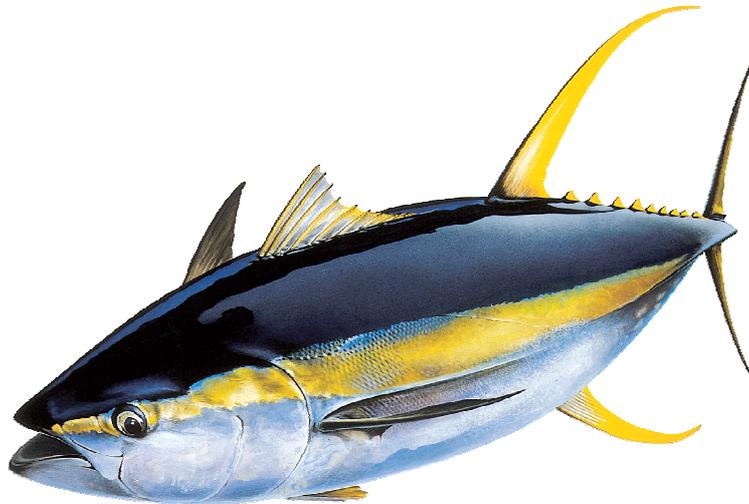


SANT YAGO TF UNASSOCIATED PURSE SEINE ATLANTIC YELLOWFIN TUNA FISHERY



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PUBLIC COMMENT DRAFT REPORT

NOVEMBER 2018

Conformity Assessment Body: **BUREAU VERITAS CERTIFICATION HOLDING SAS**



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Client: **SANT YAGO TUNA FISHERIES N.V.**

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Glossary

Below are presented the abbreviations and acronyms used in the report. The terms defined here do not contradict terms used in the MSC-MSCI vocabulary.

Concepts and terms:

B_{MSY}	Biomass at MSY
B_{lim}	level of biomass that should be avoided considering that beyond such limits, the sustainability of the stock may be in danger
B_{target}	Management objective based on a level of biomass that should be achieved and maintained;
$B_{threshold}$	level of biomass reflecting the precautionary approach that triggers pre-agreed management actions to reduce the risk of breaching the limits. Thresholds should be set sufficiently far away from limits so that there is low probability that the limits will be exceeded
BRP	Biological Reference Points
CAB	Conformity Assessment Body (in the case of this particular assessment the CAB is BV)
CoC	Chain of Custody
COC	Code of Conduct
CPC	Contracting Party (ICCAT) Convention
CPUE	Catch per Unit Effort
ETP	Endangered, Threatened and Protected
f/v	Fishing vessel
F_{MSY}	Fishing mortality at MSY
F_{target}	Management objective based on a fishing mortality rate that should be achieved and maintained
FAD	Fish Aggregating Device
FCR	(MSC) Fisheries Certification Requirements
FOB	Floating object
FSC	Free swimming school
HCRs	Harvest Control Rules. Decision rules that aim to achieve the target reference point and avoid the limit reference point by specifying pre-agreed management actions when $B_{THRESHOLD}$, F_{TARGET} or B_{LIM} are breached
PCDR	(MSC) Public Comment Draft Report
PR	Peer Reviewer
PRI	Point of Recruitment Impairment
PRDR	(MSC) Peer Review Draft Report
MCS	Monitoring, Control and Surveillance
MPA	Marine Protected Area
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
PRI	Point where Recruitment would be Impaired
Rec	(ICCAT) Recommendation
UoA	Unit of Assessment
UoC	Unit of Certification
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System

Institutions, organization, bodies, agreements and programmes:

AGAC	(Spanish) Association of Large Tuna Freezers
ANABAC	National (Spanish) Association of Ship owners of Freezer Tuna Vessels
AOTTP	Atlantic Ocean Tropical Tuna Tagging Programme
BV	Bureau Veritas
COC	ICCAT Conservation & Management Measures Compliance Committee
EPBR	ICCAT Enhanced Program for Billfish Research
FAO	Food and Agriculture Organization of the United Nations
ICCAT	International Commission for the Conservation of Atlantic Tunas
ISSF	International Seafood Sustainability Foundation
MSC	Marine Stewardship Council
OPAGAC	Organisation of (Spanish) producers of frozen tuna
PSMA	The (FAO) Port State Measures Agreement
PWG	Permanent Working Group for the improvement of ICCAT Statistics and Conservation Measures
RFMOs	Regional Fisheries Management Organizations (e.g. ICCAT)
SY I	f/v Sant Yago I
SY III	f/v Sant Yago III

SCRS	ICCAT Standing Committee on Research & Statistics
SICA	Central American Integration System
SIRPAC	Integrated Central American Fish and Aquaculture Register System
SMTYP	ICCAT Small Tunas Year Program
SRDCP	ICCAT Shark Research and Data Collection Programme
STACFAD	ICCAT Standing Committee on Finance & Administration
SWGSM	ICCAT Standing Working Group to enhance dialogue between fisheries scientists and managers
UNCLOS	United Nations Convention on the Law of the Sea
UNFSA	United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks
TWG	Joint (RFMOs) Management Strategy Evaluation (MSE) Technical Working Group
WWF	World Wildlife Fund

1 Executive Summary

The client group includes Sant Yago Tuna Fisheries, N.V. and associated companies and vessels (see **section 3.2.1**). Henceforth, the term client will be used to refer to them.

This Public Comment Draft Report (PCDR) provides details to the client, peer reviewers and stakeholders on the assessment of the Sant Yago TF unassociated purse seine Atlantic yellowfin tuna fishery against the MSC Principles and Criteria for Sustainable fishing v2.0. The assessment team has addressed the peer reviewer's comments and modified the PRDR accordingly in order to elaborate the current Public Comment Draft Report, which will be published at the MSC website for a 30-day public consultation period.

This report was prepared by Bureau Veritas Iberia. The assessment team for this fishery was comprised of Carola Kirchner who was responsible for assessing Principle 1, Joseph DeAlteris who was responsible for assessing Principle 2 and José Ríos who acted as team leader and Principle 3 assessor and also collaborated with Joseph DeAlteris on assessing the primary and secondary species components of P2.

The fishery started the MSC certification process in September 2017, following the publication of the official announcement and the timeline at the MSC website. Previously, the client had performed a pre-assessment, also conducted by BV and handed to the client in May 2017. Initially, at the client's request, this pre-assessment considered skipjack as the species to be assessed against P1. However, results discouraged a full P1 assessment of the East Atlantic skipjack stock, while it was decided to promote the assessment of the Atlantic yellowfin stock from P2 to P1.

Between January 7 and 10 the assessment team visited different locations in Spain in order to meet with managers, scientists and fishers' representatives to discuss and gather information on the assessed fishery. After the site visit, the team compiled and analysed the information collected and, when necessary, additional information was requested to the stakeholders. Each expert prepared their respective draft scores and rationales, and then all the team discussed and weighed up the evidences for assigning the final scores. Detailed scoring rationales are provided in **Appendix 1**.

The gap between the date of the announcement (September 2017) and the site visit (January 2018), together with the time necessary to gathered and analyse different sets of data (in particular those from the observers on board) motivated a delay in the assessment process. In accordance with the FCR 7.3.4, a new 30-day consultation period was opened for the stakeholders on the 12th of June 2018.

A shortlist of potential peer reviewers compiled by the MSC's Peer Reviewers College was published at the MSC website on the 24th of July 2018.

The **main strengths of the client's operations** are listed below:

- There is a multiannual ICCAT program for the conservation and management of tropical tunas (Rec 16-01) detailing a set of management measures, including the mandate to the SCRS to develop precautionary biological reference points and HCRs for these species (yellowfin, skipjack and bigeye).
- The Atlantic yellowfin tuna is not overfished or overfished (overfishing is not taking place)
- The Atlantic yellowfin tuna has shown a good recovery and it is expected to be around the biomass at MSY level in the next few years.
- The SCRS performs regular stock assessments of the Atlantic yellowfin tuna. Available information on the stock is sufficient to apply (generic?) stock assessment models.
- Jealsa-Rianxeira Group is a participating company in ISSF since 2010 and therefore it is committed to conform the comprehensive ISSF Conservation Measures. This commitment is being audited by a third independent party (MRAG).
- The assessed vessels are listed on the ISSF ProActive Vessel Register and they are implementing all the PVR measures (also audited by MRAG).
- Since 2012, the assessed fleet has signed the OPAGAC/ ANABAC Code of Good Practices ensuring that all fishing trips have scientific observers on board. The implementation of this

Code of conduct is being annually verified by AZTI and includes other relevant measures such as detailed guidelines and training on turtles and sharks release manoeuvres.

- In 2017 the assessed fleet was certified in conformity with the Spanish Standard on Tuna from Responsible fishing, UNE190056:2016.
- The observer program on board the assessed vessels provides detailed information on fishing operations and catch composition, including fate of those catches (retained, released alive, discarded dead).
- Sets on free swimming tuna school (FSC or unassociated sets) is a highly selective fishery since discards (both release alive and discarded dead) account for less than 1.5% of total catches and, in turn, the three tropical tuna species (yellowfin, skipjack and bigeye tuna) account for more than 99% of the landings.
- The client has implemented a traceability system on board to segregate catches from FSC sets and FOB sets (sets on floating objects). The two assessed vessels will be audited against the MSC CoC on board before the publication of the PCR.
- FSC sets show a low rate of interactions with protected sharks, sea turtles and whales, and a good part of them (or 100% in the case of whales and turtles) are released alive.
- The UoC fishery has negligible habitat impacts, as the purse seine is fished in deep pelagic water and does not touch the sea bed.
- The UoC fishery has minimal ecosystem impacts because the catches of the apex predators (P1 target species, P2 primary, secondary and ETP species) are relatively small, and do not upset the ecosystem balance or trophic relationships, Additionally, because the UoC does not include FOB or associated sets (FADS), there are not issues related to FAD impacts on habitat or ecosystems.
- All the countries involved in the assessed fishery (flag country of the assessed vessels, countries in whose EEZ the UoA operates, countries where the UoA offloads) are ICCAT CPCs and have signed UNCLOS.
- Guatemala complies with the ICCAT requirements for provision of Task I (catches) and Task II (catch-effort and catch at size) of tropical tunas and participates at intersessional sessions of Panel I and IV and at the annual meeting of the Commission.

On the other hand, the **main weaknesses of the client's operations** are detailed herein:

- In 2016 there was an overage, close to 130 000t instead of the TAC of 110 000t.
- The TAC is not allocated to the parties in terms of quota, therefore it is difficult to control.
- Management strategy evaluations have not been attempted for yellowfin tuna and it is not in the client's control to initiate these, as these are done by ICCAT.
- 22 large whales were reported captured in FSC sets between 2014 and 2018 according to data collected by observers on board the UoC. This is in accordance with current ICCAT procedures, however these catches are avoidable and can be eliminated by not intentionally setting on whales.
- The observer data includes the taking of a whale shark in the FSC fishery, and based on ICCAT protocols that set should have been classified as a FOB set, this error call into question the training of observers, and reporting of observer data. As observer data is so important to the monitoring and management of this fishery, this single error is identified as a weakness in the fishery.... Neither Guatemala nor some of the countries where the evaluated fleet operates have signed or ratified the UNFSA.
- Côte d'Ivoire, which is the main country where the assessed fleet disembarks, has not signed the PSMA that has recently entered into force.
- At the moment of preparing this report it is still not clear which institution will responsible for reporting the observer data to ICCAT. It is recommended that functions, roles and responsibilities are explicitly defined and well understood regarding this topic.

Both the assessment team and Bureau Veritas agree that the Sant Yago TF unassociated purse Atlantic yellowfin tuna fishery COMPLIES with MSC Principles and Criteria. Thus, **Bureau Veritas recommends the fishery SHOULD be awarded an MSC Fishery certificate.**

The CAB has set the **5 binding conditions for certification** (see **section 6.3** and **Appendix 1.2**) and **1 non-binding management recommendations** (see **Section 6.4**).

2 Authorship and Peer Reviewers

Carola Kirchner (P1). Dr Kirchner has been working in the field of fisheries for the last 24 years. Her highest qualification is a PhD. Her PhD focussed on the population dynamics and stock assessment of a linefish species. She also completed her MBA part-time through the University of Cape Town. Her research thesis focused on the Namibian hake fishery, where she not only indicated areas of resource rent loss, but also presented a new method of providing bio-economic advice to the fishing industry and management. Included in the thesis was an evaluation of Namibia's post-independence fisheries policies. Dr Kirchner worked for the Ministry of Fisheries in Namibia for 18 years, where she was responsible for the stock assessment and management advice for most commercial species (e.g. Hake, Horse mackerel and Sardine). These fisheries differ vastly, from long-lived species (Orange roughy) to the short-lived Sardine. Also, different gear types were used between these fisheries; bottom trawl, purse-seine and handline. Dr Kirchner has over the years built up international relationships, for example she was involved in the stock assessment and management of southern Atlantic Albacore tuna through ICCAT. Further, she worked for two years in the stock assessment and modelling section of the Secretariat of the Pacific Community (SPC). There, her main role was to support the Parties of the Nauru agreement (PNA) members to maintain the compliance to the MSC certification, by evaluating reference points and harvest control rules. In addition, she was working on a regional bio-economic model that aims to evaluate and optimize the various fishing activities and includes all four major tuna resources in the Pacific as in Skipjack, Yellowfin, Bigeye and Albacore tuna.

Her 18 years at the Ministry of Fisheries and Marine Resources of Namibia and her work at the Secretariat of the Pacific Community ensure that she meets the qualification and competency criteria established in PC3 on (i) fish stock assessment, (ii) fish stock biology and (iii) fishing impacts on aquatic ecosystem. Furthermore, her experience in Namibian fisheries administration supports the qualification and competency criteria established in PC3 for (iv) fishery management and operations.

Joe DeAlteris (P2). Dr. DeAlteris retired from the University of Rhode Island (URI) in May of 2012, and was awarded Professor Emeritus status. In 30 years of service to URI he is taught course work, conducted research, and developed outreach programs in fisheries conservation engineering, fish population dynamics and quantitative ecology, and shellfish aquaculture. He mentored more than 40 graduate students completing MS and PhD degrees. He served on numerous government committees including the National Research Council. He authored more than 35 publications in peer-reviewed journals, and also authored and co-authored numerous books, manuals, non-referred articles, and technical reports in the fields of fisheries biology, stock assessment and fishing gear technology. Dr. DeAlteris has an international reputation as an expert in the field of stock assessment, fishing gear technology and the impacts of fishing on ecosystems. He brings intimate knowledge of finfish and invertebrate fisheries and has considerable experience in MSC fishery evaluations. He has worked for several certifying bodies (CBs). Dr. DeAlteris has worked the full assessment of the Louisiana blue crab and Atlantic red crab fisheries, the Echebatar Indian Ocean tuna fishery, the re-assessment of British Columbia halibut fishery, and annual audits of Dungeness crab, red crab blue crab, Canadian haddock, Full Bay sea scallop and the shrimp fisheries. He has also conducted numerous MSC pre-assessments, and assessment peer reviews. He is currently an independent expert on fisheries for the Global Seafood Sustainability Initiative (GSSI).

José Rios (Team Leader, P2 and P3), holds a degree in Sea Sciences from the University of Vigo and an MSc in Fisheries and Aquaculture from the University of Wales-Bangor. He has more than 15 years of experience working in fisheries from different angles and places around the world. In 1999 he worked at the ICM-CSIC on trophic ecology of demersal fish species and participated in different research cruises on board the r/v Garcia del Cid. In 2001/02 he was hired by the University of Azores as observer and fisheries inspector assessing an experimental fishing license for Orange roughy.

Between 2003 and 2010 he was responsible for designing and monitoring fisheries management plans for several marine resources (clams, cockles and barnacles) for the Regional Fisheries Authority of Galicia (Spain). In 2008-09 he developed and implemented a scientific monitoring scheme for an experimental octopus fishery in the waters of Namibia (IIM-CSIC). Between 2008 and 2012, as part of different projects funded by the Spanish International Cooperation Agency (AECID), he supported local fisheries and aquaculture management bodies to strengthen organizational and managing capacities of the fishing and rural aquaculture sector in Namibia, Cape Verde, Colombia and Mozambique. Since 2013, as part of the fisheries team of WWF Spain, he promoted different initiatives to improve fisheries management in coastal Spanish fisheries. As the WWF representative in fisheries co-management committees, he took part in the daily management of the following coastal fisheries in the Spanish Mediterranean: Catalan sandeel, Balearic boat seines, and Palamós red shrimp. Since April 2016 he is a full-time employee at Bureau Veritas Fisheries Department and he has participated in the following MSC fisheries assessments and audits: LFPO pelagic trawl Baltic sprat fishery, NKF Bothnian Bay vendace trawl fishery, Deris, S.A. –Pesca Chile- Antarctic krill fishery, Agarba Spain Barents Sea cod trawl fishery, Cantabrian Sea purse seine anchovy fishery, North Atlantic albacore artisanal fishery, Western Asturias octopus traps fishery of artisanal cofradías, and the Chilean mussel fishery and suspended culture Toralla S.A. and Cultivos Toralla, S.A. He has also conducted 2 MSC pre-assessments.

His 7 years in charge of designing and monitoring fisheries management plans for the exploitation different marine resources in Galicia, together with his experience on trophic ecology of demersal fish species in the Mediterranean (ICM-CSIC), his work with the University of Azores assessing an experimental fishing license for Orange roughy in the Azores islands, and his experience designing and monitoring an experimental fishing license for octopus in Namibia (IIM-CSIC) ensure he meets qualification and competency criteria established in PC3 for (i) Fishing impacts on aquatic ecosystems. Also, his 3 years of experience as a practicing fishery manager as a WWF representative in 3 Mediterranean fisheries, together with his 7 years of experience participating in the implementation of fisheries management plans in Galicia and his experiences assessing experimental fishing licenses in the Azores and Namibia ensure he meets qualification and competency criteria established in PC3 for (ii) Fishery management and operations.

The MSC's Peer Review College compiled a shortlist of potential peer reviewers to undertake the peer review for Sant Yago TF Unassociated purse seine Atlantic yellowfin tuna fishery ([click here](#) for the list).

3 Description of the Fishery

3.1. Unit of Assessment (UoA) and Scope of Certification Sought

3.1.1 UoA and Proposed Unit of Certification (UoC)

Fishery within the scope of the MSC fisheries certification

Bureau Veritas Certification confirms that this fishery is within the scope of the MSC fisheries certification sought as:

- It is a non-enhanced wild-capture fishery
- The fishery is not based on any introduced species
- It does not target species classified as 'out-of-scope' (amphibians, reptiles, birds, mammals)
- The fishery does not make use of any kind of destructive practices
- The tuna fisheries in the Atlantic are regulated by the International Commission for the Conservation of Atlantic Tunas (ICCAT), of which Guatemala has been a Contracting Party since 12/11/2004. The evaluated fishery takes place both in international waters and in the EEZs of different West African coastal countries (all of them ICCAT Contracting Parties) with whom the company signs fishing agreements (through OPAGAC / AGAC) to obtain the corresponding fishing license. Therefore, the fishery is not conducted under any

controversial unilateral exemption to an international agreement and its management regime includes mechanisms for resolving disputes

- Guatemala has been a member of the International Labour Organization (ILO) since 1945. The country has ratified 74 Conventions, of which 68 are in force, including the 8 core Conventions and the 4 governance Conventions. The CAB is not aware that none of the fishing operators included in the UoA have been prosecuted for forced labour in the last 2 years.

Besides, Bureau Veritas has checked that:

- At the time of announcing the fishery was entering the MSC assessment process, there was no other certified fishery with the Atlantic yellowfin tuna assessed under P1. However, in March 2018 the US North Atlantic swordfish fishery announced an expedited assessment to extend its scope and include the Atlantic yellowfin within the P1. Therefore, in accordance with Annex PB3.1 and PB3.2, BV and MRAG-America engaged in a harmonisation process (details provided in **Section 4.1.1**).
- Further, there are other MSC-certified (or under assessment) fisheries managed by ICCAT (see **Table 4-1**). Therefore, in accordance with PB3.3 it will be necessary to ensure consistency of outcomes in certain P3 PIs
- There are no catches of non-target species that are inseparable or practically inseparable (IPI) from target stock
- In 2017 Bureau Veritas Iberia performed a pre-assessment of the fishery. In accordance with FCR 7.8.8 Bureau Veritas will give MSC a copy of the pre-assessment report (in Spanish). There are no other pre-assessment reports written by other parties.
- The fishery has not previously failed an assessment and has no certificate withdrawn

Unit of Assessment (UoA)

According to the UoA definition given by MSC in its MSC-MSCI Vocabulary and the information collected during and after the site visit, BV concludes that the UoA presented in **Table 3-1** meets the MSC fisheries requirements while also suits client’s needs.

Table 3-1. Unit of Assessment defined for the Sant Yago TF unassociated purse Atlantic yellowfin tuna fishery

Target stock	Atlantic yellowfin tuna (<i>Thunnus albacares</i>)
Fishing Area	FAO fishing areas 34 and 47
Fishing method	Purse seine targeting free swimming tuna schools ¹ (FSC)
Fishing operators	f/v Sant Yago I and f/v Sant Yago III
Other eligible fishers	There are no other eligible fishers

Fishing method

The two fishing vessels included in the UoC are purse seiners alternating two different types of fishing operations: (i) sets on free swimming tuna schools (**hereafter FSC sets**); and (ii) sets on floating objects (**hereafter FOB sets**). See **Section 3.2.3** for more details on these two fishing operations performed by the assessed vessels.

According to the criteria established by the client only FSC sets are included in the UoC, while FOB sets are excluded from the assessment (see **section 3.2.4** for a detailed definition of FSC/FOB and the scope of the certification regarding fishing operations). Detailed data on the UoC catch and bycatch composition for each of the fishing types have been recorded by observers since 2014.

It is important to stress out that during the assessment of this fishery, a consultation on the UoA definition was launched by the MSC. The topic of discussion was concerned allowing vessels to fish on certified and uncertified units of assessment within the same trip. The results of the public consultation were published in March 2018.

¹ All fishing operations in association floating objects (as defined in **section 3.2.4**) shall be excluded from the assessment

Even though the consultation has finalized, and the FCR V 2.1 was published on the 31st of August 2018, the Board has instructed the MSC to investigate alternative options over the next six months and produce a new solution which will be presented for formal consultation

Therefore, at this stage the UoA definition of the fishery under assessment is aligned with the current version of the FCR.

Other eligible fishers

The Atlantic yellowfin tuna is considered to be a single stock for the whole Atlantic. In accordance with Rec 16-01 ICCAT keeps an updated list of authorised vessels to target tropical tunas within the ICCAT Convention area. Currently (2018), there is a total of 1,080 authorised vessels from 25 different nationalities (<https://www.iccat.int/en/VesselsRecord.asp>). Thus, many purse seiners from different countries are targeting the same stock under ICCAT regulations, although the only vessels flying the flag of Guatemala are those included in the UoC. However, up to date there is no other MSC-certified (or in assessment) purse seine fishery targeting tropical tunas in the Atlantic.

Other eligible fishers exist in cases where a client enters into assessment with the aim of initially certifying only part of a fishery, but also wishes to have the possibility of expanding the UoC at a later date by the mechanism of certificate sharing (see FCR G7.4.7-G7.4.9). According to FCR 7.4.12 the CAB shall identify if there are other eligible fishers or other entities that may share the certificate as new client group members. However, the client's intention to share the certificate with other companies outside the client group is a pre-requisite for the existence of 'other eligible fishers' according to the MSC FCR. In this case, Sant Yago TF expressed that they are not interested in that possibility, therefore there are no other eligible fishers.

Proposed Unit of Certification

The unit of assessment (UoA) defines the full scope of what is being assessed and is therefore equal to or larger than the UoC. If it is larger this means it will include "other eligible fishers". As in this case there are no other eligible fishers (see above), the proposed UoC is equal to the UoA defined in **Table 3-1**.

3.1.2 Total Allowable Catch (TAC) and Catch Data:

The annual TAC for 2012 and subsequent years of the Multi-annual Programme is 110,000 t for yellowfin tuna and shall remain in place until changed based on scientific advice (Rec 16-01). No further quota allocation is done by ICCAT.

In ICCAT tuna purse seine fisheries the skipper shall record at the logbook an estimation of the catches per species for every set. Later, in the case of transshipment to container or reefer, weight per species will be estimated using a scale attached to the crane used during the offloading operations. Final estimations will be recorded in a transshipment declaration. Again, the product is more accurately weighted per species and size classes at the entrance of the processing plants and records are kept (and in the case of participating companies in ISSF this information is sent to ICCAT, for more details see **section 13.1.3.2.5**). Finally, once the product has been processed (canned or fresh) the processing plant will have the final figures of processed and wet weight per species, since during processing some adjustments can be done in terms of species allocation, in particular between small yellowfin tuna and bigeye tuna (which are difficult to segregate).

In the case of the UoC almost all catches are sold to Jealsa-Rianxeira, group and processed at the processing two plants owned by this group in Galicia, Spain. The most recent annual catches of unassociated yellowfin tuna from the two assessed vessels are presented in **Table 3-2**. Catches are provided according to estimates at the logbooks and also according to final weights obtained at the processing plants owned by Jealsa-Rianxeira Group. However, catches reported from Guatemala to ICCAT are confirmed after reviewing the different sources of information available to DIPESCA (logbooks, landing declarations, annual report prepared by the Jealsa-Rianxeira group on the final figures of processed and wet weight per species caught by the assessed vessels). Therefore, some

differences can be found between data shown here and data found in ICCAT reports as being reported by Guatemala (for more details see **section 1.13.5.5**). Further, since Jealsa-Rianxeira Group is member of the ISSF, the ICCAT Secretariat also has access to the weighs per species purchased by the Company so they could compare them against catches sent by Guatemala (no other vessels flying the flag from Guatemala are targeting tropical tunas within the ICCAT region).

For more data on catches of the UoA/UoC (historical data series and species catch composition) see **Table 3-6**.

Table 3-2. TAC for Yellowfin tuna as established by ICCAT Rec 16-01 and most recent UoA/UoC annual catch data (data provided by the client). Catch data are provided from logbooks estimations and also from final landing data (weighted at the entrance of the processing plant). Only catches from FSC sets were included.
Source: the client

	Year	Tons
TAC	2017	110,000
UoA/UoC TAC share	2017	N/A
Total estimated UoA/UoC YFT catches	2017	2,343
	2016	853
Total UoA/UoC YFT landings	2017	2,376.7
	2016	863.5

3.2. Overview of the assessed fishery

3.2.1 Ownership, history and organisational structure of the assessed fleet

The Jealsa-Rianxeira Group integrates more than 20 companies spread over four continents that provide different services in relation to fishing and canning, Sant Yago Tuna Fisheries, N.V. is one of those companies. In turn, Sant Yago Tuna Fisheries, N.V. is a trading company of fishery products based in Curaçao owning two shipping companies based in Guatemala: Atunera Sant Yago, S.A and Atunera Nacional, S.A.

The fleet of Sant YagoTuna Fisheries, N.V. is constituted by the 2 purse seiners (see **Figure 3-1**), details of which are presented in **Table 3-3**.

Table 3-3. Technical characteristics of the vessels included in the UoA

Vessel name	Shipping company	IMO	Flag	Hold capacity (t)
Sant Yago I	Atunera Sant Yago, S.A.	8919439	Guatemala	1,200
Sant Yago III	Atunera Nacional, S.A.	8919427	Guatemala	1,200



Figure 3-1. Left: Sant Yago III (picture: Alf-Vigo 2014²); Right: Sant Yago I (picture: Fernando Montes³)

The twin fishing vessels Sant Yago I and II were built in 1991 and started fishing in the Indian and the Pacific Oceans. However, in 2004 they were moved to the East Central and South-East Atlantic (FAO

² <http://alf-alfysumundonaval.blogspot.com.es/2014/03/sant-yago-tres.html>

³ <http://www.shipspotting.com/gallery/photo.php?lid=469836>

34 and 47), where they have been operating exclusively since then. The f/v Sant Yago II sunk in 2008, and the Sant Yago III incorporated to the fishery in April 2014 to replace it.

Initially the Jealsa-Rianxeira Group managed the twin vessels through an agreement with the shipping company Nicra 7, S.L.. This agreement came to an end in 2007 when the shipping company Atunera Sant Yago, S.A. was created. In 2013 the shipping company Tuna National, S.A. was created to manage the new Sant Yago III.

Jealsa-Rianxeira is a member of the Association of tuna freezer vessels ship owners (AGAC) and the subsequent Frozen Tuna Producers Organization (OPAGAC). AGAC was established in 1980 with the objective of representing the interests of Spanish companies dedicated to the tropical tuna fishery. Currently OPAGAC / AGAC integrates 8 groups of Spanish ship owners.

3.2.2 Assessed area: jurisdiction and user's rights

These vessels are targeting tropical tunas (yellowfin, bigeye and skipjack) in the East-Central and South-East Atlantic (FAO areas 34 and 47, see **Figure 3-2**). Thus, the fishery is developed under the jurisdiction of the International Commission for the Conservation of Atlantic Tunas (ICCAT), of which Guatemala (flag flown by the assessed vessels) is a Contracting Party since 12/11/2004.

The fishing area covers both international waters and the EEZs of the following West African coastal countries: Mauritania, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Cote d'Ivoire, Gabon, Sao Tome and Principe, Angola and Equatorial Guinea. OPAGAC / AGAC signs private agreements with the governments of these countries that guarantee access and establish fishing conditions for non-EU vessels (as in the case of the evaluated fleet). The licenses obtained are validated by the Guatemalan Government and notified to ICCAT.

For more details on the regulatory framework of the fishery consult the **Section 3.5**.

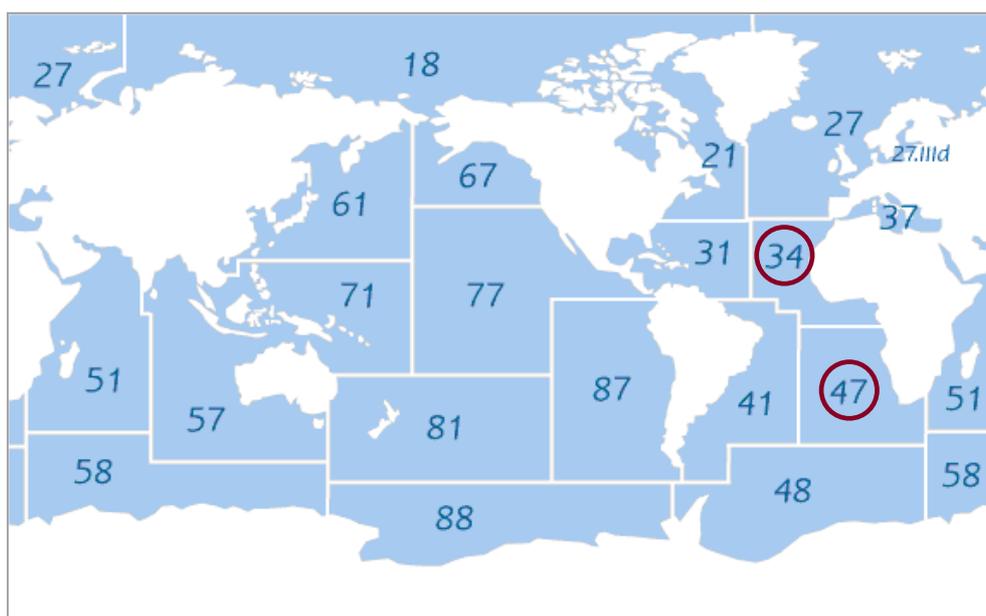


Figure 3-2. FAO fishing areas. The assessed vessels operate in areas 34 and 47 (circled in red)

3.2.3 Fishing operations and catches

The two vessels included in the UoC are based in the port of Abidjan (Ivory Coast). Abidjan is also the port where most of the landings occur, since this is normally the nearest port at the end of the fishing trip. However, landings at the port of Dakar (Senegal) can also be frequent when fishing moves further north (Mauritania). Further, the ports of Pobra do Caramiñal and Riveira in Galicia (Spain) can also be used for landing when the vessels move there to for their regular safety inspections and/or for maintenance works (this happens at least once time every 4 years).

In addition, Sant Yago Tuna Fisheries, N.V. also has a support vessel (called ‘Irene’) to provide various services, mainly related to fish aggregating devices (FADs) maintenance as well as to ensure the provision of supplies.

Since the fleet includes long distance freezer vessels that carry out prolonged fishing trips (of about 45-day duration), Sant Yago Tuna Fisheries, N.V. has consignees in both Abidjan and Dakar to help managing the vessels, the crew and landing and exporting operations.

Table below shows total catches (as estimated at the logbooks) from the two assessed fishing vessels included between 2011 and 2016 (including both landings from FSC and FOB sets). The 3 tropical tunas (skipjack, yellowfin, and bigeye) account for almost 100% of the total volume caught (99.77%). The skipjack tuna accounts for over half of the volume caught (57.57%), followed by the yellowfin tuna (36.40%) and the bigeye tuna (5.79%). Other species reported at the logbooks are the albacore and the frigate tuna, but between these two species they account for 0.21% of the total volume caught.

Table 3-4. Total estimated catches (in tons) of the Sant Yago I and Sant Yago III vessels between 2011 and 2016. Data including FSC and FOB sets. Source: Prepared by the client based on the logbooks from the two assessed vessels

Common name	Scientific name	2012*	2013*	2014**	2015	2016	2017	%
Yellowfin tuna	<i>Thunnus Albacares</i>	2,912.75	4,402.82	2,915,325	4,733.00	3,688.00	4,632.00	36.40%
Skipjack tuna	<i>Katsuwonus Pelamis</i>	4,497.54	4,275.75	5,919,202	7,422.00	7,020.00	7,692.00	57.57%
Bigeye tuna	<i>Thunnus Obesus</i>	369.37	140.00	600,618	473.00	571.00	1,552.00	5.79%
Albacore	<i>Thunnus Alalunga</i>	-	6.00	-	1.00	-	4.00	0.02%
Frigate tuna	<i>Auxis thazard thazard</i>	-	-	-	-	136.00	-	
TOTAL		7,779.66	8,824.58	9,435.15	12,629.00	11,415.00	13,880.00	

(*) Data between 2011 and 2013 correspond exclusively to f/v Sant Yago I; (**) f/v Sant Yago III started operating in 06/04/2014

At the beginning of this modern fishery, purse seiners targeting tropical tunas performed sets on free swimming tuna schools and also sets on schools associated with drifting floating objects (e.g. logs) or large and slow animals such as whale sharks, since no fish aggregating devices (known as FADs) were used at that time. The yellowfin tuna was then the dominating species in the catches. In the 1990s, the use of drifting or anchored FADs to catch tunas was introduced in industrial tuna fisheries. Since then, the use of FADs has spread in the Atlantic, Indian and Pacific to the point of now most of the catches of yellowfin, bigeye and mainly skipjack come from sets performed on FADs.

Since ICCAT Rec [11-01] for a multi-year conservation and management program for bigeye and yellowfin, it is mandatory to record at the logbook whether the set was done on FSC or FOB (and also to characterize the type of floating object, see **section 3.2.4**), later revisions of this program have been adding more requirements regarding the information to be provided in relation to the FOB sets.

At the assessed vessels this information is recorded at the logbook (by the skipper) and also by the observers (observer coverage accounts up to 100% of the fishing trips performed by the assessed vessels since 2012). **Table 3-5** shows that 76.7% of the total sets performed by the assessed vessels (1,889 sets) between March 2014 and April 2018 were FOB sets, while the remaining 23.3% were FSC. This is also consistent with the contribution of each type of fishing operation to total volume landed by the UoC. **Table 3-6** presents catch species composition of the assessed vessels for each type of fishing operation during the period 2016-2017. It can be observed that 77.4% of the total volume caught (19,460t) corresponded to FOB sets, whereas FCS sets accounted for the remaining

22.6% of the volume. Average annual production (understood as total landings of the three tropical tunas –YFT, SKJ, and BET-) for the UoC during the studied period was found to be 2,847t.

Table 3-5. Details of the type of positive sets performed by the UoC between March 2014 and April 2018. Null sets (those with no catches) are not presented here, only positive sets. Source: observer data from the IEO and Sea Eye.

	Fishing trips	FSC sets (N)	FOB sets (N)	Total sets (N)	FSC sets %	FOB sets %
TOTAL	81	441	1,448	1,889	23.3	76.7

Species composition of the catches varies significantly depending on the type of fishing operation, although in both cases the 3 tropical tunas comprised for almost 100% of the volume caught. **Table 3-6**, elaborated out of data from the fishing logbooks of the assessed vessels, shows that yellowfin tuna comprises up to 56.12% of the FCS sets catches, followed by skipjack tuna which comprises almost 37% and bigeye tuna (<7.18%). However, this ratio is inverted in the case of FOB sets, with skipjack tuna accounting for 64.86% of the volume followed by yellowfin tuna (almost 26.33%) and bigeye tuna (8.81%).

Figure 3-3 shows that most of the catches of skipjack (85.79%), bigeye (80.73%) and also yellowfin (61.59%) tunas correspond to FOB sets. However, the ratio is more balance in the case of yellowfin tuna, since still a significant percentage of the catches corresponds to FSC sets (38.41%).

Table 3-6. Estimated catches (as recorded at the logbooks) and average annual production (YFT+SKJ+BET landed) for the two assessed vessels in 2016 and 2017, segregated by type of set (FSC Vs FOB). Source: SYI and SYIII Logbooks

Common name	Scientific name	FSC catches (t)	FOB catches (t)	% Spp FSC	% Spp FOB
Yellowfin tuna	<i>Thunnus Albacares</i>	3,196.00	5,124.00	56.12%	26.33%
Skipjack tuna	<i>Katsuwonus Pelamis</i>	2,090.00	12,622.00	36.70%	64.86%
Bigeye tuna	<i>Thunnus Obesus</i>	409.00	1,714.00	7.18%	8.81%
<i>Total</i>		<i>5,695.00</i>	<i>19,460.00</i>		
Average annual production (t)		2,847.50	9,730.00		

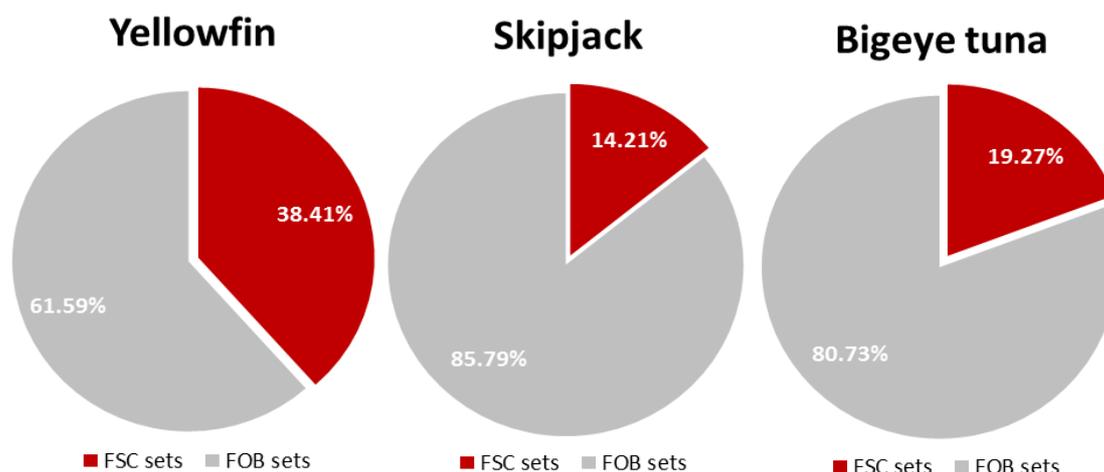


Figure 3-3. Percentage of the catches of each of the commercial species according to type of sets (FSC in red Vs FOB in grey). Source: SYI and SYIII Logbooks

3.2.4. Definition of FSC and scope of the certification regarding fishing operations

For the purposes of this assessment, and in accordance with the provisions established in Annex 3 of the ICCAT Rec [16-01], all types of floating or anchored objects affecting the behaviour of tuna schools will be considered as floating objects, including:

Table 3-7. Codes, names and examples of different types of floating object that should be collected in the ICCAT fishing logbook as a minimum data requirement. Source: ICCAT Rec [16-01]

Code	Description	Example
DFAD	Drifting FAD	Bamboo or metal raft
AFAD	Anchored FAD	Very large buoy
FALOG	Artificial log resulting from human activity (and related to fishing)	Nets, wreck, ropes
HALOG	Artificial log resulting from human activity (not related to fishing)	Washing machine, oil tank
ANLOG	Natural log of animal origin	Carcasses, whale shark
VNLOG	Natural log of plant origin	Branches, trunk, palm leaf

According to Rec [16-01] during fishing activities carried out in association with floating objects, multiple details of the operation must be recorded in a specific ‘FAD logbook’ provided in Annex 2 of that Recommendation. Also, CPCs with purse seine and bait boat vessels fishing for tropical tunas in association with floating objects, shall submit to the Executive Secretary annual Management Plans for the use of such devices by vessels flying their flag.

For the purpose of this assessment all sets performed on any kind of the different types floating objects described in **Table 3-7** will be considered as FOB sets, while sets performed on free swimming schools will be considered as unassociated sets or FSC sets.

Unlike for other RFMOs, ICCAT does not consider that sets resulting in the capture (and later release) of a large whale have to be considered as FOB sets. This results in the fact that most of the sets that result in the capture of a large whale are being classified as FSC sets by the observers on board (and also by the captains at the logbooks). This can be confirmed by checking the published summarized observer data collected on board the European purse seine tuna fleet operating in the Atlantic Ocean between 2003 and 2016, which are contained in the following three summary documents: Amandè et al 2010, Amandè et al., 2011, and Gondra et al 2017. The first paper (Amandè et al 2010 which summarising data between 2003 and 2007) specifically addresses FAD and FSC definitions: *“The acronym ‘FAD’ standing for fish aggregating device, will be used here to describe any type of floating object used for fishing tuna. These include natural objects (e.g. logs, palm branches) and anthropogenic floating objects, such as manmade bamboo rafts equipped with radio-range beacons, satellite transmitters or scanning sonars. All floating objects used in the European purse seine tuna fishery are drifting devices. Fishing sets made on whales were classified as free school sets (FSC), whereas sets made on whale sharks (Rhincodon typus) were classified as FAD sets”*. It appears that this definition of FAD and FSC has been followed through the data set, which is FAD sets include whale sharks and FSC include whale sets. In the 2003-2007 data set (Amandè et al 2010) only 3 whales were taken in 2 FSC sets of the 301 observed FSC sets, and 0 whales were taken in the 297 observed FAD sets. Amandè et al 2011 (2008-2009 data) does not address cetacean bycatch. Gondra et al 2017 (2010-2016 data) reports on cetacean bycatch, but the 2016 data indicated 96 whales in about 1250 observed FSC sets, and 5 whales in about 1400 observed FAD sets. Also, observers on board the assessed vessels between 2014 and 2018 have reported a total of 22 large whales in 441 FSC sets and 0 in 1,448 FOB sets. AZTI representatives interviewed during the site visit also confirmed that this criteria (FSC sets include whale sets) is consistent with: (i) setting of the Data Base used to record observer data; (ii) current instructions provided to observers and captains on how to record set types during trainings.

According to the criteria established by the client, only FSC sets will be assessed while FOB sets will be excluded from the assessment. Detailed data on species composition of the catches and interactions with ETP species is available through observer’s reports since 2014.

3.2.5. Other certifications and verification of good practices implemented

OPAGAC / ANABAC Code of Good Practices

Between Opagac and Anabac comprise all the Spanish producers of frozen tuna and ship owners of large tuna freezer vessels (including those fleets flying third-country flags, as it is the case of the assessed fleet). These two associations developed a common manual of good practices aimed at improving the practices on board the OPAGAC and ANABAC fleets operating all over the world. This manual was assumed as a code of conduct and signed by the fleet in 2012. Since then, the code was reviewed in 2015 and 2017 (current version). The agreement deals with the following topics:

- 1) The design and use of non-entangling FADs (fish aggregating devices) to minimize direct impacts on sensitive non-target species (mainly turtles and sharks).
- 2) The development, training and adoption of good practices on board to ensure the highest post-capture survival when releasing sensitive non-target species (turtles and sharks), including specific equipment.
- 3) The implementation of a FAD management system (including a FAD logbook⁴).
- 4) 100% observer coverage, including support vessels.
- 5) Training of skippers, crew and scientific observers.
- 6) Implementation of the good practices to be verified by a scientific body, and continuous monitoring through a Steering committee.

The scientific body responsible for verifying the implementation of the Code of Conduct is AZTI. In the case of the assessed fleet the assessment team had access to the code of good practices and also to the latest report and declaration of conformity prepared by AZTI for the two vessels. The declaration of conformity is valid for one year. AZTI declares that both vessels are in conformity with the Code of Conduct and the Standard UNE 1956006:2016 (see below) in relation to: (i) use of non-entangling FADs; (ii) implementation of good practices on board to release turtles and sharks; (iii) recording of the operations performed on board; (iv) Training for the crew.

In relation to the implementation of a FAD management system, AZTI prepares a monthly report for each vessel accounting for the number of active (FAD) buoys per vessel and day. This allows to monitor compliance with the limitation of FADs per vessel established in Rec 16-01 (*"No more than 500 FADs with or without instrumental buoys are active at any one time in relation to each of its vessels"*). The assessment team could check a total of 12 specific reports for the two assessed vessels (between December 2016 and November 2017). However, as detailed in the previous section this fishing operation (sets on FADs or FOB sets) is not included in the Unit of Assessment.

Finally, the client also handed the proceedings from the latest meeting of the steering committee in charge of verifying the implementation of the good practices. The meeting was held the 18 of January 2018 at the AZTI headquarters in Sukarrieta (Spain). The following topics were discussed during the meeting: (i) FAD management and monitoring; (ii) verification of good practices; (iii) Biofad project. Review of previous commitments and updates on applicable regulations from the different RFMOs were tackled for each of the topics. The team could also review a comprehensive PPT presentation prepared by AZTI on the progress achieved, new regulations to be taken into account and proposals for the future.

Spanish Standard on Tuna from Responsible fishing. Purse seine freezer vessels (UNE190056:2016)

AENOR (standing for Spanish Association for Standardization and Certification) is a private non-profit association, legally recognized in Spain as a national standardization body in accordance with the

⁴ When the Code of Conduct was first signed (2012) the FAD logbook still was not compulsory as it is now through Rec 16-01.

provisions of the Infrastructure Regulation for Quality and Industrial Safety (Royal Decree 2200/19951) and Regulation (EU) 1025/2012 on European Standardization.

In 2016 AENOR created a new standard on Tuna from Responsible Fishing for purse seine freezer vessels (UNE1956006:2016).

This type of Standards are called UNE Standard (Acronym for 'Una Norma Española', A Spanish Standard), and they are created in the Technical Standards Committees of AENOR. The technical standards issued by standardization bodies are, by definition, voluntary; although the competent administration can demand its fulfilment by means of a law, decree or regulation for a determined scope, as well as to use them in the specifications of technical prescriptions for public contracts. Private organizations can also refer to these documents in their purchase documents or contractual requirements. This condition of a voluntary document is clearly reflected in the Law 21/1992, of July 16, of Industry, 3 that defines norm and regulation of the following way: "*Standard: The technical specification of repetitive or continuous application whose observance is not mandatory, established with the participation of all interested parties, approved by a recognized body, nationally or internationally, for its normative activity*".

This particular standard (UNE1956006:2016) covers the following topics:

- 1) Control of the fishing activity
 - Satellite control (VMS)
 - Logbook
 - Control centre
 - Fishing Permit or Fishing Authorisation
 - Certificate of catches
- 2) Good practices on board for a responsible fishing
- 3) Labour and safety working conditions
- 4) Maritime and Sanitary Control
 - Basic documentation
 - IMO Number
 - Insurances
 - Sanitary Number
- 5) Records

The good practices to be assessed under topic (2) are based on the OPAGAC / ANABAC code of good practices described above (includes the same procedures for releasing turtles and sharks and requires). It is also required a 100% observer coverage and an internal control body to coordinate and review observers data to ensure that practices are being implemented. In fact, this verification is done annually by AZTI, as explained above.

ISSF Conservation Measures and Commitments and PVR register

Jealsa Rianxeira, S.A.U participate in the International Seafood Sustainability Foundation (ISSF) and is member of the International Seafood Sustainability Association (ISSA). ISSF was formed in 2009 as a global, non-profit partnership among the tuna industry, scientists and WWF; while the ISSA is a trade association whose members are tuna processors, traders and marketers that agree to follow the conservation measures implemented by the ISSF. All participating companies are committed to a suite of conservation measures aimed at improving the long-term health of global tuna fisheries. Compliance reports based on third-party annual audits of participating companies' conformance with these measure are published at the [ISSF website](#). The conservation measures which are being audited are listed below, although detailed information on these measures and on the audit process can be download at the ISSF website.

- 1) RFMO Support
 - 1.1. Tuna RFMO authorized vessel record
 - 1.2. RFMO Participation
- 2) Traceability and data collection

- 2.1. Product Traceability
- 2.2. Quarterly Data Submission to RFMO
- 2.3. Product labelling by Species and Area of Capture
- 2.4. Supply Chain Transparency, Audit, Reporting and Purchase Requirements
- 3) Bycatch mitigation
 - 3.1. Sharks
 - a. Shark finning policy
 - b. Prohibition of Transactions with shark-finning vessels
 - c. Prohibition of Transactions with Companies without a public policy prohibiting shark finning
 - 3.2. Large-Scale Pelagic Driftnets Prohibition
 - 3.3. Full Retention of Tunas
 - 3.4. Skipper Best Practices
 - 3.5. Transactions with vessels that use only non-entangling FADs
 - 3.6 Transactions with vessels implementing best practices for sharks and sea turtles
- 4) Monitoring, Control and Surveillance
 - 4.1. Unique vessel Identifiers-IMO
 - 4.2. Purse Seine Unique Vessel Identifiers
 - 4.3. Observer Coverage
 - 4.4. Transshipment
- 5) Illegal, Unreported and Unregulated Fishing
 - 5.1 IUU Fishing
 - 5.2. IUU Product Response
- 6) Capacity
 - 6.1. Transaction ban for large-scale purse-seine vessels not actively fishing for tuna as of Dec 31, 2012
 - 6.2. Requirements for inclusion in record of large-scale purse seine vessels fishing for tropical tunas
- 7) ProActive Vessel Register (PVR)
 - 7.1. Controlled Vessels – a. Purse Seine and Supply & Tender / b. Longline
 - 7.2. Threshold Requirements for PVR listing
 - 7.3 Supply and tender Vessels
 - 7.5. Purchases from PVR Vessels-Longline
- 8) Miscellaneous
 - 8.1 Exemption for very small purse seine vessels

These conservation measures are designed for its inclusion in the purchase policy of tuna processors and traders, such as the processing plant owned by Jealsa Rianxeira Group in Bodión (Galicia, Spain) where most of tuna from the assessed vessels is being processed. Some of these requirements allow to provide more accurate and detailed information to the RFMOs scientific bodies so they can improve their monitoring and assessment (see PI1.2.3 SI (a) considerations on ISSF conservation 2.2.). The latest MRAG report on the compliance with the ISSF conservation measures can be downloaded from both the ISSF website and from the [Jealsa website](https://jealsa.com/issf). This report is dated on the 12 of March 2018 for activities performed in 2017, showing a full compliance with all the above conservation measures. Since the assessed vessels are included in the Jealsa Rianxeira Group and at the same time are also providers of the Jealsa processing plant and other ISSF participating companies, many of the measures have been adopted by the ship owning company and implemented on board the vessels (e.g. 100% observer coverage, shark finning policy, full tuna retention policy, best practices, inclusion in the PVR list...).

Among the ISSF practices, in 2012 this organization created a ProActive Vessel Register (PVR) available on-line (<https://iss-foundation.org/knowledge-tools/databases/proactive-vessel-register/>). This PVR list is designed to provide third-party validated information on the positive steps fishing vessels take to improve responsible fishing practices. The PVR identifies which of more than 25 ISSF Commitments each vessel has adopted, including implementing strategies to increase supply chain

transparency, providing complete catch data to management bodies and continuing education in best practices that reduce fishing’s impact on the greater marine environment. Comprehensive information on the PVR list is available at the ISSF website, including the application process, the audit system (conducted by MRAG America), and several related documents.

The two assessed vessels are listed on the ISSF ProActive Vessel Register and they are implementing all the PVR measures.

3.3. Principle One: Target Species Background

3.3.1. Stock structure and mixing

Yellowfin tuna is a cosmopolitan species distributed mainly in the tropical and subtropical oceanic waters of the three oceans. The exploited sizes typically range from 30 cm to 170 cm FL. Juvenile yellowfin tuna form mixed schools with skipjack and juvenile bigeye, and are mainly limited to surface waters, while larger fish form schools in surface and sub-surface waters (ICCAT 2016a).

The tagging data are consistent with the currently assumed single pan-Atlantic stock structure. There are not enough data to develop hypotheses on the fraction of mixing between the different regions of the Atlantic. One of the goals of the AOTTP is to provide data on the mixing rates and stock structure of YFT. There is spawning of YFT in different areas in the Atlantic but the proportion of the SSB which contributes to each spawning area is unknown. Therefore, noting the need to make strong assumptions about tag reporting rate, the group decided not to model separate spatial areas.

There has been a significant decrease in the size composition since the 1990s, with large yellowfin largely disappearing from the catch. Purse seine catches of yellowfin have been moving northward in the Eastern Atlantic since the 1970s, which may be attributed to an environmental variable or a response to prey movement. Similar northward movements have been observed in other fisheries, such as billfish in the western Atlantic.

Tagging data indicated that there are substantial movements of fish between the western Atlantic (from the U.S./Canada coast and the Gulf of Mexico) towards the Gulf of Guinea, and these movements are likely related to size/age of fish. (ICCAT 2016a)

However, movement rates and timing, routes, and local residence times remain highly uncertain. In addition, some electronic tagging studies in the Atlantic as well as in other oceans suggest that there may be some degree of extended local residence times and/or site fidelity (ICCAT 2016b).

3.3.2. Catches:

In the Atlantic, yellowfin tuna have been exploited by three major gears (longline, bait boat and purse seine fisheries) and by many countries throughout its range. Detailed data are available since the 1950s. Overall Atlantic catches have declined by nearly half from the peak in 1990 (193,600 t) to 108,910 t estimated for 2015. The most recent catch is given in

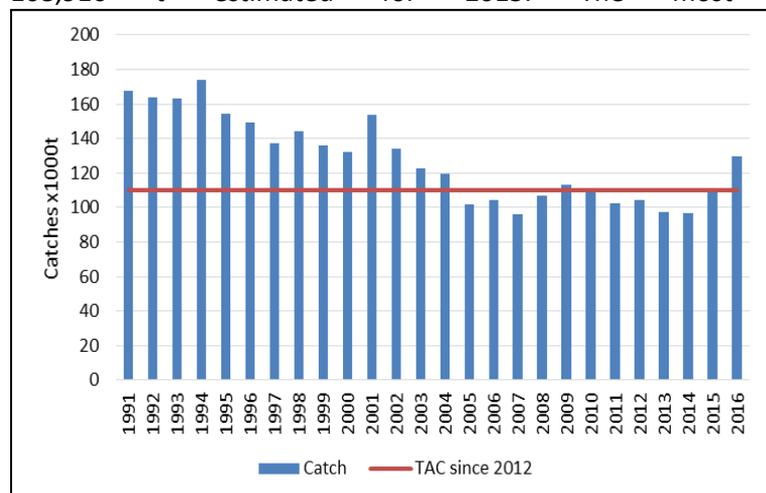


Figure 3-4. Since 2005, catches were either below or around 110,000 t. Rec.14-01 (ICCAT, 2014)

implemented a TAC of 110,000 t for 2012 and subsequent years. The overall catches in 2012 (104,500 t), 2013 (97,300 t) and 2014 (97,000 t) were lower than this TAC, but the 2015 estimate is near this level (108,910 t). Also, a catch close to a 130 000 t was recorded in 2016, which is an overage. Catch estimates for 2017 are not yet available (ICCAT, database). The distribution of these catches by major gear type, from 2010-2014, is shown in **Figure 3-5**.

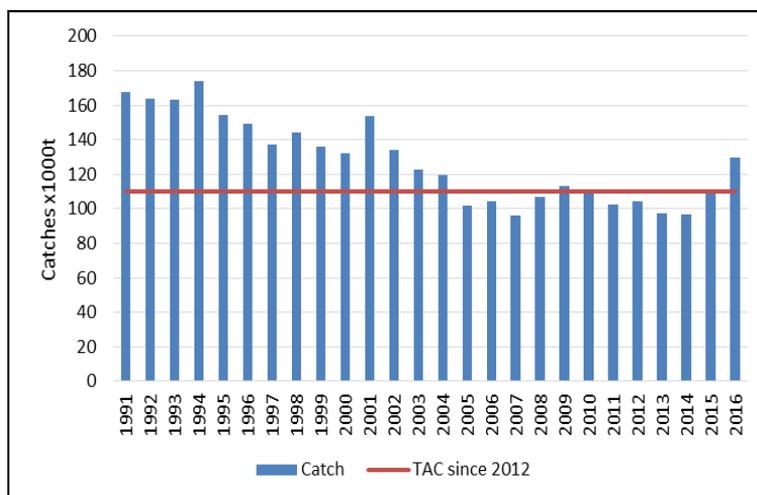


Figure 3-4: Catches of Yellowfin tuna taking in the Atlantic from 1991 to 2016. Source: ICCAT database

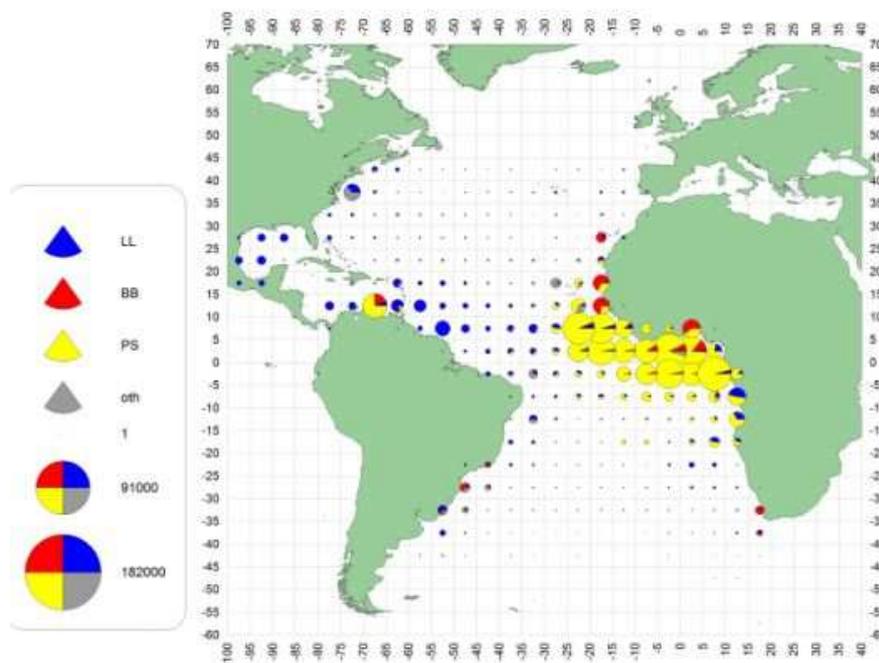


Figure 3-5: Catches by major gear type from 2010-2014, reproduced from (ICCAT, 2016a). LL (blue)-Longlines; BB (red)-Bait boats; PS (yellow)-Purse seines; oth (Grey) - Others. Source: ICCAT database

3.3.3. Biological background:

Spawning on the main fishing grounds, the equatorial zone of the Gulf of Guinea, occurs primarily from December to April. Spawning also takes place in the Gulf of Mexico, the south eastern Caribbean Sea and off Cabo Verde, although the peak spawning can occur in different months in these regions. The relative importance of the various spawning grounds is unknown (ICCAT 2016b).

A recent study in the eastern Atlantic Ocean further described the reproductive traits of female yellowfin tuna including, sex-ratio, size at maturity, spawning seasonality, fish condition and fecundity. Size at 50% maturity was estimated at 103.9 cm fork length when cortical alveoli were used as a maturity threshold, however a larger size at 50% maturity was estimated when more advanced oocytes were used. The conclusions of this research were incorporated in the 2016 stock assessment of yellowfin tuna (ICCAT, 2016b).

Tagging studies of yellowfin in the Pacific and Indian Oceans suggest that natural mortality is age-specific, and higher for juveniles than for adults. Nevertheless, uncertainties remain as to the exact parameterization of the age-specific natural mortality function. An age-specific natural mortality function (e.g. Lorenzen) was developed and applied to the 2016 assessment of yellowfin tuna (**Table 3-8**). The most recent stock assessment does not consider sex-specific natural mortality or growth, yet there are disparities in average size by gender. Males are predominant in the catches of larger sized fish (over 145 cm), which could result if large females experience a higher natural mortality rate, perhaps as a consequence of spawning. In contrast, females are predominant in the catches of intermediate sizes (120 to 135 cm), which could result from differential growth (e.g. females having a lower asymptotic size than males) (ICCAT 2016b).

It is generally agreed that growth rates are relatively slow initially, increasing at the time the fish leave the nursery grounds. This interpretation is supported by analyses of size frequency distributions as well as tagging data. Regardless, questions remain concerning the most appropriate growth model for Atlantic yellowfin tuna, as analyses of hard part growth increments support somewhat different growth patterns. The biological parameters used within the yellowfin stock assessment is given in **Table 3-8**.

Table 3-8. Biological parameters used within the yellowfin stock assessment (reproduced from (ICCAT, 2016b)

<i>Parameter</i>	<i>Yellowfin</i>
Natural mortality (2016 decision)	Lorenzen M based upon the Gascuel <i>et al.</i> , 1992 growth curve with $t_{max}=10$.
Assumed "birth date" of age 0 fish (2011)	February 14 (approximate mid-point of the peak spawning season).
Plus group (2011)	Evaluate the appropriate plus group, the group requires CAA to be through age 12
Growth rates (2016 decision)	Length at age was calculated from the Gascuel <i>et al.</i> , 1992 equation: $FL (cm) = 37.8 + 8.93 * t + (137.0 - 8.93 * t) * [1 - \exp(-0.808 * t)]^{7.49}$
Weights -at-age (2011)	Average weights-at-age were based on the Gascuel <i>et al.</i> , 1992 growth equation and the Caveriviere (1976) length-weight relationship: $W(kg) = 2.1527 \times 10^{-5} * L(cm)^{2.976}$
Maturity schedule (2016 decision)	Maturity will be based upon maturity at length as described in Diaha <i>et al.</i> , 2015: $P_{mature} = e^{\alpha+\beta L} / 1 + e^{\alpha+\beta L}$ Maturity at age will be estimated using the appropriate growth equation

3.3.4. Indices:

Eight longline indices were selected for use in the stock assessment based on meeting specific criteria for inclusion. Indices with similar characteristic were grouped together using a cluster analysis. The two "clusters" represent unique hypotheses regarding trends in abundance of yellowfin tuna. Cluster 1 indices showed an initial decline, with nearly constant relative abundance since 1990, while Cluster 2 indices suggest increased abundance during the 1990s, followed by a general decline through 2014 (**Figure 3-6**). The two trends represent a major source of scientific uncertainty regarding the abundance of yellowfin tuna.

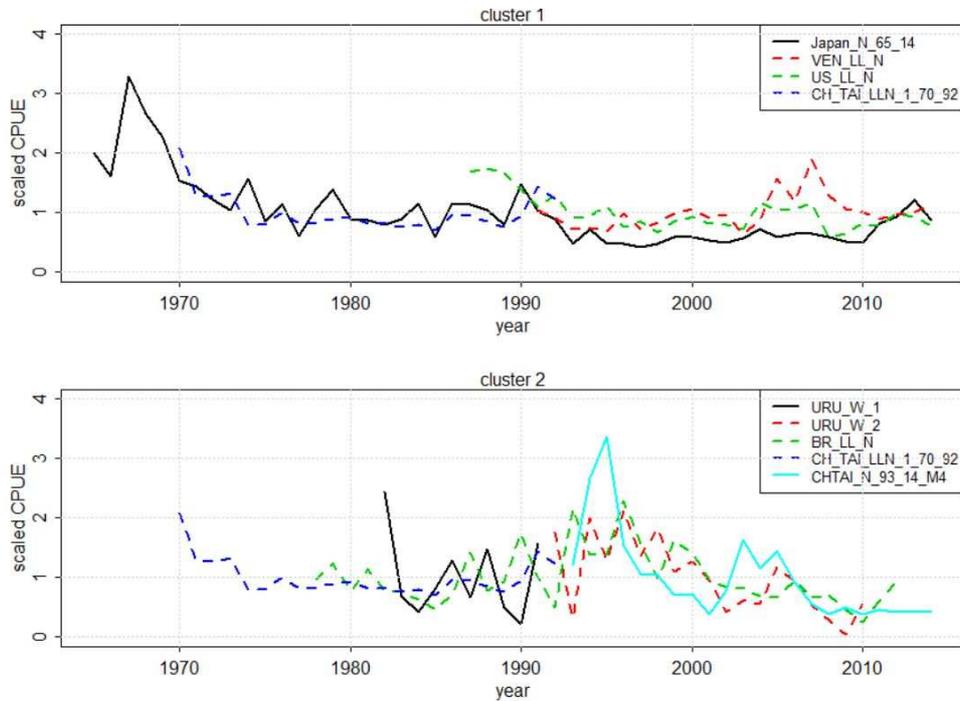


Figure 3-6: Indices used within the stock assessment of yellowfin tuna. Reproduced from (ICCAT, 2016a).

3.3.5. State of the stock:

A full stock assessment was conducted for yellowfin tuna in 2016 (ICCAT 2016a), applying three age-structured models and a non-equilibrium production model to the available catch data through 2014. As has been done in previous stock assessments, stock status was evaluated using both surplus production and age-structured models. Models used to develop management advice considered two primary sources of scientific uncertainty, the use of index clusters that reflect two disparate hypotheses regarding trends in abundance of yellowfin tuna, and alternative model structures as implemented using four model platforms. Surplus production models that used Cluster 2 indices did not converge and were not considered. Management advice was developed using a joint distribution of the results of seven models (ASPIC Cluster 1; ASPM Clusters 1 and 2, VPA Clusters 1 and 2, SS Clusters 1 and 2) which were weighted equally. Additional uncertainties in growth, age-slicing, mortality, index selection and data weighting were explored in sensitivity runs. Trends in biomass and fishing mortality, relative to the levels that produce MSY, were generally similar for all models used to develop management advice, although small differences in current stock status were noted (**Figure 3-7**). Model specific Kobe status plots (**Figure 3-8**), with the annual trajectories of stock status, indicate that for most models the 2014 stock status was near B_{MSY} and below F_{MSY}. Annual trajectories should be interpreted with caution because they are not adjusted for known changes in selectivity. The estimated MSY (median = 126 304 t) may be below what was achieved in past decades because overall selectivity has shifted to smaller fish. Bootstrapped estimates of the current status for the seven models, which reflect the variability of the point estimates given assumptions about uncertainty in the inputs, are shown in **Figure 3-9**. When the uncertainty around the point estimates from all models is taken into account, there was an estimated 45.5% chance that the stock was healthy (not overfished and overfishing not occurring) in 2014, a 41.2% probability that the stock was overfished, but not experiencing overfishing, and a 13.3% chance that the stock was both overfished and undergoing overfishing (**Figure 3-10**). In summary, 2014 stock biomass was estimated to be about 5% below B_{MSY} (overfished) and fishing mortality rates were about 23% below F_{MSY} (no overfishing).

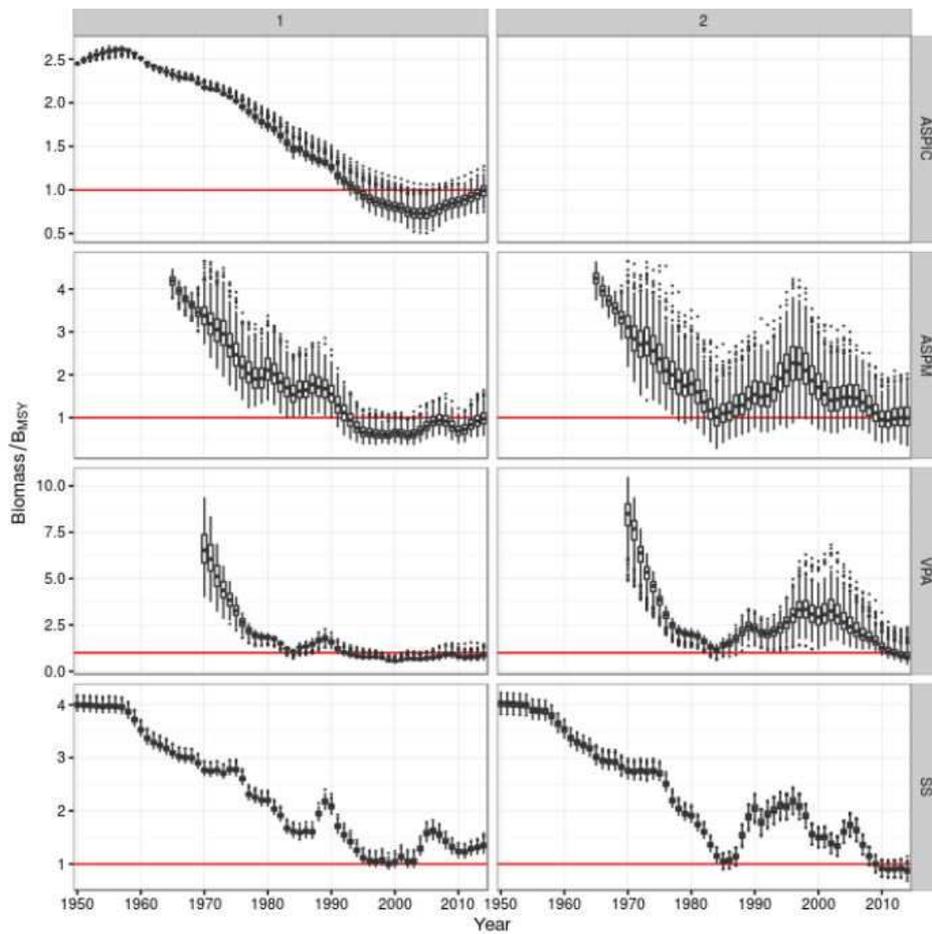


Figure 3-7: Trends in biomass relative to the level that produces MSY (red line) for the model runs used to develop management advice. Box and whisker plots indicate the uncertainty in bootstrap estimates. (Boxes indicate the annual median estimates, 25th and 75th percentiles; whiskers and points indicate the range of extreme outcomes). Reproduced from (ICCAT, 2016a).

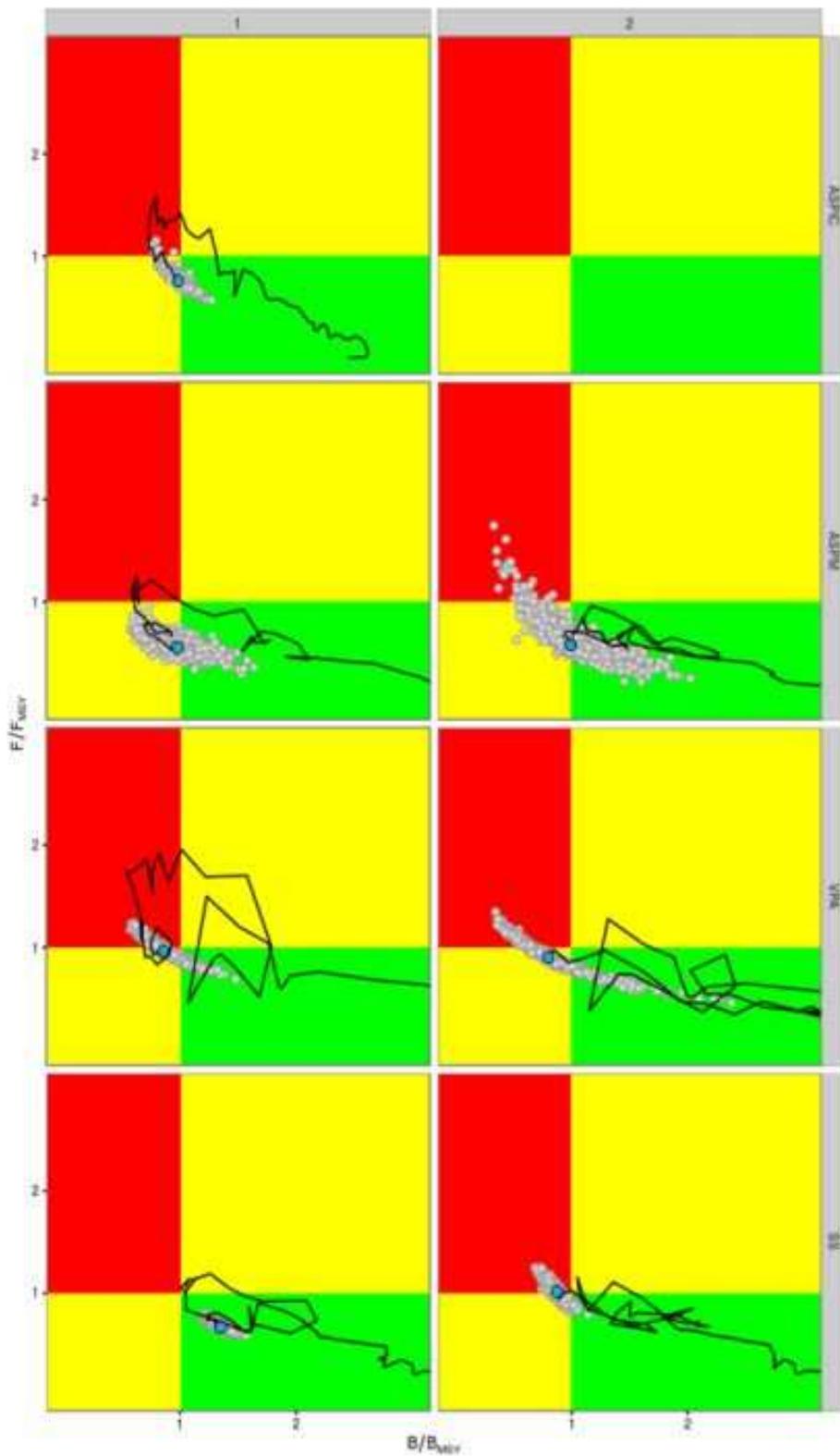


Figure 3-8: Kobe status Plot for each model with 500 bootstrap estimates of the uncertainty in current stock status. The trajectories are intended to demonstrate trends in stock status, but do not account for known changes in selectivity. Reproduced from (ICCAT, 2016a).

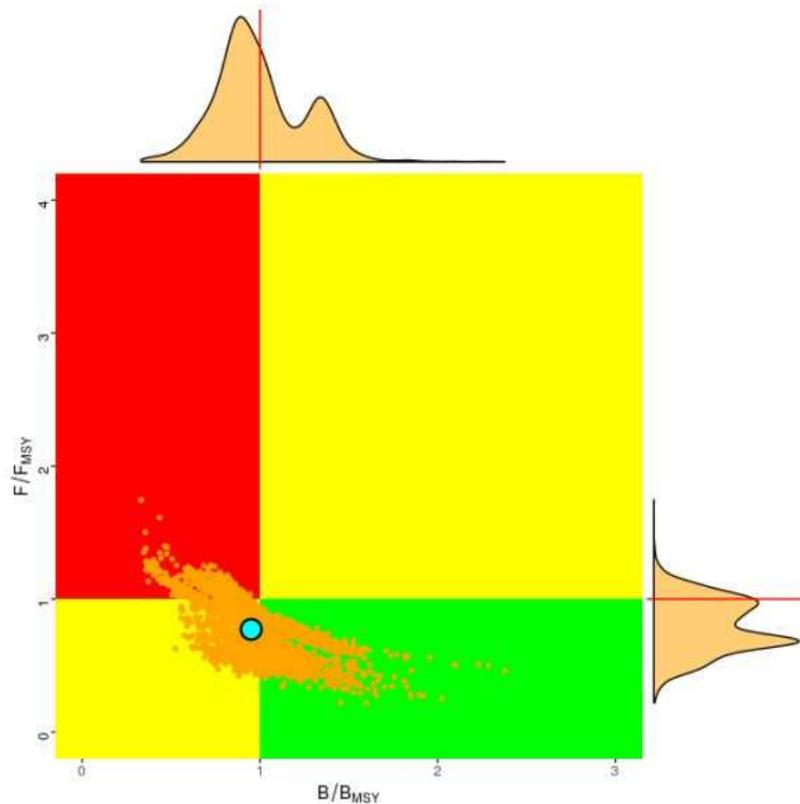


Figure 3-9: Kobe Phase Plot and marginal density for all models (used to develop management advice) combined. Reproduced from (ICCAT, 2016a).

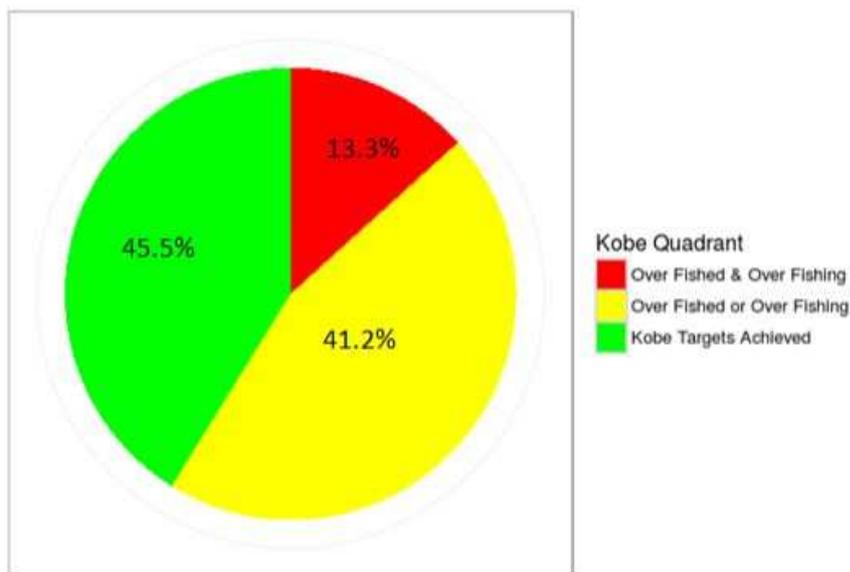


Figure 3-10: Summary of current status estimates for the yellowfin tuna stock based on age structured and production models making use of the catch and effort data through 2014. Reproduced from (ICCAT, 2016a).

3.3.6. Projections:

Projections conducted in 2016 considered a number of constant catch scenarios. In most cases, catches less than 120 000 t led to, or maintained a healthy stock status through 2024. The results from the seven models were summarised to produce estimated probabilities of achieving the Convention objectives ($B > B_{MSY}$, $F < F_{MSY}$), for a given level of constant catch, for each year up to 2024 (**Table 3-9**). Maintaining catch levels at the current TAC of 110 000 t is expected to achieve healthy

stock status ($B > B_{MSY}$, $F < F_{MSY}$) through 2017 with at least 68% probability, increasing to 97% by 2024. This result is similar to the previous assessment result (ICCAT, 2011a) which indicated that catch levels of 110 000 t were expected to lead to, or maintain healthy stock status through 2017 with an at least 64% probability, and with a 77% by 2024. However, the overage of the 2016 catch of 130 000t was not considered within these projections.

Table 3-9: Kobe II matrices giving the probability that $F < F_{MSY}$, $B > B_{MSY}$ and the joint probability of $F < F_{MSY}$ and $B > B_{MSY}$, in given years, for various constant catch levels based on combined model results

a) Probability that $F < F_{MSY}$

TAC	2017	2018	2019	2020	2021	2022	2023	2024
60,000	99%	100%	100%	100%	100%	100%	100%	100%
70,000	99%	99%	100%	100%	100%	100%	100%	100%
80,000	98%	99%	99%	99%	99%	100%	100%	100%
90,000	95%	98%	99%	99%	99%	99%	99%	99%
100,000	91%	96%	98%	98%	99%	99%	99%	99%
110,000	84%	89%	93%	96%	97%	98%	98%	98%
120,000	74%	79%	83%	80%	81%	82%	83%	84%
130,000	60%	61%	62%	62%	58%	54%	51%	48%
140,000	46%	44%	39%	33%	31%	31%	31%	30%
150,000	32%	25%	21%	20%	19%	20%	20%	20%

b) Probability that $B > B_{MSY}$

TAC	2017	2018	2019	2020	2021	2022	2023	2024
60,000	75%	91%	99%	99%	99%	99%	100%	100%
70,000	74%	87%	97%	99%	99%	99%	99%	99%
80,000	73%	86%	96%	99%	99%	99%	99%	99%
90,000	71%	82%	91%	97%	99%	99%	99%	99%
100,000	70%	80%	89%	92%	96%	97%	99%	99%
110,000	68%	78%	85%	90%	93%	95%	96%	97%
120,000	67%	75%	80%	80%	81%	82%	84%	84%
130,000	64%	68%	72%	70%	69%	67%	65%	62%
140,000	63%	64%	63%	59%	53%	46%	40%	38%
150,000	61%	59%	55%	47%	34%	30%	28%	27%

c) Probability that $F < F_{MSY}$ and $B > B_{MSY}$

TAC	2017	2018	2019	2020	2021	2022	2023	2024
60,000	75%	91%	99%	99%	99%	99%	100%	100%
70,000	74%	87%	97%	99%	99%	99%	99%	99%
80,000	73%	86%	96%	99%	99%	99%	99%	99%
90,000	71%	82%	91%	97%	99%	99%	99%	99%
100,000	70%	80%	89%	92%	96%	97%	99%	99%
110,000	68%	78%	85%	90%	92%	95%	96%	97%
120,000	65%	73%	79%	78%	79%	80%	82%	82%
130,000	57%	59%	61%	61%	57%	54%	50%	48%
140,000	45%	44%	38%	33%	31%	31%	31%	30%
150,000	31%	24%	21%	20%	19%	20%	20%	20%

Note: SS, VPA and ASPIC projections applied an assumed catch of 110,337 (2015 estimate with carry-overs) to 2015 and 2016, prior to the application of the constant TACs of 50,000 to 150,000 t in 2017-2024. Due to a software constraint, ASPM projections applied constant TACs beginning in 2015.

3.3.7. Management recommendations:

The Atlantic yellowfin tuna stock was estimated to be overfished, but at 95% B_{MSY} in 2014. Maintaining catch levels at the current TAC of 110 000 t is expected to maintain healthy stock status through 2024. (ICCAT, 2014) and (ICCAT, 2015a). Table below summarises main outputs from the fishery advice and most relevant management measures in effect, for more details on the fishery management measures see **section 3.3.8**.

Table 3-10. Management measures and stock status for Atlantic Yellowfin tuna. Source: ICCAT 2017

ATLANTIC YELLOWFIN TUNA SUMMARY	
Maximum Sustainable Yield (MSY)	126,304 t (119,100 - 151,255 t) ¹
2016 Yield	127,800 t
Relative Biomass B_{2014}/B_{MSY}	0.95 (0.71-1.36) ¹
Relative Fishing Mortality: $F_{current(2014)}/F_{MSY}$	0.77 (0.53-1.05) ¹
2014 Total Biomass	464,712 t (308,287 – 731,485 t) ¹
Stock Status (2014)	Overfished: Yes Overfishing: No
Management measures in effect:	
[Rec. 14-01]:	
<ul style="list-style-type: none"> - Time-area closure for FAD associated surface fishing - TAC of 110,000 t - Specific authorization to fish for tropical tunas for vessels 20 meters or greater - Specific limits of number of longline and/or purse seine boats for a number of fleets 	
[Rec. 16-01]	
<ul style="list-style-type: none"> - Revised time-area closure for FAD associated surface fishing - TAC of 110,000 t - Specific authorization to fish for tropical tunas for vessels 20 meters or greater - Specific limits of number of longline and/or purse seine boats for a number of fleets - Specific limits on FADs, non-entangling FADs required 	

NOTE: $F_{current(2014)}$ refers to F_{2014} in the case of ASPIC, ASPM and SS, and the geometric mean of F across 2011-2013 in the case of VPA. Relative biomass is calculated in terms of spawning stock biomass in the case of ASPM, SS and VPA and in total biomass in the case of ASPIC.

¹ Median (10th-90th percentiles) from joint distribution of age-structured and production model bootstrap outcomes considered.

3.3.8. Management measures

The main management measures set out in Recommendation 14-01 (ICCAT 2014), 15-01 (ICCAT 2015a) and 16-01 (ICCAT 2016e) are listed below.

- Contracting Parties and Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) whose vessels fish bigeye and/or yellowfin tunas in the Convention area shall implement the Multi-annual Management and Conservation Program initiated in 2012.
- The Commission shall establish and maintain an ICCAT record of authorized tropical tuna vessels. Fishing vessels 20 meters LOA or greater not entered into this record are deemed not to be authorized to fish, retain on board, tranship, transport, transfer, process or land bigeye and/or yellowfin and/or skipjack tunas from the Convention area.
- The annual TAC for 2012 and subsequent years of the Multi-annual program is 110,000 t for yellowfin tuna and shall remain in place until changed based on scientific advice. If the total catch exceeds the TAC for yellowfin tuna the Commission shall review the relevant conservation and management measures in place.
- Each CPC shall ensure that its vessels 20 meters LOA or greater fishing bigeye and/or yellowfin and/or skipjack tunas in the Convention area record their catches in accordance with the requirements set out in Annex 1 of Rec 14-01 and in the Recommendation by ICCAT Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area (Rec 03-13 in (ICCAT 2018c) .
- Fishing for, or supported activities to fish for bigeye, yellowfin and skipjack tunas in association with objects that could affect fish aggregation, including FADs, shall be prohibited: a) From 1 January to 28 February each year, and b) In the area delineated as follows
 - Southern limit: parallel 4° / South latitude

- Northern limit: parallel 5° / North latitude
- Western limit: meridian 20° / West longitude
- Eastern limit: the African coast
- The prohibition referred to in the paragraph above includes: 1. launching any floating objects, with or without buoys; 2. fishing around, under, or in association with artificial objects, including vessels; 3. fishing around, under, or in association with natural objects; 4. towing floating objects from inside to outside the area.
- Each CPC fishing in the geographical area of the area/time closure shall: a) Take appropriate action to ensure that all vessels flying its flag, including supply vessels, when engaged in fishing activities during the time/area closure, have an observer on board in accordance with Annex 4 in Rec 14-01. The information collected by the observers shall be reported each year by 31 July to the ICCAT Secretariat and to SCRS; b) Take appropriate action against vessels flying their flag that do not comply with the area/time closure; c) Submit an annual report on their implementation of the area/time closure to the Executive Secretary, who shall report to the Compliance Committee at each Annual meeting.
- For scientific observers on board of vessels targeting bigeye, yellowfin and/or skipjack tunas in the area east of meridian 20°/West longitude and north of parallel 28°/ South latitude the following shall apply: a) Scientific observers shall automatically be recognized by all CPCs. Such recognition shall allow the scientific observer to continue the collection of data throughout the EEZ visited by the vessel observed. The coastal CPCs concerned shall receive from the flag CPC which mandated the observer the scientific information collected by the observer and related to fishing activities on ICCAT species in their EEZ. b) CPCs that do not accept that their national scientific observer may collect data in the EEZ of another CPC, or that do not recognize as valid the data collected in their EEZ by a scientific observer of another CPC, must inform the Executive Secretary, for immediate transmission to the SCRS and the Compliance Committee, of their refusal within three months after the entry into force of this Recommendation or their accession to ICCAT. By such refusal, the CPC concerned shall refrain to require the deployment of its national scientific observer on vessels of another CPC.
- CPCs shall ensure that for purse seiners flying their flag and fishing for bigeye, yellowfin or skipjack tunas on FADs the following provisional limits are not exceeded: No more than 500 FADs with or without instrumental buoys are active at any one time in relation to each of its vessels through such measures as, for example, the verification of telecommunication bills.
- CPCs with purse seine and baitboat vessels fishing for bigeye, yellowfin and skipjack tunas in association with objects that could affect fish aggregation, including FADs, shall submit to the Executive Secretary Management Plans for the use of such aggregating devices by vessels flying their flag by 31 January each year.
- In order to minimize the ecological impact of FADs, in particular the entanglement of sharks, turtles and other non-targeted species, and the release of synthetic persistent marine debris, CPCs shall: i. replace by 2016 existing FADs with non-entangling FADs in line with the guidelines under Annex 7 of Rec 16-01. ii. undertake research to gradually replace existing FADs with fully biodegradable and nonentangling FADs, with a view to phase out non-biodegradable FADs by 2018, if possible.
- Each CPC shall, by 31 July each year, notify to the Executive Secretary the list of authorized vessels flying their flag which have fished bigeye and/or yellowfin and/or skipjack tunas in the Convention area or have offered any kind of support to the fishing activity (support vessels) in the previous calendar year. For purse seines this list shall also include the support vessels that have supported the fishing activity, irrespective of their flag.
- CPCs shall:
 - submit to the SCRS information on by-catches and discards made by fishing vessels flying their flag fishing for tropical tunas;
 - encourage the vessel owners, masters and crew fishing for tropical tunas under their flag to implement good practices to better manage by-catches and reduce discards;
 - consider designing and adopting management measures and/or management plans to better manage by-catch and reduce discards.

- The number of longline and purse seine vessels are restricted in the bigeye tuna fishery, implying that there is also an effort limit on yellowfin tuna.

3.4. Principle Two: Ecosystem Background

3.4.1. UoC catch composition: species assignment to MSC P2 categories

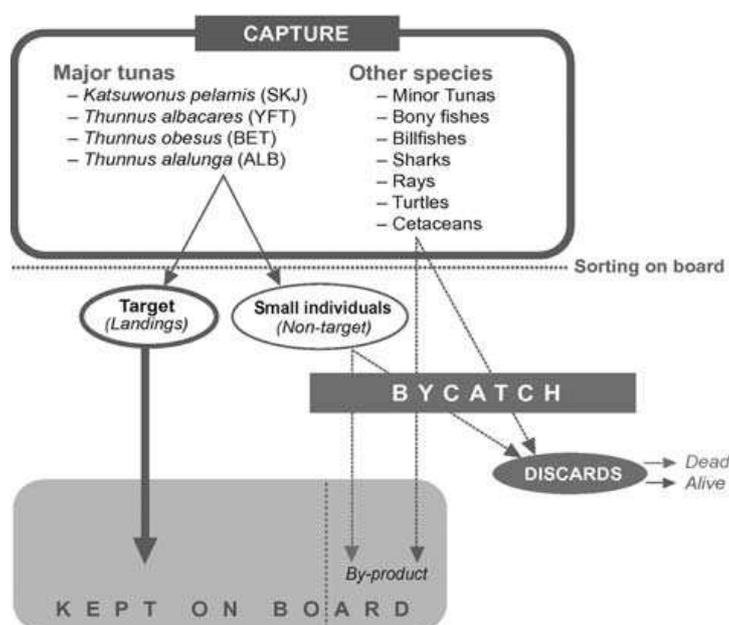
The species assessed under P2 are those species in the catch that are not covered under P1. The assessment team considered each P2 species within only one of the primary species, secondary species or ETP species components, according to MSC FCRs SA3.1.3-3.1.5 and SA3.4.4-3.4.5.

3.4.1.1. Sources of information

The different sources of information used by the team to identify and classify the different species components and subcomponents to be assessed against P2 are presented and discussed below.

Since the term by-catch is widely used by all the different sources of information presented below, the assessment team considers important to provide here a clear definition of this term. The [ICCAT manual](#) defines the term by-catch as: “(...) the unintentional/incidental capture of non-target species during fishing operations”. The fate of those bycatches can be: (i) to be retained; (ii) to be dumped dead, or (iii) to be released alive to the sea (**Figure 3-11**). Small individuals of major tunas are also considered as by-catch (non-target).

Figure 3-11. Conceptual scheme defining the terms used in the present study and describing the origin and fate of organisms caught aboard fishing vessels. Source: from Amandè et al 2011



a. ICCAT list on bycatch and incidental catches

A list of by-catch species recorded as being ever caught by any major tuna fishery occurring within the Convention Area is presented in Appendix 5 of the ICCAT Manual. This list was reviewed and updated with all the species reported until 2010 (Appendix 5.1 at the [ICCAT website](#)). As indicated by ICCAT: “The list is qualitative and is not indicative of quantity or mortality. Thus, the presence of a species in the lists does not imply that it is caught in significant quantities, or that individuals that are caught necessarily die”.

This list has been used to complete the other sources of information presented below (fishing logbooks and observer’s data from the assessed vessels, and relevant scientific publications). For this, we have proceeded as follows:

- In those cases where observer records appeared at the level of Gender, Family or Suborder (ex: Mobulidae, Sphyrnidae, Carcharhinidae, Manta sp., Carcharhinus sp, Misticeto unidentified ...), the ICCAT list was reviewed and to complete with those species of the Genus, Family or Suborder for which there are previous records of interactions with purse seiners. These species have been included in the final list for their classification and evaluation in P2 (**Table 3-17**). In this way, the team has made sure to include in the list those species which may have interacted with the UoC without being correctly identified by the on-board observers.
- Although observers identify incidental catches of sharks, cetaceans and turtles at species level, this was not the case for teleosts other than the main commercial tunas and billfishes when IEO observers were on board (2014-2017). Tunas and tuna-like species other than yellowfin, bigeye and skipjack were recorded under the generic term 'Other tunas' (**Table 3-13**) while the remaining teleosts were registered under the generic title 'Other fish' (**Table 3-16**). Therefore, all tunas, tuna-like as well as other teleosts for which ICCAT found that there are records of interactions with purse seiners have also been included in the final list (**Table 3-17**) for its P2 assessment.

b. Amandè et al 2011

Spanish and French purse seine fishery data (i.e., logbook, well maps, and landing data) and observer's data collected within the framework of DCF programme for 2008 and 2009 were used to update the estimates of bycatch of the European tuna purse seine fishery in the Atlantic Ocean (Amandè, et al. 2011). Observer data were collected during 13 trips and 19 trips in 2008 and 2009, respectively corresponding to 6.7% and 8.5% of total trips, respectively. Fishing sets were categorized into log associated (FOB) and free swimming schools (FSC) according to direct information reported by observers. For the purpose of this assessment the assessment team worked on the FSC data presented in Amandè et al 2011 to elaborate **Table 3-11**. Annual by-catch for 2008 and 2009 on FSC sets was estimated to be about 1,529 t and 4,253 t, respectively, corresponding to a mean annual value of 39 t per 1,000 t and 87 t per 1,000 t of production, respectively. This represents about 6% of total catch during the studied period. By-catch of tunas represented 86.7% of the total by-catch corresponding to 56.8 t/1,000 t of unloaded tuna. For the remaining 13.3%, bony fishes represented 5.2% (3.4 t/1,000 t), billfishes 3.5% (2.6 t/1,000 t), sharks and rays 4.6% (0.4 t/1,000 t). The authors provide a detailed list of the species accounting for the bycatch, although they do not present their volumes. However, taking into account the percentages of the total catch accounted for each of the species group (tunas, bony fishes, etc.), it is clear that any single species would meet the requirements for being assessed as a 'Main' P2 component. All species listed in this paper were included in **Table 3-17** as P2-species component to be assessed in this assessment.

Table 3-11. Estimated bycatch (tonnes) by species group FSC sets. Source: adapted from Amandè et al 2011

	2008	2009	TOTAL	t/1000t of production	% of the catch	% of the bycatch
Catch	41,032	53,007	94,039			
Production	39,503	48,754	88,257			
Total bycatch	1,529	4,253	5,782	65.5	6.15%	
rays	5	26	31	0.4	0.03%	0.54%
sharks	12	221	233	2.6	0.25%	4.03%
tunas	1,296	3,719	5,015	56.8	5.33%	86.73%
billfishes	101	99	200	2.3	0.21%	3.46%
bony fishes	115	188	303	3.4	0.32%	5.24%

c. Gondra et al 2017

This paper presents an update for the period 2010-2016 of the bycatch estimations for the European tuna purse seine fishery operating in the Atlantic Ocean. Bycatch data were collected by observers on board. Observer coverage increased progressively from 15 trips in 2010, to 114 and 107 trips in

2015 and 2016 respectively. Bycatch data were stratified by quarter and fishing mode (FSC and FAD sets). Again, tunas (neritic tunas and small size tunas) represent the major part of the bycatch (between 36 and 88% depending on the year), followed by bony fish (1-29%), sharks (0-47%), billfishes (2-12%), rays (1-5%) and turtles (0-1%). The estimation of the bycatch generated to achieve a 1,000 tons of landed tropical tunas is shown in **Table 3-12**. As bycatch is known to account for a low percentage of the catches (between 2% according to data collected by Sea Eye observers on board the assessed vessels -**Table 3-13**- and 6% according to Amandè et al 2011) data shown on **Table 3-12** allows to interfere that none of the listed species groups would account for more than 3% of the total catches. Again, this allows the team to interfere that any single species would not meet the requirements for being assessed as a 'Main' P2 component. All species listed in this paper (including turtles and cetaceans) were included in **Table 3-17** as P2-species component to be assessed in this assessment.

Table 3-12. Bycatch tones per 1,000 t of production (BET+YFT+SKJ landed) by species group on FSC sets performed by European tuna purse seiners operating in the Atlantic between 2010-2016. Source: Gondra et al 2017

	2010	2011	2012	2013	2014	2015	2016
Rays	0.58	0.22	0.27	0.56	0.14	0.26	0.56
Sharks	2.81	1.06	0.07	5.55	3.28	10.73	11.43
Target tunas	1.13	33.58	1.64	1.23	1.62	9.49	4.00
Other tunas	26.36	0.53	14.27	2.64	4.68	20.99	7.30
Billfishes	2.03	1.56	2.23	1.23	0.82	0.83	0.78
Bony fishes	1.79	0.52	2.96	0.30	0.16	0.33	0.37
Turtles	0.27	0.18	0.37	0.14	0.15	0.11	0.14

d. UoA catch data from the logbooks

Despite the type of set was properly recorded at the logbooks, before 2016 the client did not keep separate records for catches and landings, since from a commercial point of view they were all the same product (species and in some cases sizes would make a difference, but not the type of fishing). However, this situation changed in 2016 and since then separate records of the catches and landings are kept depending on whether they come from FCS (commercially known as FAD-FREE catches) or FOB sets. Logbook records of the UoC catches for 2016 and 2017 sorted by type of sets are presented in **Table 3-6**. The percentage of the total volume caught accounted for each species was used to classified bigeye tuna, skipjack, albacore, and frigate tuna against SA3.1.3-3.1.5 and SA3.4.4.-3.4.5. Results are shown in **Table 3-17**.

The client shared with the assessment team their logbooks from 2015 to 2017, so information from those years could be validated.

e. Data from observers on board the UoA

Since June 2012, the client has ensured a 100% observer's coverage on board the two vessels. First through a contract signed between OPAGAC/AGAC and the IEO. This contract was in place from May 2012 to February 2017 (although the latest fishing trips observed by IEO ended in late March –SY I- and first week of April –SY III-). Since then the client has signed a contract with Sea Eye (a local specialized consultancy firm based in Abidjan) to ensure the continuity of a full observer's coverage on board the assessed vessels. Sea Eye is a consultancy based in Côte d'Ivoire specialized in these kind of services. Sea Eye works in close cooperation with AZTI, which will be the entity in charge of receiving and checking the observer data before being sent to the SCRS / ICCAT Secretariat.

The current observer program in place ensures compliance with ICCAT Recommendations [10-10] and [16-01] and constitutes one of the measures established in the Code of Good Practices signed by the OPAGAC / AGAC fleet in 2012.

Regardless of whether these observers are from the IEO or from Sea Eye, all of them collect detailed information on fishing operations, composition of catches and discards (including causes for discarding, whether it was hauled on board or not), as well as interactions with turtles, cetaceans or seabirds (N individuals/sp, fate -alive/dead/injured/finning-). To do so, they use ICCAT standardized forms and all the information is uploaded into the same BD to be reported to the ICCAT secretariat.

Data recorded by the observers on board the UoC (**Table 3-13**) show that yellowfin tuna clearly dominates tuna catches from unassociated sets (70% in volume), followed by skipjack (26%), while bigeye tuna only accounts for less than 4% and leaving less than 1% remaining for other tunas. These data are similar to those reported in the logbooks by the assessed fleet between 2016 and 2017 (**Table 3-6**). However, unlike Amandè et al 2011 (**Table 3-11**), data presented in **Table 3-6** and **Table 3-13** do not consider catches (retained and discarded) of billfishes, sharks and rays and bony fishes other than tunas and tuna-like species. This is due to the fact that data collected by IEO observers only recorded estimated weight for tunas and other bony fishes, while for other species groups (billfishes, sharks, turtles, etc.) only number of individuals were recorded (see **Table 3-16**). However, data collected by Sea Eye observers do provide estimated weight for all species groups.

Table 3-14 presents total catch, tons per 1,000 production (YFT+SKJ+BET landed), and % of the catch and bycatch amounted by each of the species groups recorded by Sea Eye observers. Total bycatch amounted less than 2% of total catches, meaning about 18t of bycatch for every 1,000t of tropical tunas landed. None of the species groups account for 1% of the total catches. Sharks and other tunas are the groups comprising the majority of the bycatch (41.5% and 38.7% respectively). **Table 3-15** shows these data disaggregated down to species level, it can be seen that apart from the three tropical tunas none of the other species accounts for even 0.5% of the total catches (catches calculated including all retained, released and discarded bycatch).

Catches for non-tuna species recorded by the IEO observers are presented in **Table 3-16**. Species were grouped to facilitate the reading, but data made available to the assessment team allowed analysis at species level. However, as mentioned above catches were recorded in number of individuals, with the only exception of ‘other fishes’ (in tons). Besides, the fate of the catches (retained, discarded alive or dead) was only presented for all the fishing operations together, excluding the possibility to analyse only the unassociated sets.

All data on FCS sets recorded by IEO and Sea Eye observers on board the assessed vessels were considered in order to elaborate **Table 3-17**.

Table 3-13. Tuna catches (tonnes) corresponding to FSC sets. Data recorded by observers on board the assessed vessels between 2014 and 2018 (a total of 81 fishing trips, 441 FSC sets). Data includes fate (retained/discarded). Source: elaborated by BV based on data collected by the IEO and Sea Eye observers on board the assessed vessels.

Species	Retained	Discarded	Total tuna catches	% of the total tuna catches
YFT	7,813	9	7,822	70.06%
SKJ	2,852	9	2,861	25.62%
BET	396	0	396	3.55%
Other Tuna	62	24	86	0.77%

Table 3-14. Catch composition of FSC sets and fate of bycatch (by species groups) in weight (tons). Data recorded by Sea Eye observers on board the assessed vessels between 2017 and 2018 (26 fishing trips, 139 FCS sets) Source: elaborated by BV based on data from Sea Eye observers

	Tons			t/1,000t of production	% of the catches	% of the bycatch	Fate (%weight)		
	2017	2018	TOTAL				% retained	% released alive	% discarded dead
All catches (including retained, released & discarded bycatch)	3,028.4	261.0	3,289.4						
Landings (all retained catches)	2,991.1	260.4	3,251.5						
Production (YFT+SKJ+BET landed)	2,973.0	258.0	3,231.0						
Total bycatch	55.4	3.0	58.4	18.07	1.77				
Sharks and rays	23.9	0.3	24.2	7.49	0.74	41.46	0.41	71.99	27.60
Target tunas	6.9	0.0	6.9	2.14	0.21	11.87	100.00	0.00	0.00
Other tunas	20.6	2.0	22.6	6.99	0.69	38.72	100.00	0.00	0.00
Billfishes	2.6	0.4	3.0	0.93	0.09	5.13	100.00	0.00	0.00
Other bony fishes	0.8	0.2	1.0	0.31	0.03	1.72	38.06	61.94	0.00
Turtles	0.6	0	0.6	0.20	0.02	1.11	0.00	100.00	0.00

Table 3-15. Data on catch composition of FSC sets and fate of each of the species caught. Data recorded by Sea Eye observers on board the assessed vessels between 2017 and 2018 (26 fishing trips, 139 FCS sets). Source: elaborated by BV based on data from Sea Eye observers

		N ind	t/1,000t production			% total catch^	Fate (% in weight)		
			retained	released alive	thrown dead		% retained	% alive	% dead
Rays	Dasyatidae	1	0.00	<0.00	0.00	0.00	0.00	100.00	0.00
	Dasyatys (Pteroplatytrygon) violacea	6	0.00	0.01	0.00	0.00	0.00	100.00	0.00
	Manta birostris	1	0.00	0.02	0.00	0.00	0.00	100.00	0.00
	Mobula japonica (rancureli)	1	0.00	0.05	0.00	0.00	0.00	100.00	0.00
	Mobula mobular	6	0.00	0.19	0.09	0.03	0.00	66.67	33.33
Requiem sharks	Carcharhinidae sp.	95	0.03	0.28	1.16	0.14	2.11	18.95	78.95
	Carcharhinus falciformis	159	0.00	3.88	0.58	0.44	0.00	87.04	12.96
	Carcharhinus longimanus	2	0.00	0.03	0.00	0.00	0.00	100.00	0.00
Mako sharks	Isurus oxyrinchus	1	0.00	0.02	0.00	0.00	0.00	100.00	0.00
Hammerhead sharks	Sphyrna lewini	22	0.00	0.25	0.05	0.03	0.00	84.23	15.77
Blue shark	Prionace glauca	12	0.00	0.38	0.19	0.06	0.00	66.59	33.41
Whale shark	Rhincodon typus	1	0.00	0.29	0.00	0.03	0.00	100.00	0.00
Target tropical tunas	Katsuwonus pelamis	(*)	360.57	0.00	2.05	35.62	99.43	0.00	0.57
	Thunnus albacares	(*)	567.63	0.00	0.09	55.76	99.98	0.00	0.02
	Thunnus obesus	(*)	71.80	0.00	0.00	7.05	100.00	0.00	0.00
Other tunas	Auxis thazard	(*)	1.86	0.00	1.05	0.29	63.83	0.00	36.17
	Euthynnus alletteratus	(*)	3.10	0.00	0.62	0.36	83.33	0.00	16.67

	Thunnus alalunga	(*)	0.31	0.00	0.06	0.04	83.33	0.00	16.67	
Billfishes	Istiophorus albicans	11	0.07	0.00	0.00	0.01	100.00	0.00	0.00	
	Makaira nigricans	14	0.80	0.00	0.00	0.08	100.00	0.00	0.00	
	Xiphias gladius	2	0.05	0.00	0.00	0.01	100.00	0.00	0.00	
	Acanthocybium solandri	12	0.04	0.00	0.00	0.00	100.00	0.00	0.00	
Other bony fishes	Canthidermis maculata	30	0.01	0.00	0.00	0.00	100.00	0.00	0.00	
	Caranx crysos	2	0.00	0.00	0.00	0.00	100.00	0.00	0.00	
	Coryphaena equiselis	30	0.04	0.00	0.00	0.00	100.00	0.00	0.00	
	Coryphaena hippurus	9	0.02	0.00	0.00	0.00	100.00	0.00	0.00	
	Echeneis naucrates	1	0.00	<0.00	0.00	0.00	0.00	100.00	0.00	
	Elagatis bipinnulata	20	0.01	0.00	0.00	0.00	100.00	0.00	0.00	
	Kyphosus sectatrix	1	<0.00	0.00	0.00	0.00	100.00	0.00	0.00	
	Lobotes surinamensis	2	<0.00	0.00	0.00	0.00	100.00	0.00	0.00	
	Masturus lanceolatus	2	0.00	0.01	0.00	0.00	0.00	100.00	0.00	
	Mola mola	8	0.00	0.19	0.00	0.02	0.00	100.00	0.00	
	Naucrates ductor	1	<0.00	0.00	0.00	0.00	100.00	0.00	0.00	
	Seriola rivoliana	1	<0.00	0.00	0.00	0.00	100.00	0.00	0.00	
	Turtles	Dermodochelys coriacea	1	0.00	0.08	0.00	0.01	0.00	100.00	0.00
		Lepidochelys olivacea	10	0.00	0.12	0.00	0.01	0.00	100.00	0.00

^ Catches calculated as all retained target catches + all retained, released alive & discarded bycatch

(*) Only weight recorded

Table 3-16. Non-tuna bycatches recorded by the IEO observers on board the two assessed vessels between 2014 and 2017 (55 fishing trips, 302 FSC sets +984 FOB sets). Data are presented in number of individuals except for 'other bony fishes' (tons). Source: elaborated by BV based on data recorded by the IEO observers and provided by the client

	FSC sets	FOB sets	TOTAL	Retained		Discarded	
				%	% alive	% dead	
Rays	35	136	171	1.17	58.48	40.35	
Requiem sharks (Carcharhinidus)	303	2,706	3,009	1.56	43.37	55.07	
Thresher sharks (Alopias spp)	0	1	1	0.00	100.00	0.00	
Mako sharks (Isurus spp)	3	50	53	24.53	43.40	32.08	
Hammerhead sharks (Shpyrna spp)	6	564	570	0.00	55.26	44.74	
Blue shark (Prionace glauca)	21	21	42	4.76	76.19	19.05	
Whale shark (Rhincodon typus)	0	4	4	0.00	100.00	0.00	
Billfishes	116	436	552	91.67	0.54	7.79	
Turtles	39	289	328	0.00	97.26	2.74	
Dolphins and pilot whales	2	40	42	0.00	76.19	23.81	
Whales	22	0	22	0.00	100.00	0.00	
Other bony fishes (tons)	4.38	607.53	611.92	58.55	18.37	23.77	

3.4.1.2. P2 species classification following MSC requirements

According to the different sources of information presented above, the assessment team elaborated the most complete list of all species susceptible to interact with the UoC, and they were classified into primary (main/minor), secondary (main/minor) and ETP species according to MSC requirements.

Table 3-17. List of all species susceptible to interact with the UoC classified according to FCR SA3.1.3-3.1.5 and SA3.4.4.-3.4.5. For each of the species it is indicated in which sources of information (as described in section 3.4.1.1: (A) ICCAT bycatch list; (B) Amandè et al 2011; (C) Gondra et al (2017); (D) UoA logbooks; (E) Observer data on board the UoA) appears to interact with unassociated purse seiners. Data deficient column was assessed against FCR7.7.6

ICCAT Code	Common name	Scientific name	P2 component	P2 subcomp	ETP Regulation	Sources of information	Data deficient
Rays							
RMO	Smoothtail mobula	<i>Mobula thurstoni</i>	ETP	N/A	CMS (Ap. I); Sharks CMS MoU	A	NO
RMJ	Spinetail mobula	<i>Mobula japonica</i>	ETP	N/A	CMS (Ap. I); Sharks CMS MoU	B, E	NO
RMM	Devil fish	<i>Mobula mobular</i>	ETP	N/A	CMS (Ap. I); Sharks CMS MoU	A, B, E	NO
RMT	Chilean devil ray	<i>Mobula tarapacana</i>	ETP	N/A	CMS (Ap. I); Sharks CMS MoU	B, E	NO
RMB	Giant manta	<i>Manta birostris</i>	ETP	N/A	CMS (Ap. I); Sharks CMS MoU	A, E	NO
-	Atlantic torpedo	<i>Tetronarce nobiliana</i>	Secondary	Minor	N/A	A	YES
PLS	Pelagic stingray	<i>Pteroplatytrygon violacea</i>	Secondary	Minor	N/A	A, B, E	YES
Sharks							
BSH	Blue shark	<i>Prionace glauca</i>	Primary	Minor	N/A	A, C, E	NO
SMA	Shortfin mako	<i>Isurus oxyrinchus</i>	ETP	N/A	Sharks CMS MoU	A, B, C, E	NO
FAL	Silky shark	<i>Carcharhinus falciformis</i>	ETP	N/A	ICCAT Rec [11-08]; Sharks CMS MoU	A, B, C, E	NO
OCS	Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	ETP	N/A	ICCAT Rec [10-07]	A, B, C, E	NO
PTH	Pelagic thresher	<i>Alopias pelagicus</i>	ETP	N/A	Sharks CMS MoU	C	
SPZ	Smooth hammerhead	<i>Sphyrna zygaena</i>	ETP	N/A	ICCAT Rec [10-08]; CMS (Ap.I); Sharks CMS MoU	A, B, C, E	NO
SPL	Scalloped hammerhead	<i>Sphyrna lewini</i>	ETP	N/A		A, B, C, E	NO
SPK	Great hammerhead	<i>Sphyrna mokarra</i>	ETP	N/A		A, C, E	NO
RHN	Whale shark	<i>Rhincodon typus</i>	ETP	N/A	Sharks CMS MoU, SICA Regulation OSP-07-2014, Ministerial Agreement No 713-2014	A, E	NO
Tunas and tuna-like species (Scombriforms except Trichiuridae and Gempylidae and Genus Scomber)							
SKJ	Skipjack tuna	<i>Katsuwonus pelamis</i>	Primary	Main	N/A	A, B, C, D, E	NO
BET	Bigeye tuna	<i>Thunnus obesus</i>	Primary	Main	N/A	A, B, C, D, E	NO
ALB	Albacore	<i>Thunnus alalunga</i>	Primary	Minor	N/A	A, B, C, D, E	NO
BLF	Blackfin tuna	<i>Thunnus atlanticus</i>	Secondary	Minor	N/A	A, C	YES
LTA	Atlantic black skj	<i>Euthynnus alletteratus</i>	Secondary	Minor	N/A	A, B, C, E	YES
KAW	Kawakawa	<i>Euthynnus affinis</i>	Secondary	Minor	N/A	B, C	YES
FRI	Frigate tuna	<i>Auxis thazard</i>	Secondary	Minor	N/A	A, B, C, D, E	YES
BLT	Bullet tuna	<i>Auxis rochei</i>	Secondary	Minor	N/A	A, B, C	YES
MAW	West African Spanish	<i>Scomberomorus tritor</i>	Secondary	Minor	N/A	A	YES

mackerel							
Billfishes							
SWO	Swordfish	<i>Xiphias gladius</i>	Primary	Minor	N/A	A, C, E	NO
SAI	Atlantic sailfish	<i>Istiophorus albicans</i>	Primary	Minor	N/A	A, B, C, E	NO
BUM	Blue marlin	<i>Makaira nigricans</i>	Primary	Minor	N/A	A, B, C, E	NO
BLM	Black marlin	<i>Makaira indica</i>	Secondary	Minor	N/A	B, C	YES
WHM	Atlantic white marlin	<i>Tetrapturus albidus</i>	Primary	Minor	N/A	A, B, C, E	NO
SPF	Longbill spearfish	<i>Tetrapturus pfluegeri</i>	Secondary	Minor	N/A	A, C, E	YES
Other teleosts							
AWI	Orange filefish	<i>Aluterus schoepfii</i>	Secondary	Minor	N/A	A	YES
WHM	Wahoo	<i>Acanthocybium solandri</i>	Secondary	Minor	N/A	A, B, C, E	YES
ALM	Unicorn leatherjacket filefish	<i>Aluterus monoceros</i>	Secondary	Minor	N/A	B, C	YES
-	¿? triggerfish	<i>Balistes capriscus</i>	Secondary	Minor	N/A	B	YES
TRG	Grey triggerfish	<i>Balistes carolinensis</i>	Secondary	Minor	N/A	A, B, C	YES
BVP	Bluespotted triggerfish	<i>Balistes punctatus</i>	Secondary	Minor	N/A	A	YES
BEN	Needlefishes, etc. nei	<i>Belonidae</i>	Secondary	Minor	N/A	A	YES
CNT	Rough triggerfish	<i>Canthidermis maculata</i>	Secondary	Minor	N/A	A, B, C, E	YES
RUB	Blue runner	<i>Caranx crysos</i>	Secondary	Minor	N/A	A, B, C, E	YES
CFW	Pompano dolphinfish	<i>Coryphaena equiselis</i>	Secondary	Minor	N/A	A, B, C, E	YES
DOL	Common dolphinfish	<i>Coryphaena hippurus</i>	Secondary	Minor	N/A	A, B, C, E	YES
DIY	Spot-fin porcupinefish	<i>Diodon hystrix</i>	Secondary	Minor	N/A	A, C	YES
RRU	Rainbow runner	<i>Elagatis bipinnulata</i>	Secondary	Minor	N/A	A, B, C, E	YES
EXQ	Flying halfbeak	<i>Euleptorhamphus velox</i>	Secondary	Minor	N/A	A	YES
FLY	Flyingfishes nei	<i>Exocoetidae</i>	Secondary	Minor	N/A	A	YES
KYS	Bermuda sea chub	<i>Kyphosus sectatrix</i>	Secondary	Minor	N/A	A, B, C, E	YES
LAG	Opah	<i>Lampris guttatus</i>	Secondary	Minor	N/A	A	YES
LOB	Tripletail	<i>Lobotes surinamensis</i>	Secondary	Minor	N/A	A, B, C, E	YES
MOX	Ocean sunfish	<i>Mola mola</i>	Secondary	Minor	N/A	A, B, C, E	YES
MRW	Sharptail mola	<i>Masturus lanceolatus</i>	Secondary	Minor	N/A	A, B, C, E	YES
NAU	Pilotfish	<i>Naucrates ductor</i>	Secondary	Minor	N/A	A, E	YES
HTL	Slender suckerfish	<i>Phtheichthys lineatus</i>	Secondary	Minor	N/A	A	YES
REO	Shark sucker	<i>Remora remora</i>	Secondary	Minor	N/A	A, B, C	YES
OIL	Oilfish	<i>Ruvettus pretiosus</i>	Secondary	Minor	N/A	A, B	YES
MAC	Atlantic mackerel	<i>Scomber scombrus</i>	Secondary	Minor	N/A	A	YES
YTL	Longfin yellowtail	<i>Seriola rivoliana</i>	Secondary	Minor	N/A	A, C, E	YES
GBA	Great barracuda	<i>Sphyrna barracuda</i>	Secondary	Minor	N/A	A, B, C	YES
USE	Cottonmouth	<i>Uraspis secunda</i>	Secondary	Minor	N/A	A, C	YES

jack							
Seabirds							
No interactions with seabirds recorded						A, B, C, E	
Turtles							
LKY	Kemp's ridley turtle	<i>Lepidochelys kempii</i>	ETP	N/A	IUCN (CR) CITES (Ap.I); CMS (Ap.I); Atlantic Turtles MOU; Ap. I CMS; Atlantic Turtles MOU	A, C, E	NO
LKV	Olive Ridley turtle	<i>Lepidochelys olivacea</i>	ETP	N/A	IUCN (VU) CITES (Ap.I); CMS (Ap. I); Atlantic Turtles MOU	C, E	NO
TTL	Loggerhead turtle	<i>Caretta caretta</i>	ETP	N/A	IUCN (VU) CITES (Ap.I); CMS (Ap. I); Atlantic Turtles MOU	A, C, E	NO
TUG	Green turtle	<i>Chelonia mydas</i>	ETP	N/A	IUCN (EN) CITES (Ap.I); CMS (Ap. I); Atlantic Turtles MOU	A, C, E	NO
TTH	Hawksbill turtle	<i>Eretmochelys imbricata</i>	ETP	N/A	IUCN (CR) CITES (Ap.I); CMS (Ap. I); Atlantic Turtles MOU	A, C, E	NO
DKK	Leatherback Turtle	<i>Dermochelys coriacea</i>	ETP	N/A	IUCN (VU) CITES (Ap.I); CMS (Ap. I); Atlantic Turtles MOU	A, C, E	NO
Cetaceans							
DRR	Risso's dolphin	<i>Grampus griseus</i>	ETP	N/A	Western African Aquatic Mammals CMS MoU	E	NO
SHW	Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	ETP	N/A	Western African Aquatic Mammals CMS MoU	C	NO
PIW	Long-finned pilot whale	<i>Globicephala melas</i>	ETP	N/A	Western African Aquatic Mammals CMS MoU	C	NO
BRW	Bryde's whale	<i>Balaenoptera edeni</i>	ETP	N/A	CITES (Ap.I); CMS (Ap.I)	A, C, E	NO
FIW	Fin whale	<i>Balaenoptera physalis</i>	ETP	N/A	CITES (Ap.I); CMS (Ap.I)	A, C, E	NO
HUW	Humpback whale	<i>Megaptera novaeangliae</i>	ETP	N/A	CITES (Ap.I); CMS (Ap.I)	A, C, E	NO
MIW	Minke whale	<i>Balaenoptera acutorostrata</i>	ETP	N/A	CITES (Ap.I)	A	NO
SIW	Sei whale	<i>Balaenoptera borealis</i>	ETP	N/A	IUCN (EN) CITES (Ap.I)	A	NO
SPW	Sperm whale	<i>Physeter macrocephalus</i>	ETP	N/A	IUCN (VU) CITES (Ap.I); CMS (Ap.I)	C	NO

3.4.2. Primary species impacted by the UoC

The difference between 'Primary' and 'Secondary' species lies on whether management is based on biological reference points (primary) or not (secondary). On the other hand, the difference between

'Main' and 'Minor' lies on the proportion (in weight) that a particular species represents in the catch. According to FCR SA3.4.2, the designated weight threshold to differentiate between 'Main' and 'Minor' is 5% (or 2% in the case of less resilient species): species accounting $\geq 5\%$ in weight of the total catch are considered as 'Main', while species falling below that threshold are classified as 'Minor' (unless the total catch of the UoA is exceptionally large, such that even small proportions of a P2 species significantly impact the affected stock, FCR SA3.4.4).

Among all the species listed in **Table 3-17**, only in the case of 3 tunas species (skipjack tuna, bigeye tuna and albacore), 4 billfishes (swordfish, Atlantic sailfish, blue marlin and Atlantic white marlin) and 2 sharks (blue shark and shortfin mako shark) fishery management is based on biological reference points as a result of stock assessments performed by the SCRSS.

According to logbook data (**Table 3-6**) both skipjack and bigeye tuna account for more than 5% of the total volume of the UoC catches. Therefore, these two species are the only species classified as 'main' subcomponents. The remaining 5 species will be assessed as 'Minor' subcomponents.

- 2 subcomponent as main primary: skipjack (East Atlantic stock) and bigeye tuna
- 9 subcomponents as minor primary: albacore (Stocks N & S), swordfish (Stocks N & S), Atlantic sailfish, blue marlin, Atlantic white marlin and blue shark (stocks N & S).

Detailed information on the main components (Bigeye and Skipjack tuna is provided below).

Bigeye background (This information was extracted from ICCAT, 2017)

Biology

Bigeye tuna are distributed throughout the Atlantic Ocean between 50°N and 45°S, but not in the Mediterranean Sea. This species swims at deeper depths than other tropical tuna species and exhibits extensive vertical movements. Bigeye tuna exhibit clear diurnal patterns: they are found much deeper during the daytime than at night. Spawning takes place in tropical waters when the environment is favourable. From nursery areas in tropical waters, juvenile fish tend to diffuse into temperate waters as they grow. Catch information from surface gears indicate that the Gulf of Guinea is a major nursery ground for this species. Dietary habits of bigeye tuna are varied and prey organisms like fish, molluscs, and crustaceans are found in their stomach contents. Bigeye tuna exhibit relatively fast growth: about 105 cm fork length at age three, 140 cm at age five and 163 cm at age seven. Bigeye tuna over 200 cm are relatively rare. Bigeye tuna become mature around 100 cm at between 3 and 4 years old. Young fish form schools mixed with other tunas such as yellowfin tuna and skipjack. These schools are often associated with drifting objects, whale sharks and sea mounts. This association weakens as bigeye tuna grow. Bigeye tuna are assumed to be an Atlantic-wide single stock, however, the possibility of other scenarios, such as north and south stocks, should not be disregarded.

Catches

The stock has been exploited by three major gears (longline, bait boat and purse seine fisheries) and by many countries throughout its range and ICCAT has detailed data on the fishery for this stock since the 1950s. Scientific sampling at landing ports for purse seine vessels from the EU and associated fleets has been conducted since 1980 to estimate bigeye tuna catches (**Figure 3-12**). The size of fish caught varies among fisheries: medium to large fish for the longline fishery, small to large for the directed bait boat fishery, and small for other bait boat and for purse seine fisheries.

Bigeye tuna is now a primary target species for most of the longline and some bait boat fisheries, but this species has always been of secondary importance for the other surface fisheries. In the purse seine fishery, unlike yellowfin tuna, bigeye tuna are mostly caught while fishing on floating objects such as logs or manmade fish aggregating devices (FADs). During 2012-2016, landings of bigeye in weight caught by longline fleets represent 47%, while purse seine fleets represent 37% and bait boat and other surface fleets represent 15% of the total.

The total annual catch (**Figure 3-12**) increased up to the mid-1970s reaching 60,000 t and fluctuated over the next 15 years. In 1992, catch reached 100,000 t and continued to increase, reaching an historic high of about 135,000 t in 1994. Since then, reported and estimated catch continuously declined and fell to 58,875 t 2006. From 2006 catches have increased and fluctuated between around 75,000 t and 80,000 t, with the exception of 2008 (67,720 t). The preliminary catch estimated for 2016 is 72,375 t, a reduction of 9% from 2015 levels (79,861 t).

After the historic high catch in 1994, all major fisheries exhibited a decline in catch while the relative share by each fishery in total catch remained relatively constant until 2008. These reductions in catch were related to declines in fishing fleet size (longline) as well as decline in CPUE (longline and bait boat). Although the general trend of decreasing catches continued for longline and bait boat, the purse seiner catches increased, as did the relative contribution of purse seine in the total catches in the period 2010-2016. The number of active purse seiners declined by more than half from 1994 until 2006, but then increased as some vessels returned from the Indian Ocean to the Atlantic and since 2014, the number of purse seine vessels has remained stable. While the number of purse seiners operating in 2010-2014 was stable purse seine carrying capacity during the same period showed an increasing trend.

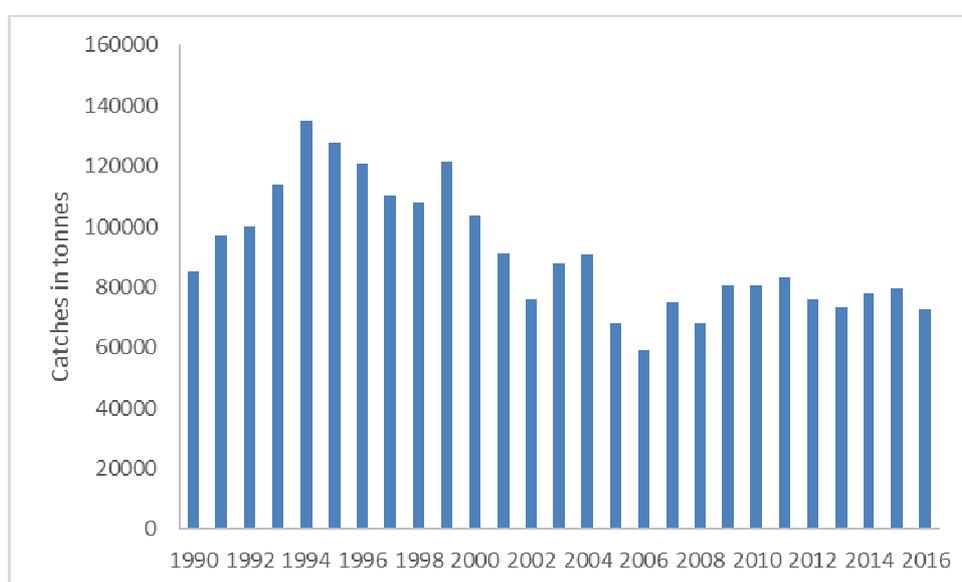


Figure 3-12. Bigeye estimated and reported catches for all the Atlantic stock (t). The value for 2016 represents preliminary estimates because some countries have yet to provide data for this year or are under revision.

Significant catches of small bigeye tuna continue to be channelled to local West African markets, predominantly in Abidjan, and sold as “faux poisson” in ways that make their monitoring and official reporting challenging. Monitoring of such catches has recently progressed through a coordinated approach that allows ICCAT to properly account for these catches and thus increase the quality of the basic catch and size data available for assessments. Currently those catches are included for the main purse seine fleet in the catch data used for the assessment up to 2014. No update estimates of faux poisson are available for the 2015-2016 period.

Mean average weight of bigeye tuna decreased prior to 1993 but has remained relatively stable at around 10 kg for the last decade. This mean weight, however, is quite different for the different fishing gears in recent years, around 62 kg for longliners, around an average of 18 kg for bait boats (with different mean weight for different fleet segments: 9 kg for Dakar bait boat and 3 kg for Tema bait boat), and 4 kg for purse seiners. In the last ten years, several longline fleets have shown increases in the mean weight of bigeye tuna caught, with the average longline-caught fish increasing from 40 kg to 60 kg between 1999 and 2008. During the same period, purse seine-caught bigeye tuna had average weights between 3 kg and 4 kg. Average weight of bigeye tuna caught in free schools is more than twice the average weight of those caught around FADs.

Fishing indices

A number of standardized indices of abundance were developed for selected fleets for which data were available at greater spatial and/or temporal resolution for the assessment. These indices represented data from five different fleets, four longline fleets and one bait boat fleet which were used in different stock assessment methods (**Figure 3-13**).

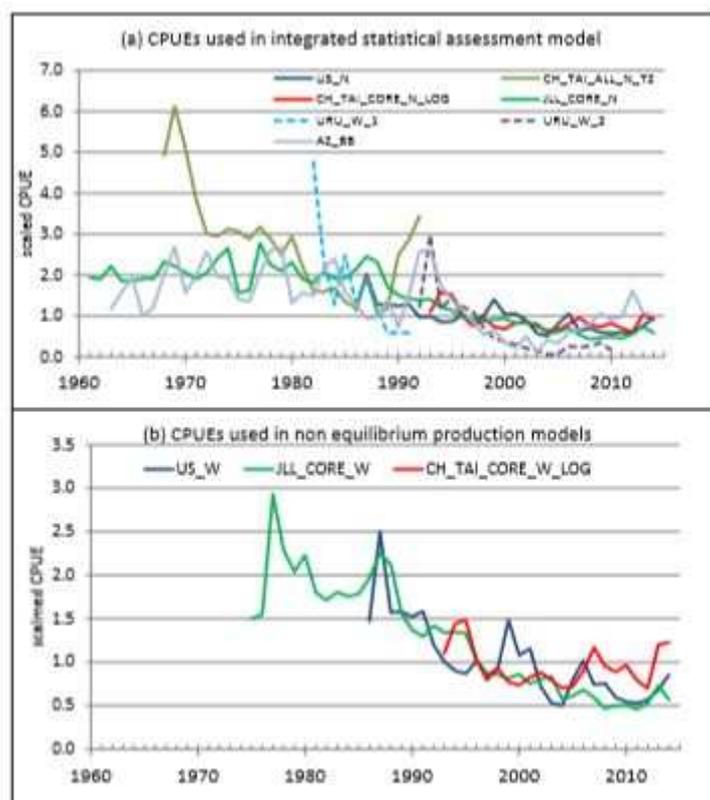


Figure 3-13. Indices used in the integrated statistical assessment model. Note that these are the annual means but the indices were calculated by area and

Stock assessment

Stock status evaluations for Atlantic bigeye tuna used several modelling approaches, ranging from non-equilibrium production models to integrated statistical assessment models. The results of different model formulations considered to be plausible representations of the stock dynamics were used to characterize stock status and the uncertainties in the status evaluations. In 2015, results from a non-equilibrium production model and an integrated statistical assessment model, which can account for temporal changes in selectivity, were used to provide the status of the resource. Multiple runs of each model were included in the results, using alternative assumptions in order to better reflect the uncertainties in the assessment. The non-equilibrium production model results included 3 different runs, which used different individual CPUE indices. These CPUEs were based on longline indices that characterize the adult component of the stock, while the production model dynamics are based on exploitable biomass. The integrated statistical assessment model results included 12 different runs, reflecting different assumptions regarding growth, the influence of spawning biomass on recruitment, and confidence in available size data. Because the results of both non-equilibrium production model and integrated assessment model were considered to represent plausible alternative hypotheses of stock status, they were given equal weight in determining the state of the stock.

The stock biomass estimated from the three non-equilibrium production model runs declines from the beginning of the time series in the 1950s (**Figure 3-25**). The decline in biomass corresponds with increasing fishing mortality including a sharp increase of fishing mortality and catch in the 1990s and a peak of fishing mortality by the end of the 1990s. From the late 1990s, the biomass and fishing

mortality trajectories of the 3 scenarios were different. While biomass increased and fishing mortality decreased in one of the runs using the Chinese Taipei CPUE; biomass continued to decrease at a lower rate in the other runs and fishing mortality showed a general increasing trend in one run (except for the last three years when F decreased) and was somewhat stable in the last run. The three runs show similar trajectories of increasing F and decreasing B towards the red area of the Kobe plot ($F > F_{MSY}$ and $B < B_{MSY}$) until the end of the 1990s, but 2 out of 3 runs estimate that on average the stock still remains in the red area since 2000; while the third estimates a recovery towards the green area since the mid-2000s (**Figure 3-15**). The results based on the three scenarios suggest that the stocks status in recent years varied between scenarios (B_{2014}/B_{MSY} ratio is from 0.554 to 1.225 and F_{2014}/F_{MSY} ratio is from 0.576 to 1.436 (**Figure 3-15**).

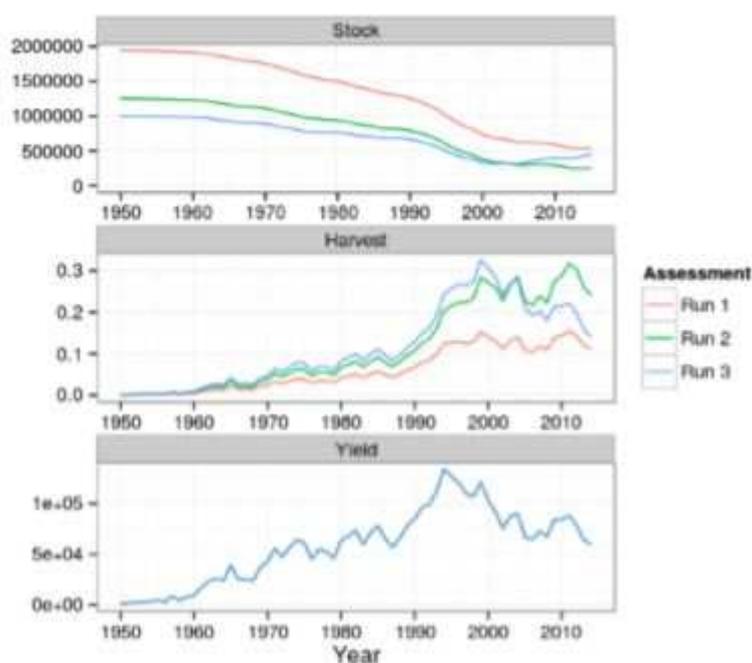


Figure 3-14. Trajectories of biomass, fishing mortality and yield from different ASPIC scenarios. Run 1: using USA LL CPUE; Run 2: using Japanese LL CPUE; and Run 3: using Chinese Taipei LL CPUE.

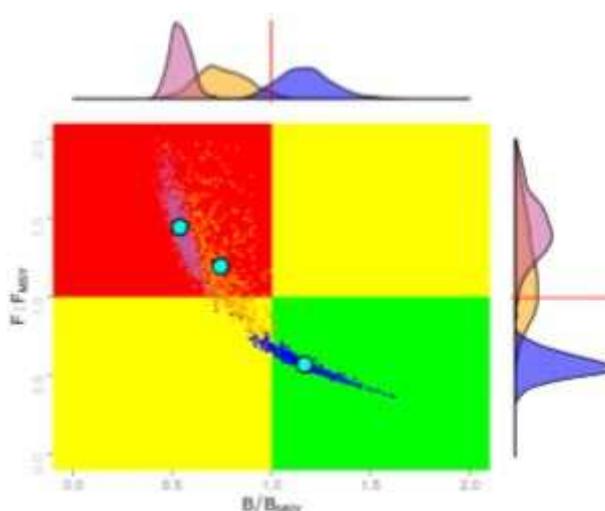


Figure 3-15. ASPIC: Current status (2014) of bigeye tuna based on ASPIC. Graph combines results for the 3 runs considered. The clouds of points depict the bootstrap estimates of uncertainty for the most recent year (purple = Japan LL run, brown = US LL run, blue= Chinese Taipei LL run). The median point estimate for each model's results are shown in open (cyan) circles. The marginal density plots shown above and to the right of the main graph reflect the frequency distribution of the bootstrap estimates of each model with respect to relative biomass (top) and

The SS3 model results indicate that fishing mortality increased steadily since the beginning of the fishery, rapidly increased by the end of the 1990s, fluctuating around the level corresponding to F_{MSY} in the 2000s, then increased sharply at the end of the 2000s where $F > F_{MSY}$ in 2011, and decreased in the latest three years. However, it remained at levels higher than F_{MSY} in 7 out of 12 scenarios in 2014 (**Figure 3-16**). With regards to biomass, it decreased constantly since the beginning of the time series and fell below and remained below B_{MSY} levels since 2010. The results based on the twelve cases studied suggest that the stocks status in recent years varied between cases (B_{2014}/B_{MSY} ratio is from 0.435 to 0.917 and F_{2014}/F_{MSY} ratio is from 0.776 to 1.635 (**Figure 3-17**). In the combined phase plot of equally weighted 12 SS3 scenarios, taking into account the uncertainty around the point estimates from all scenarios, there was an estimated 67% chance that the stock is being overfished and overfishing is occurring in 2014.

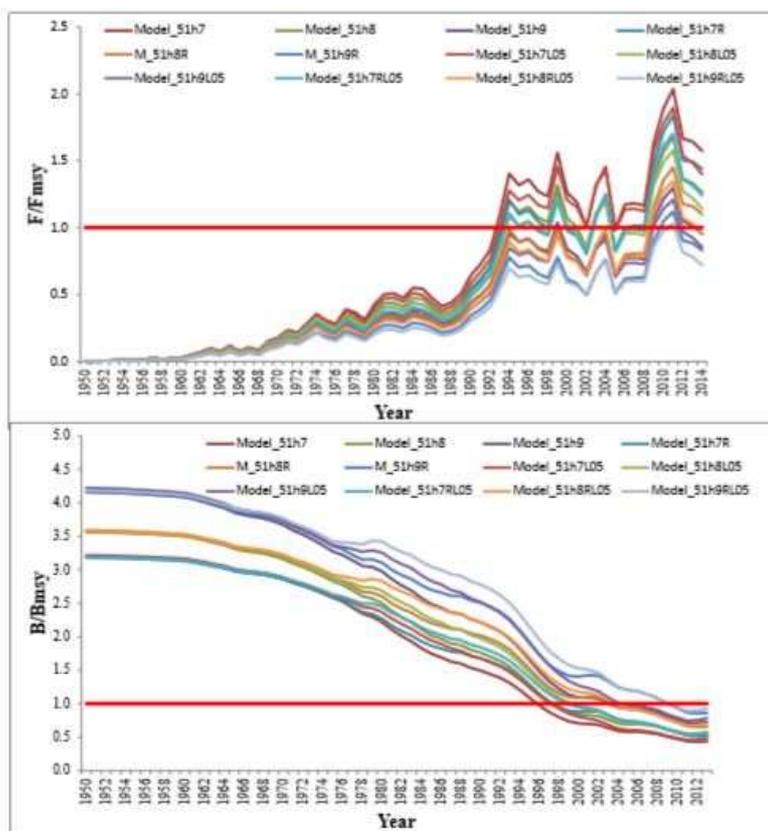


Figure 3-16. Estimated Spawning Stock Biomass and fishing mortality relative to MSY benchmark (B/B_{MSY} and F/F_{MSY}) both based on 2014 selectivity patterns for the 12 SS3 selected runs.

The current MSY may be below what was achieved in past decades because overall selectivity has shifted to smaller fish; the impact of this change in selectivity on estimates of MSY is clearly seen in the results from integrated statistical assessment models (BET-Figure 10). While the potential MSY has decreased over time the spawning stock biomass required to produce this MSY has increased.

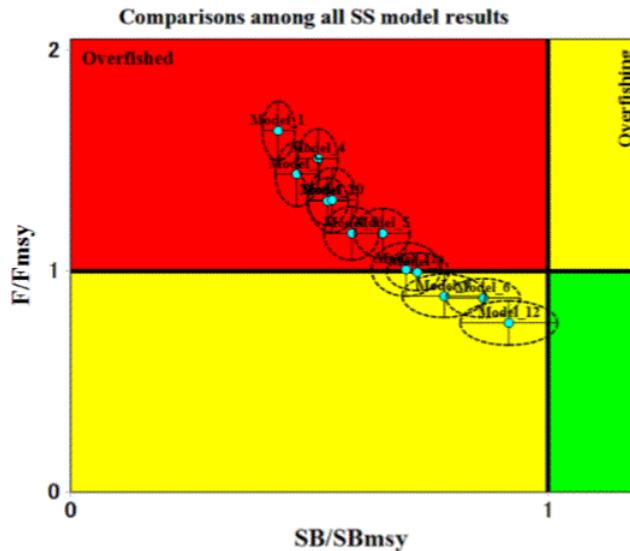


Figure 3-17. Kobe Phase Plot for SS3: for all runs separately.

Most of the integrated statistical assessment model runs give a similar view compared to the non-equilibrium production model runs regarding the historical evolution of the relative patterns in biomass and fishing mortality. Both assessment models suggest that biomass decreased throughout the period investigated, with the exception of one run of the non-equilibrium production model where a recovery is observed since 2005. For fishing mortality, both assessment models show that F increased sharply by the late 1990s, then fluctuated to reach a similar level of the late 1990s in 2004/2005 and increased again in 2011 to decrease the last three years. **Figure 3-18** shows a combined Kobe phase plot of both assessment models, which formulates the basis of the management recommendation. The combined plot was developed by giving equal weighting between non-equilibrium production model and integrated statistical assessment model results. Within each model type equal weighting was given to each run. There was an estimated 70% chance that the stock was being overfished and overfishing was occurring in 2014.

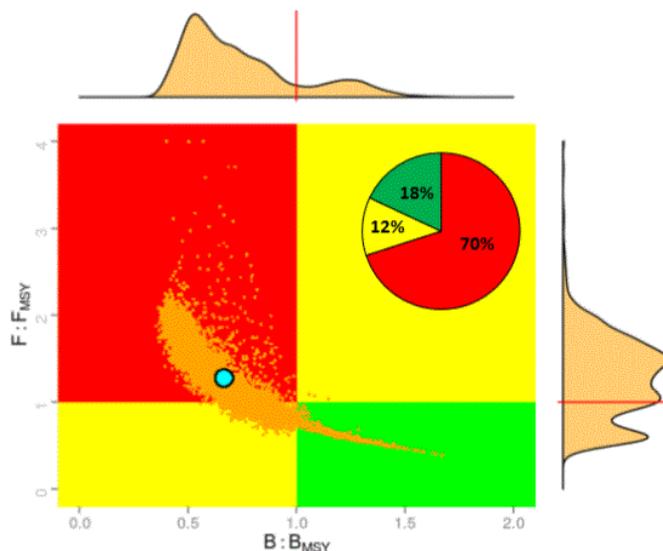


Figure 3-18. Combined Kobe phase plot of non-equilibrium production model and integrated stock assessment model. The combined plot was developed by giving equal weighting between production models and in

Although catches from the period 2012 were lower than the adopted TAC the status of the stock worsened. The proportion of small age 0 and 1 bigeye has shown a continuous increase since the beginning of the time series which may have affected the prospect of recovery of the population and worsened the status of the stock in 2015. The relative contribution of purse seine gear to the total catch has increased by 50% in the period 2009-2014 from the period 2000-2008.

Uncertainties

The Committee notes, as it did in previous assessments, that there is considerable uncertainty as well as potential bias in the assessment of stock status and productivity for bigeye tuna. There are many sources of uncertainty including which method represents best the dynamics of the stock, which method is supported more by the available data, which relative abundance indices are appropriate to be used in the assessment, and what precision is associated with the measurement/calculation of each of the model inputs. In general, data availability has improved since 2010 but there is still a lack of information regarding detailed fishing effort and catch-at-size data from certain fleets.

Projections

It was noted in 2015 that the modelled probabilities of the stock achieving levels consistent with the Convention objective at the end of the projected time period in 2028 was 29% for a future constant catch at the TAC level of 85,000 t established in Rec. 14-01, and 41% probability at catch levels of 70,000 t. Higher probabilities of rebuilding require longer timeframes and/or larger reduction of current catches. For instance, 49% probability of rebuilding would be achieved by 2028 with a constant catch of 65,000 t and 58% of probability with catches of 60,000 t, (**Table 3-18**). It needs to be noted that projections made by the Committee assume that future constant catches represent the total removals from the stock, and not just the reported catches and the current selectivity pattern is maintained. ICCAT established a TAC of 85,000 t for 2010 onwards (Rec. 09-01, Rec. 11-01 and Rec. 14-01) and reduced the TAC to 65,000 t for 2016 onwards (Rec. 15-01 and Rec. 16-01). Note that because this TAC does not affect all countries that can catch bigeye tuna, in theory the total catch removed from the stock could exceed the TAC which will worsen the prospect of stock rebuilding.

Table 3-18. Probability of bigeye tuna not being overfished or in an overfished state.

Probability of being in the green zone ($B > B_{MSY}$ and $F < F_{MSY}$)														
Catch (000 t)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
0	17	17	21	33	57	74	85	92	95	97	98	98	99	99
40	17	17	18	22	31	40	51	60	67	73	78	81	84	87
45	17	17	18	21	29	37	45	53	60	66	71	76	79	81
50	17	17	18	20	27	34	41	48	53	59	64	69	72	76
55	17	17	18	20	25	31	37	42	47	51	56	60	64	68
60	17	17	17	19	23	28	33	37	40	44	48	52	55	58
65	17	17	17	18	22	26	30	33	36	39	42	44	46	49
70	17	17	17	18	21	24	26	30	31	34	36	38	39	41
75	17	17	17	18	19	22	24	26	27	29	31	32	33	35
80	17	16	16	16	18	19	21	22	23	25	26	27	28	29
85	17	16	16	16	18	18	20	21	21	22	25	24	26	29
90	17	15	15	15	16	16	17	19	19	19	19	18	18	19
95	17	14	14	13	13	12	12	12	12	11	10	10	10	8
100	17	12	11	10	8	7	6	6	5	4	6	5	4	3

Effect of current regulations

During the period 2005-2008 an overall TAC was set at 90,000 t. The TAC was later lowered (Rec. 09-01 and later modified by Rec. 14-01) to 85,000 t. Estimates of reported catch for 2009-2015 have been always lower than 85,000 t. The TAC was again reduced to 65,000 t in Recommendation 15-01 which enters into force in 2016. Projections indicated that catches at the current TAC level (65,000 t) would have 49% chances of achieving Convention objectives by 2028 (Table 1). This probability may be improved by the additional measures (i.e. FAD moratorium) agreed by the Commission. However, 2016 catches (72,375 t) exceeded the TAC of 65,000 t by 11%. Therefore, if future catches are maintained at the level of 2016, the probability of achieving Convention objectives by 2028 ($B > B_{MSY}$, $F < F_{MSY}$) is expected to decrease to around 38 % (**Table 3-18**). **Table 3-19** summarises management measures and main stock assessment results for the bigeye tuna.

Table 3-19. Management measures and stock status for Atlantic bigeye tuna.

ATLANTIC BIGEYE TUNA SUMMARY	
Maximum Sustainable Yield	78,824 t (67,725-85,009 t) ¹
Current (2016) Yield	72,375 t ²
Relative Biomass (B ₂₀₁₄ /B _{MSY})	0.67 (0.48-1.20) ¹
Relative Fishing Mortality (F ₂₀₁₄ /F _{MSY})	1.28 (0.62-1.85) ¹
Stock Status (2014)	Overfished: Yes Overfishing: Yes
Conservation & management measures in effect:	[Rec. 16-01] <ul style="list-style-type: none"> - Total allowable catch for 2016-2018 is set at 65,000 t for Contracting Parties and Cooperating non-Contracting Parties, Entities or Fishing Entities. - Be restricted to the number of their vessels notified to ICCAT in 2005 as fishing for bigeye tuna. - Specific limits of number of longline boats; China (65), Chinese Taipei (75), Philippines (5), Korea (14), EU (269) and Japan (231). - Specific limits of number of purse seine boats; EU (34) and Ghana (17). - No fishing with natural or artificial floating objects during January and February in the area encompassed by the African coast, 20° W, 5°N and 4°S. - No more than 500 FADs active at any time by vessel. - Use of non-entangling FADs.

¹ Combined results of non-equilibrium production model and statistical integrated assessment models. Median and 10 and 90% percentile in brackets.

² Reports for 2016 reflect most recent data but should be considered provisional.

Eastern Skipjack tuna (extracted from ICCAT, 2017)

Biological background

Skipjack tuna is a gregarious species that is found in schools in the tropical and subtropical waters of the three oceans. Skipjack is the predominant species found under fish aggregation devices (FADs) where it is caught in association with juvenile yellowfin tuna, bigeye tuna and with other species of epipelagic fauna. Skipjack is a species showing an early maturity (around first year of life), high fecundity and spawns opportunistically throughout the year in warm waters above 25° C. Skipjack is also thought to be a faster-maturing and shorter lived species than yellowfin tuna. Skipjack has a 2-stanza growth, with fast growth during the pre-recruitment phase (from birth to 40cm) and an average growth for larger individuals between equatorial and temperate growth rates. Different natural mortality equations were used for fish sized below and above 15cm.

Stock structure and mixing:

Because of limited movements observed from tagging data, there is a very low probability of mixing between skipjack distributed in the North and South Atlantic (ICCAT 2014).

Catches:

Following the historic record in 2013 (255,730 t), the total catches of skipjack throughout the Atlantic Ocean (including catches of "faux poisson" landed in Côte d'Ivoire) remain high, reaching 245,933 t in 2016 (**Figure 3-19**). This represents a very sharp rise compared to the average catches of the five years prior to 2010 (155,157 t). It is possible, however, that the catches of a segment of the

Ghanaian purse seine fleet, transhipped on carriers, have escaped the fishery statistics collection process before 2011, but this has been corrected for by now. The numerous changes that have occurred in the skipjack fishery since the early 1990s (such as the progressive use of FADs and the increase of the fishing area towards the west and north) have brought about an increase in skipjack catchability and in the biomass proportion that is exploited. SKJ catches have steadily increased in the Eastern Atlantic since the early sixties, and especially during recent years (2010-2013). The increased fishing pressure due to FADs and due to the increasing SKJ prices over a sustained period could be indicative of higher catches being sustainable. FAD fisheries are catching the majority of total catches in the Eastern Atlantic (56% of total SKJ catches during the period 2009-2013).

The average rate of discards of skipjack on FADs by European purse seiners operating in the eastern Atlantic has been estimated based on board observer programmes to be 42 kg per t of skipjack landed. Furthermore, the amount of small skipjack (average size 37 cm FL) landed in the local market of Abidjan in Côte d'Ivoire as "faux poisson" has been estimated at 235 kg per t of skipjack landed (i.e. an average of 6,641 t/year between 1988 and 2007 for the European or associated purse seiners). However, the latest estimates indicate values close to 10,000 t/year between 2005 and 2014 for all purse seiners operating in the eastern Atlantic (skipjack representing around 30% of the total "faux poisson": the species composition in 2014 has not been taken into account because it seems less accurate than in previous years). These estimates are incorporated into the reported historical catches for the EU purse seiners since 1982 (Figure 3-20), as well as in the catch-at-size matrix. "Faux poisson" estimates for 2015 and 2016 are not yet available. Figure 2 illustrates the catches for the bait boat and purse seine fishery from 1950 to 2016 and it can be seen that purse seine landings are much higher than those from bait boats, especially since FAD's have been introduced.

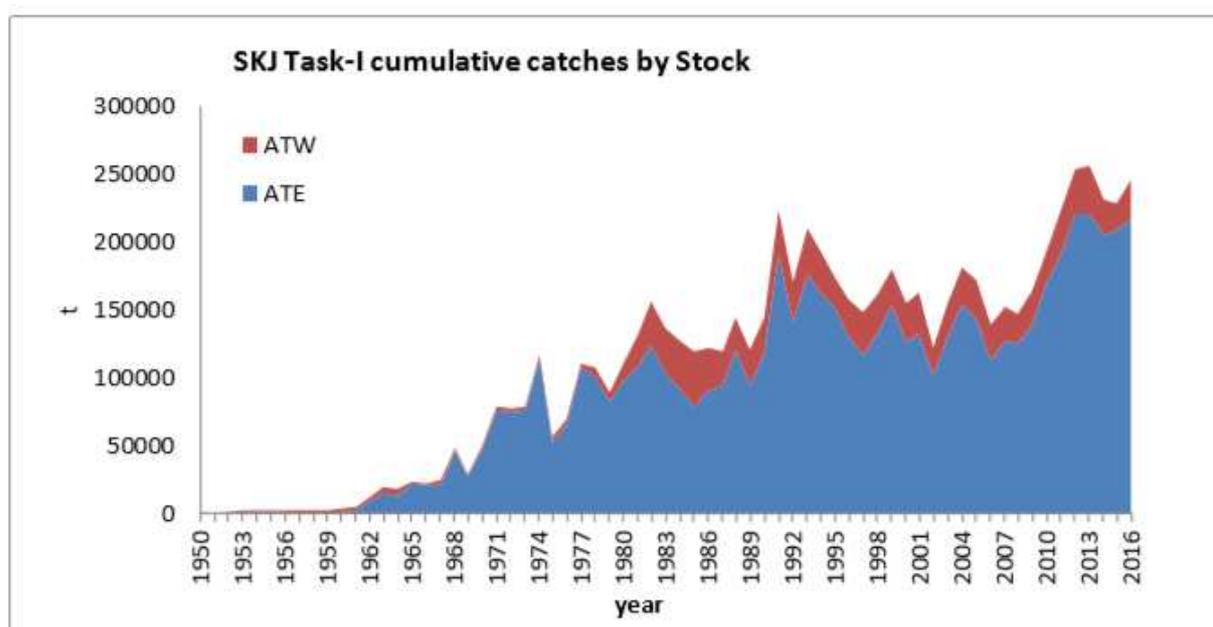


Figure 3-19. Total skipjack catches (t) in the Atlantic and by stock (East and West) between 1950 and 2016. Skipjack estimates in the faux poissons landed in Côte d'Ivoire were included in the skipjack trade catches in the eastern Atlantic except for 2016. It is possible that skipjack catches taken in the eastern Atlantic in recent years were not reported or were under-estimated in the logbook correction of species composition based on multi-species sampling carried out in ports. The 2016 figure is still preliminary.

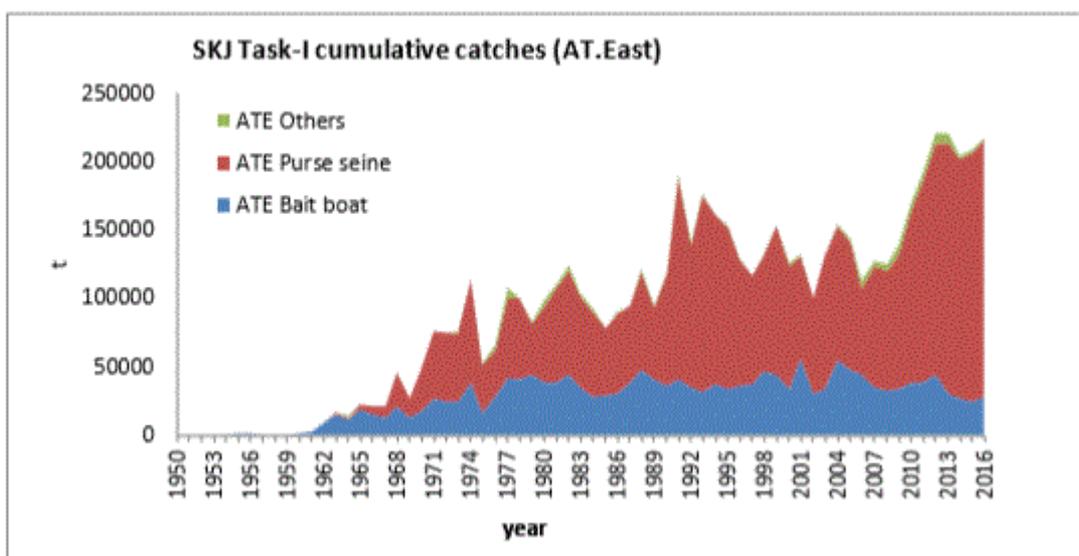


Figure 3-20. Skipjack catches in the eastern Atlantic, by gear (1950-2016), after correction of Ghana’s data by species from 1996 to 2014.

Fishing dynamics

It is difficult to discriminate a fishing effort between free schools (composed of large yellowfin tunas) and FAD fishing (targeting skipjack) in the East Atlantic because the fishing strategies can change from one year to the next and in addition, the sea time devoted to activities on FADs and the assistance provided by supply vessels are difficult to quantify. It is recognized that the use of data series on the yearly progression of the sale prices of tropical species by commercial category enables identification of the years when skipjack is most targeted by the purse seiners (which seems to be the case in the past few years). Nominal purse seine effort, expressed in terms of carrying capacity, has decreased regularly since the mid-1990s up to 2006. However, after this date, several European Union purse seiners have transferred their effort to the East Atlantic, due to piracy in the Indian Ocean, and a fleet of new purse seiners have started operating from Tema (Ghana), whose catches are probably underestimated. All this has contributed to the growth in carrying capacity of the purse seiners, which is gradually nearing the level observed in the early 1990s. The number of purse seiners follows this trend but seems to have remained steady since 2010; the nominal effort of bait boats has remained stable for over 20 years. By 2010, overall carrying capacity of the purse seine fleet had increased significantly, to about the same level as in the 1990s, and has increased by nearly 50% since. This can clearly be seen by the increased catches depicted in **(Figure 3-20)**. FAD based fishing has accelerated even more rapidly than free school fishing.

It is recognised that the increase in fishing power linked to the introduction of technological innovation on board the vessels as well as to the development of fishing using floating objects has resulted in an increase in the efficiency of the various fleets, since the early 1980s. In order to take into account the effect of the technological changes in skipjack catchability, an annual yearly growth of 3% is generally assumed as the working hypothesis, although an analysis carried out fixing the MSY and K at the values estimated in the previous stock assessment would suggest an increase in catchability between 1 and 13% per year. Moreover, the estimates on growth in bigeye catchability, whose juveniles are also captured using FADs, would indeed indicate a value of 2.5% per year before 1991 and 6 to 8% thereafter. However, it is not known whether these estimates only reflect technological changes, or the availability of fish as well, resulting from the expansion of the surface area exploited over the years, reaching its historic high in 2013 and which corresponds to the expansion of the fishery toward the West Central Atlantic or more recently to the level of the North and South latitudes. **Figure 3-21** illustrates the distribution of skipjack catches in the Atlantic for bait boat between 1950 and 2014 and for purse seiners by fishing mode (free schools vs. FADs) between 1991 and 2014. Also, the skipjack catches made by European and associated purse seiners (about

75% of the total catches) between 2000 and 2006 and between 2007 and 2014 showing the withdrawal from the Senegal fishing zone on free schools, due to non-renewal of the fishing agreements in 2006, and the appearance of a fishing area under FADs in 2012 North of 15°N latitude is reflected in **Figure 3-21**.

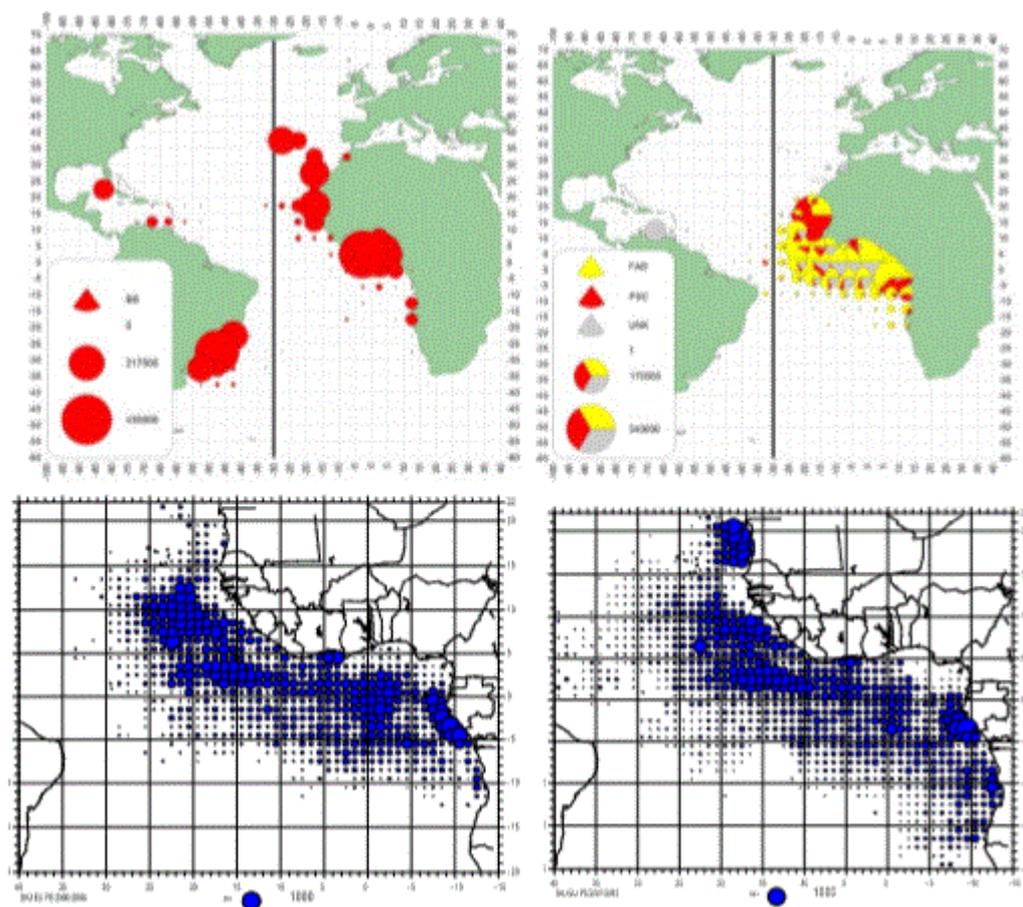


Figure 3-21. Distribution of skipjack catches in the Atlantic for bait boat (upper left panel) between 1950 and 2014 and for purse seiners (upper right panel) by fishing mode (free schools vs. FADs. UNK is considered to be mainly free schools in the Western and mainly FAD in the Eastern Atlantic) between 1991 and 2014. Skipjack catches made by European and associated purse seiners (about 75% of the total catches) between 2000 and 2006 (lower left panel) and between 2007 and 2014 (lower right panel) showing the withdrawal from the Senegal fishing zone on free schools, due to non-renewal of the fishing agreements in 2006, and the appearance of a fishing area under FADs in 2012 North of 15°N latitude.

Stock assessment

Skipjack tuna has been considered a difficult species to assess, mainly due to the fact that the annual recruitment is a large proportion of total biomass and that it is difficult to characterize the effect of fishing on the population with standard fisheries data and stock assessment methods. The uncertainties in the stock structure and the difficulties to estimate PS CPUE that could be considered as being proportional to SKJ biomass, are additional to these basic uncertainties.

This structural problem is mainly due to the development of fish-aggregating devices (FADs) that are playing a major role in the current SKJ fisheries, when the multiple changes in these FAD fisheries remain poorly understood. Unfortunately, SKJ catches by LL fisheries are so low that the catch rates thought not to be particularly reflective of SKJ abundance, as is the case with all other tuna stocks (ICCAT 2014). Two standardized fishery indices from the EU-purse seine fishery: an index which accounts for skipjack caught in free schools off the coast of Senegal up to 2006 and the second index which characterises fish captured off FADs and in free schools in the equatorial area were developed (**Figure 3-22**). The increase in CPUE of the European purse seiners in the late 1990s is partly the consequence of the increase in the catches of positive sets under FADS. Furthermore, the regular

increase in the skipjack yields of the bait boats based in Senegal may only be the result of an increase in catchability linked to the adoption of the so-called “bait boat associated school” fishing towards the mid-1980s. No marked trend has been observed for the Canary Islands bait boats, nor for the peripheral fishery of the Azorean bait boat fishery.

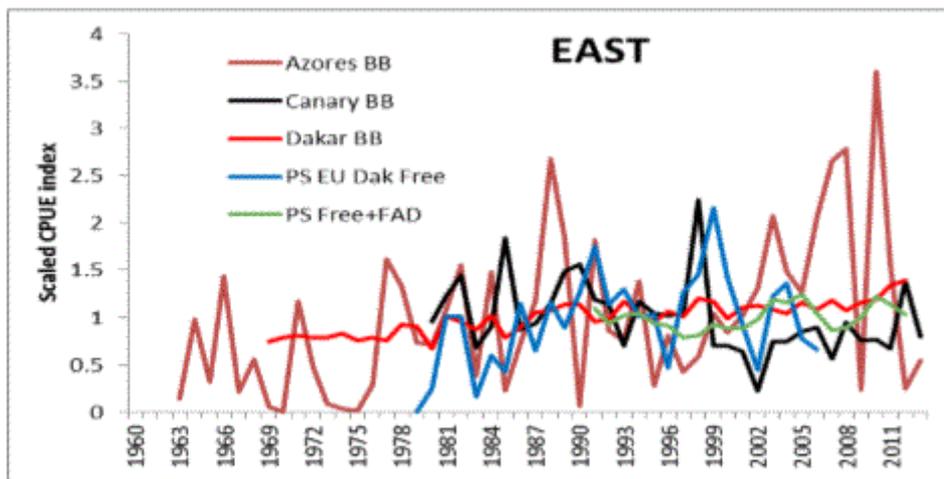


Figure 3-22. Relative abundance indices for the Eastern skipjack stock. Each index has been adjusted to its own average level given that to resolve problems regarding scaling, the indices for purse seine have been adjusted to the same level as the Azorean bait boat series.

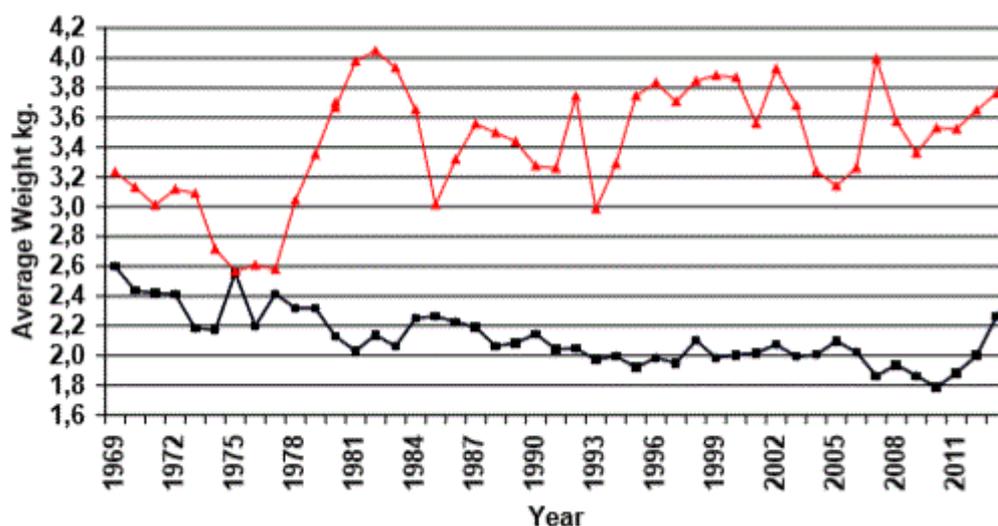


Figure 3-23. Changes in the average weight of skipjack in the eastern (black) and western Atlantic (red).

Regardless of the model used: 2 surplus biomass production models (one non-equilibrium conventional model, and one Bayesian model), a model based only on catch and a mortality estimation model based on the average sizes of fish captured, it was not possible to provide a reliable estimate of the maximum sustainable yield and therefore nor provide advice on the state of the eastern stock. This applies in the Bayesian case, (1) after testing different working hypotheses on the a priori distribution of the input parameters of the surplus production model (i.e. the growth rate and the carrying capacity), and on the impact of the growth of the catchability coefficient on the CPUE of each fleet, and (2) after performing a retrospective analysis in the case of the catch-only based model. The absence of definition of a fishing effort associated with FADs for the purse seiners, the difficulty of taking into account changes in catchability, the lack of marked contrast in the datasets despite the historical development of the fishing pressure and the fact that the catches and the CPUEs have increased in parallel in recent years are constraints for effective use of the classic stock assessment methods. It is difficult to estimate the MSY in conditions of continuous growth of

catches without having reliable indicators on the response of the stock to these increases. These indicators may be improved by including CPUE series, fishing mortality estimates from tagging programmes or other indicators on the exploitation of this species.

Even a precautionary diagnosis on the state of the stock in the absence of quantification by an adequate approach, indicates no evidence of a fall in yield, or in the average weight of individuals captured (**Figure 3-23**). The estimated value of the MSY, according to the catch-only assessment model, has tended to increase in recent years but at a growth rate that is lower than that observed for the catches for the same period. However, according to this model, although it is unlikely that the eastern skipjack stock is overexploited, current catches could be at, even above, the MSY.

The most recent assessment of the stock of skipjack in the East Atlantic was done in 2014, using data until 2013. Two alternative models were used to analyse the Eastern Atlantic skipjack stock; a catch-only model and a Bayesian Surplus Production (BSP) model. The results of the Bayesian surplus production models show that the values of the posterior distribution mean for the B_{cur}/B_{MSY} can be in the range of 1.55 to 1.79 for the five different model scenarios and the F_{cur}/F_{MSY} can be from 0.22 to 0.49. Even, in the light of the clear uncertainties in the assessments, it is very likely that the Eastern Atlantic Skipjack stock is not overfished, nor does overfishing take place (ICCAT 2014).

Even if not much confidence is being put into the Production model results (**Figure 3-24**), it can reliably be said that no indicator indicates that the stock is overfished, as all the estimates point to a lightly exploited stock. Hence, the high recent landings, even if above MSY, are unlikely to reduce the stock below B_{MSY} for several years, at which time the response of landings and CPUE indicators to several years of high landings could be re-evaluated (ICCAT 2014).

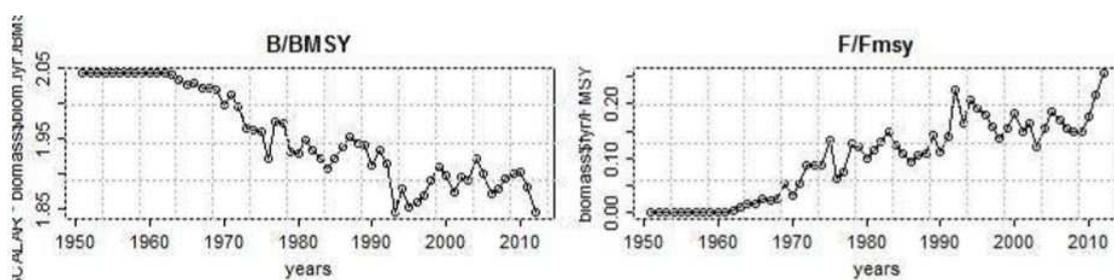


Figure 3-24. The current biomass relative to the Biomass at maximum sustainable yield and current fishing mortality relative to the fishing mortality as MSY until 2013.

Effect of current regulations

There is currently no specific regulation in place for skipjack tuna. Several time/area regulatory measures on banning fishing on FADs [Rec. 98-01, Rec. 99-01, Rec. 14-01 and Rec. 16-01] or on complete closure to surface fleets [Rec. 04-01] have however been implemented in the East Atlantic but the intended aim was to protect yellowfin and bigeye tuna juveniles.

The new Recommendation [Rec. 16-01] establishes a moratorium on FAD fishing in the area that extends from to 4°S and 5°N latitude and from African coast to 20°W longitude during the months of January and February, entered into force in 2016.

Management recommendations

Despite the absence of evidence that the eastern stock is overexploited, but considering (1) the lack of quantitative findings for the eastern stock assessment, and (2) pending the submission of additional data (including on FADs and on the ongoing AOTTP) which are necessary to improve the stock assessment it was recommended that the catch and effort levels do not exceed the level of 2012-2013 catch or effort. In addition, awareness should be stressed that by increasing harvests and fishing effort for skipjack can lead to involuntary consequences for other species that are caught in combination with skipjack in certain fisheries (particularly juveniles of yellowfin and bigeye*). For the West Atlantic, the Committee recommends that the catches should not be allowed to exceed the MSY. **Table 3-20** summarises management measures and main stock assessment results for the East Atlantic skipjack tuna.

Table 3-20. . Management measures and stock status for East Atlantic skipjack tuna.

	East Atlantic
Maximum Sustainable Yield (MSY)	Probably higher than previous estimates (143,000-170,000 t)
Current yield (2016 ¹)	217,363 t
Current Replacement Yield	Unknown
Relative Biomass (B_{2013}/B_{MSY})	Likely >1
Mortality due to fishing (F_{2013}/F_{MSY})	Likely <1
Stock Status	
Overfished:	Not likely
Overfishing:	Not likely
Management measures in force	Rec. 16-01 ²

3.4.3. Secondary species impacted by the UoC

Apart from the 8 species (11 stocks) classified as primary, all the other species listed in **Table 3-17** which are not considered as ETP species (see next section) were classified as ‘Secondary’ components. The resulting comprehensive list include a total of 40 species: 3 rays, 1 shark, 6 tunas and tuna-like species, 2 billfishes and 28 other bony fishes. According to all the different sources of information consulted, catches for all the above mentioned species would fall below the threshold to be considered ‘Main’ subcomponents. Therefore, all 40 secondary elements were classified as ‘Minor’ subcomponents for the purpose of this assessment.

3.4.4. ETP species impacted by the UoC

According to MSC requirements (SA 3.1.5), the team shall assign ETP species as follows:

- a. Species that are recognize by national ETP legislation (in this case Guatemalan legislation).
- b. Species listed in binding international agreements given below:
 - Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.
 - Binding agreements concluded under the Convention on Migratory Species (CMS), such as the Agreement on the Conservation of Albatrosses and Petrels (ACAP).
- c. Species classified as ‘out-of scope’ (amphibians, reptiles, birds and mammals) that are listed in the IUCN Red list as vulnerable (VU), endangered (EN) or critically endangered (CE).

Of all the species presented in **Table 3-17**, only 5 species of rays, 9 species of sharks, 5 species of sea turtles and 5 species of whales are considered ETP for the purposes of this fishery evaluation. Sea turtles are protected both because they are included in Appendix 1 of CITES and because 3 of the species are classified by IUCN as Vulnerable, 1 of the species as endangered and the remaining 2 as critically endangered. In the case of whales only one of them is in danger of extinction according to IUCN, but all of them are included in Appendix I of CITES. L hammerhead sharks (Sphyniridae family), oceanic whitetip sharks, silky sharks and oceanic whitetip sharks have been identified as endangered species due to the impact of fisheries within the ICCAT Convention area and therefore between 2009 and 2011 different Recommendations were formulated (Recs [09-07], [10-07], [10-08], [11-08]) that prohibit the retention on board of the species in question, as well as their transshipment, landing, storage, sale or offering for sale, either of the entire casing or of any part separately. Shortfin mako shark is addressed in ICCAT Rec. 17-08, such that CPCs shall require vessels to promptly release shortfin mako sharks, unless the shark is already dead, and then there are specific reporting requirements. The recommendation indicates that this is the first step in the development of a rebuilding plan for a species that is both overfished and experiencing overfishing.

As explained in section 3.5.1, the ICCAT Recommendations come into effect 6 months after their approval by the Commission and are binding for the CPCs unless they are objected by any CPC. Guatemala has not objected to these Recommendations, so for the purposes of the evaluation it is considered that these shark species are recognized as endangered species by the flag legislation of the vessels evaluated.

There are no binding agreements with set limits concluded under CMS that affect the species that interact with the fleet evaluated in the area where it operates. On the other hand, although there are 3 Memorandums of Understanding (MoU) concluded under CMS that would indeed be relevant to the fleet evaluated: i) Sea Turtles in the Atlantic, ii) Marine Mammal West Africa; iii) Sharks (which includes in its Annex I the whale shark and shortfin mako shark), none of them is a legally binding instrument (although they have been signed by most of the West African coastal countries where the UoA operates). There is an issue that Guatemala is not a party to the CMS. Guatemala has a List of Threatened Species (LEA) prepared and published by the National Council for Protected Areas (CONAP) which includes also criteria themselves of CONAP for the inclusion of species in the LEA. However, in relation to the marine species that affect the evaluated fishery, there is no difference with those listed in CITES and they have an equivalent protection range. In addition, Guatemala has joined the International Dolphin Conservation Program (AIDCP) but its range of application is limited to the Eastern Pacific. Finally, in the case of the whale shark both Regulation OSP-07-2014 and the Guatemalan Ministerial Agreement No.713-2014 prohibits its fishing both a Regional (Central American) and National level (Guatemala). Both regulations are also applicable to fishing vessels flying the flag of a SICA member in International Waters (see **section 1.13.5.1**).

Based on the different sources of information consulted by team (see **section 3.4.1.1**) and on the MSC guidance on the categorization of ETP species described above, the team has prepared a list of potential bycatch species to be interacted by purse seiners targeting tropical tunas in the Atlantic (**Table 3-17**). However, the team will only consider as ETP scoring elements those species recorded by the observers on board the UoC during the last 4 years, since those are the ETP species which have been demonstrably impacted by the UoC. **Table 3-21** combines information from the two sets of observer data available (see **Table 3-15** and **Table 3-16**). Species listed in **Table 3-21** will be considered as ETP scoring elements for this assessment.

Table 3-21. ETP species encountered by the UoC in two consecutive observed periods, March 2014-April 2017 (55 fishing trips accounting for 302 FSC sets) April 2017- April 2018 (26 fishing trips accounting for 118 FSC sets). Source: observer data collected on board UoC by IEO and Sea Eye.

Group	Common name	SPECIES	March 2014- April 2017 IEO observers			April 2017-April 2018 Sea Eye observers	
			N ind FSC	N ind FOB	% alive(^)	N ind FSC	% alive
Rays	Unidentified mobula	<i>Mobulidae</i>	3	1	75	-	-
	Smoothtail mobula	<i>Mobula japanica</i>	11	70	60.49	1	100
	Spinetail mobula	<i>Mobula mobular</i>	2	13	46.67	6	66.7
	Chilean devil ray	<i>Mobula tarapacana</i>	4	16	65.00	-	-
	giant manta	<i>Manta birostris</i>	2	0	50.00	1	100%
Sharks	-	<i>Carcharhinidae</i>	2	68	17.14	95	18.9%
	-	<i>Carcharhindus spp.</i>	2	2	100		
	silky shark	<i>Carcharhinus falciformis</i>	294	2,623	43.78	159	86.2
	oceanic whitetip shark	<i>Carcharhinus longimanus</i>	5	13	66.67	2	100
	Unidentified Mako	<i>Isurus spp</i>	2	6	37.50		

	shortfin mako	<i>Isurus oxyrinchus</i>	1	44	44.44	1	100
	Smooth hammerhead	<i>Sphyrna zygaena</i>	4	136	55.71	-	-
	Scalloped hammerhead	<i>Sphyrna lewini</i>	2	418	54.29	22	81.8
	whale shark	<i>Rhincodon typus</i>	0	4	100.00	1	100
Cetaceans	Risso's dolphin	<i>Grampus griseus</i>	2	0	100.00	-	-
	Byrde's whale	<i>Balaenoptera edeni</i>	11	0	100.00	-	-
	fin whale	<i>Balaenoptera physalis</i>	1	0	100.00	-	-
	humpback whale	<i>Megaptera novaeangliae</i>	3	0	100.00	-	-
	Unidentified baleen whale	<i>Mysticeti sp.</i>	7	0	100.00	-	-
Sea turtles	Kemp's Ridley turtle	<i>Lepidochelys kempii</i>	0	1	100.00	-	-
	Olive Ridley turtle	<i>Lepidochelys olivacea</i>	16	150	98.80	10	100
	Loggerhead turtle	<i>Caretta caretta</i>	16	107	96.75	-	-
	Green turtle	<i>Chelonia mydas</i>	5	16	100.00	-	-
	Leatherback Turtle	<i>Dermochelys coriacea</i>	1	4	100.00	1	100
	Unidentified Sea turtle	-	1	8	66.67		

(^) Fate is presented together for both FSC and FOB sets (no segregated data were provided)

Based on **Table 3-21**, for the 2014-2016 period, silky sharks had the greatest number of interactions on any single species (294), but the impacts of the fishery also included the capture of 303 sharks, 38 sea turtles, 22 rays and mantas, and 24 cetaceans. For the 2017-2018 period the impacts of the fishery also included the capture of 281 sharks including 1 whale shark, 11 sea turtles, 8 rays and mantas, and 0 cetaceans.

It is important to note that the data presented in **Table 3-21** are for observer data collected solely on FSC sets. Recall that based on the ICCAT definition of an unassociated set, these are sets on free schooling (FSC) tuna. These unassociated sets are contrasted to FOB sets, where the set is made on tuna associated with a natural or artificial floating structure, and by definition FOB sets include sets on whale sharks and dead whale carcasses (**Table 3-7**). Unassociated sets or FSC sets include sets on live whales by default, as this type of set is not included in the ICCAT definition of an FOB set. The assessment team notes that these subtle distinctions between FSC and FOB set types are unique to ICCAT, and are different from other regional fishery management organizations (RFMOs). The fishery observer on board the fishing vessel follows these definitions when categorizing a set type at the beginning of the set, and the set type designation is then used to sort and summarize the data.

It is interesting to note that the observer data for the period 2014-2017 based 302 FSC sets includes the capture of 24 cetaceans, 100% of which were released alive. In contrast the observer data for the period 2017-2018, based on 139 FSC sets, indicates 0 marine mammal interactions, but interestingly includes 1 observed whale shark interaction, and by ICCAT definition whale sharks sets are considered FAD sets. This apparent error in the data raises questions about the data quality.

There were no reported seabirds interactions or captures by the UoA in the observer data for the two periods 2014-2017 and 2017 and 2018, therefore seabirds will not be considered further in this background section.

Marine mammals

The observer data for 2014-2016 identifies 24 cetaceans of four species captured in a total of 302 FSC sets. The observer data for the period 2017-2018 identifies no cetaceans taken, but it is curious

that in the previous period 23 marine mammals were taken, and in the following two years, none were taken. This could reflect either a change in fishing strategy or a different fishing area, or a change in the observer data collection. It is notable that there was a change in the observer contractor.

Fin whales are IUCN red listed as endangered, and are listed on Appendix I of the Convention on Trade in Endangered Species (CITES). Fin whales are also listed on Appendices I and II of the Convention on Migratory Species (CMS). During the 2014-2016 period, 1 fin whale is reported taken, and 7 unidentified baleen whales are also reported captured, and all are reported released alive.

Humpback whales are IUCN red listed as Least Concern, but they are listed on CITES Appendix 1 and on the CMS Appendix 1. During the 2014-2016 period, 3 humpback whales are reported taken, and 7 unidentified baleen whales are also reported captured, and all are reported released alive.

Byrde's whales are IUCN red listed as Least Concern, and they are listed on CITES Appendix 1 and on the CMS Appendix 1. During the 2014-2016 period, 11 Byrde's whales are reported taken, and all are reported released alive.

Risso's dolphin are IUCN red listed as Least Concern, and are listed on the CMS MOU. During the 2015-2016 period, 1 Risso's dolphin are reported taken, and it is reported released alive.

In summary, based on the data for the 2014-2016 period, only the one identified fin whale and the 7 unidentified baleen whales are potentially problematic based on the IUCN red list, as these are the only endangered marine mammal species taken. While all captured marine mammals were reported to be released alive, the effects of being captured on the survival and reproductive capacity of the individual are unknown. It is also important to note that whale sets most likely intentional, and the capture of whales can be avoided by not setting on whales. This may explain the lack of whales reported captured in the 2017-2018 data.

A comprehensive PSA exercise was performed by Arrizabalaga et al. (2011) using the by-catch species included in the ICCAT list for Atlantic tuna fisheries. The results showed that, although marine mammals have the highest average intrinsic vulnerability to population decline, their susceptibility scores is extremely low in the case of purse seine owing to the low frequency of interactions. As a result the authors did not include this taxonomic group in the final risk ranking (Arrizabalaga et al., 2011).

Sea turtles

The observer data for the 2014-2016 period identifies a total of 38 sea turtles of four different species captured, and overall all 98% were released alive. In the 2017-2018 period only 11 sea turtles were reported taken, and all were reported to be released alive.

Olive ridley turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Sixteen Olive ridley sea turtles were taken in the 2014-2016 period, and 10 were taken in the 2017-2018 period. Almost all olive ridley turtles (99%) were released alive.

Loggerhead turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Sixteen loggerhead sea turtles were taken in the 2014-2016 period, and 96% were released alive. No loggerhead turtles were taken in the 2017-2018 period.

Green turtles are IUCN red listed as endangered, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Five green sea turtles were taken in the 2014-2016 period, and 100% were released alive. No green turtles were taken in the 2017-2018 period.

Leatherback turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. One leatherback sea turtle was taken in the 2014-2016

period, and one leatherback turtles was taken in the 2017-2018 period. All (100%) were released alive.

In summary, 38 sea turtles are captured in the 2015-2016 period, and 11 were taken in the 2017-2018 period. Almost all were released alive. Relatively few sea turtles are captured in FSC sets, as compared with associated or FOB sets, so from a conservation perspective, FSC sets results in less impact on sea turtles.

Management measures concerning sea turtles include: The obligation to register (both in observer programs and in logbooks) and to report by-catches and discards according to Rec (11-10). Recommendation (10-09), subsequently amended by Rec (13-11), establishes a set of measures to mitigate and evaluate the impact of fisheries in the Convention area on marine turtles.

Sharks and rays

The observer data for the 2014-2016 period identifies a total of about 300 sharks of five different species captured, and overall all 50% were released alive, and about 19 large rays were captured and about 60% were released alive. In the period 2017-2018, 281 sharks were taken including 1 whale shark, and 8 rays and mantas were taken. Again only about 50% of these were released alive.

Silky sharks were taken in the greatest numbers, 294 in the 2014-2016 period, and about 44% were released alive, and 159 in the 2017-2018 period with 86% released alive, however only about 50% of the live released silky sharks survive, so actually only 20% of the captured silky sharks survive (Hutchinson et al. 2015, and Eddy et al. 2016). Silky sharks are listed on the CMS MoU, and are covered with an ICCAT Rec (11-08). The stock status of silky sharks is unknown, but there is concern for the stock as it caught in large numbers in the purse seine FAD fishery.

The catch of oceanic white tip sharks in the period 2014-2016 was 5 individuals, and about 66% were released alive, and 2 individuals in the 2017-2018 period with 100% released alive. Oceanic white tip sharks are identified here as an ETP species as a precaution, and they are covered by an ICCAT Rec (10-07).

The catch of short fin mako in the 2014-2016 period was 1 individual, and it was released alive, and 1 individual in the 2017-2018 period, and it was released alive. ICCAT has recently conducted an assessment of this species, and the north Atlantic stock was found to be overfished B_{2015}/B_{MSY} was 0.63-0.85, and overfishing was occurring, The south Atlantic stock was found to be not overfished ($B_{2015}/B_{MSY}=1.69$ to 1.75) but that overfishing may be occurring. The shortfin mako is listed by the CMS MoU so it is considered as an ETP species for MSC assessment purposes, but based on the ICCAT stock assessment it does not appear to be endangered or threatened.

Smooth hammerhead and scalloped hammerhead sharks were captured in very small numbers, 4 and 2 respectively in a two year period 2014-2016, and about 50% were released alive. There were 22 scalloped hammerhead sharks taken in the 2017-2018 period, and about 80% were released alive. Both species are listed by the CMS appendix 1 and the CMS MoU. The status of each of these stocks is unknown.

The catch of smooth tail mobula, a ray, during the period 2014-2016 was 11 individuals and about 60% were released alive. Only 1 smooth tail mobula was taken in the 2017-2018 period, and it was released alive. Other species of large ray were captured including spine tail mobula, Chilean devil ray and a giant manta. Catches of these species were 2,4,2 individuals in the 2014-2017 period, respectively, and about 50% were released alive. During the 2017-2018 period the catch of these species was 6, 0, and 1, and about 60% of these were released alive. These species are listed on the CMS Appendix 1 and by the Shark CMS MoU, therefore they are identified as MSC ETP species. The stock status of these species is unknown. It is interesting to note that two giant manta were captured, and that takes of these species is sometimes considered an associated or FOB catch.

In summary, about 300 sharks were reported captured by the UOA in the period 2015-2016, and about 50% were released alive. Most of these were silky sharks (98%), and this catch relatively small compared to the catch of silky sharks by FAD sets, and by other fisheries. Additionally about 19 large

rays were captured and about 60% were released alive. Most of these were smooth tail mobula. In the period 2017-2018, 281 sharks were taken including 1 whale shark, and 8 rays and mantas were taken. Only about 50% of these were released alive.

Management measures concerning sharks and rays include: The obligation to register (both in observer programs and in logbooks) and to report by-catches and discards according to Recommendation [11-10]. The different measures established in Recommendations [09-07], [10-07], [10-08], [11-08] for the conservation and management of protected sharks (these Recommendations prohibit retaining these species on board, returning live the copies whenever possible, and report all interactions indicating the state (live / dead)

3.4.6 Habitat impacts

The Sant Yago unassociated purse seine yellowfin tuna fishery targets tuna and other highly migratory species in the epipelagic portion of the water column. The purse seine is suspended from floats and the netting extends no more than 120 meters below the surface. The gear does not come in contact with benthic habitat. The gear is never lost, although some small sections of netting could be lost, if and when the gear is damaged by large animals.

The characteristics of the pelagic and mesopelagic habitat where the Sant Yago unassociated purse seine fishery for yellowfin tuna operates in the north and south Atlantic are well known and have been researched over long periods by Spain and other coastal countries. Extensive bathymetry data on the Atlantic Ocean can be referenced in the GEBCO website (<http://www.gebco.net/>). The environmental characteristics of the Atlantic Ocean have also been widely studied by national institutions such as AZTI, IEO, CSIC (Consejo Superior de Investigaciones Científicas), or international institutions such as NOAA (National Oceanic and Atmospheric Administration). For example, NASA's OceanColor Web (<http://oceancolor.gsfc.nasa.gov/cms/>) is supported by the Ocean Biology Processing Group (OBPG) provide ocean-related products from a large number of operational, satellite-based remote-sensing missions providing ocean colour, sea surface temperature and sea surface salinity data to the international research community since 1996.

Based on the Table GSA8, from MSC fisheries standard v2.0, there is no known bottom-contact by the purse seine fishing gear operated in deep ocean waters. The species targeted cannot be caught using trawl or other bottom-contacting gear. The use of the gear, the understanding that comes from years of peer-reviewed research about its impacts, and the specific management strategy that mandates only its use could be construed as a cohesive and strategic arrangement. This is supported by demonstrable understanding about how the use of purse seines work to avoid impacting benthic habitats specifically, and some understanding about the impacts of lost gear on habitat and the relative effects of such impacts are deemed to be low risk for overall habitat health. Periodic assessments (i.e., directed research and risk assessments) are undertaken to inform management decision makers about lost-gear impacts to ensure that management strategies are working and are demonstrably avoiding serious or irreversible harm to "main" habitats and to determine whether changes need to be made to mitigate unacceptable impacts.

Figure 3-25 and **Figure 3-26** show the protected marine areas in the north and South Atlantic Ocean. The characteristics of each of these areas can be consulted in websites such as the MPAtlas website (<http://mpatlas.org/explore/>) or the protected planet website (<http://www.protectedplanet.net/>). Protected habitats susceptible to being affected by the fleet being assessed are either deep or coastal habitat, which are unlikely to be impacted by surface purse seine fishery. In relation to the African countries where the fishery take place it is remarkable the recent initiative leaded by Gabon to create the largest marine protected areas network in Africa (9 marine parks and 11 aquatic reserves), which combine with the country's three existing marine zones will account for 53,000 Km² of protected coastal and ocean waters. As part of the bilateral agreement signed with Gabon, the assessed vessels has to take an additional Gabonese observer on board if required by the Government of Gabon.

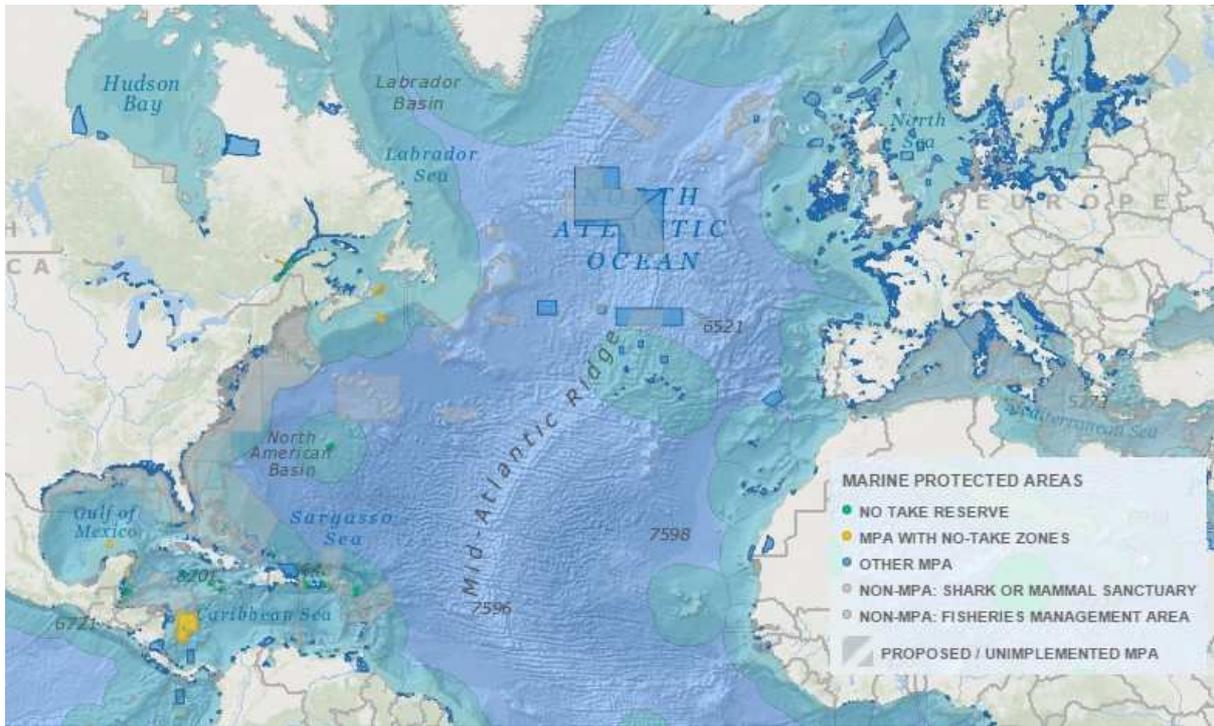


Figure 3-25. Marine protected areas in the North Atlantic Ocean, extracted from MPAtlas website (<http://mpatlas.org/explore/>)

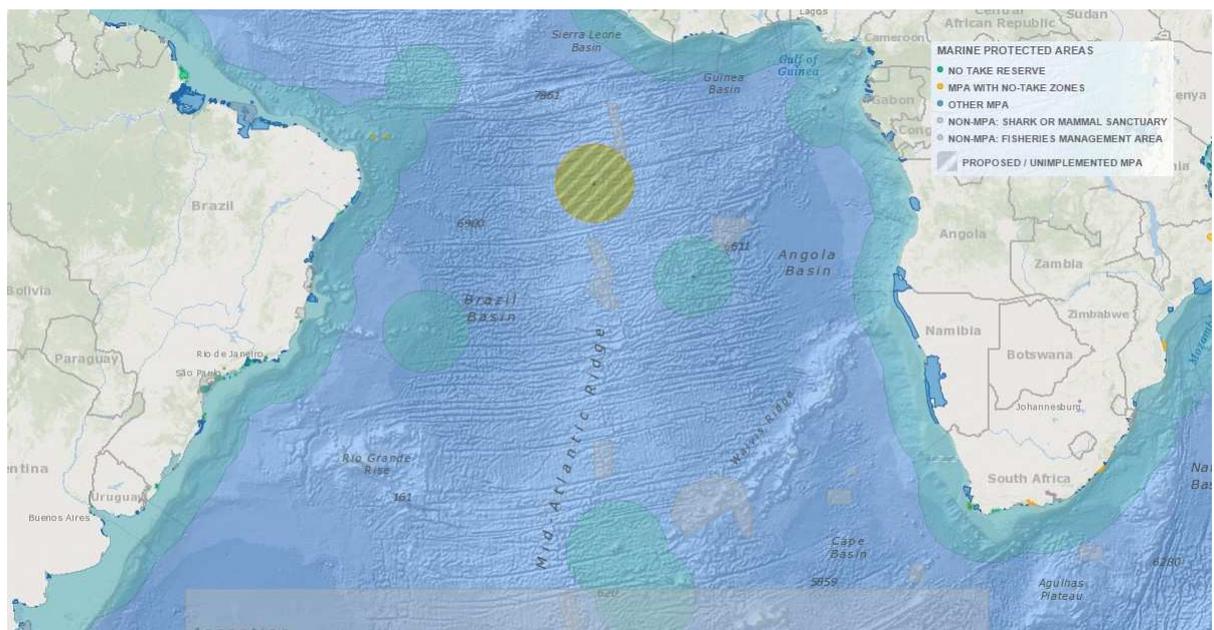


Figure 3-26 Marine protected areas in the South Atlantic Ocean, extracted from MPAtlas website (<http://mpatlas.org/explore/>).

The purse seine gear displaces biota from the space occupied by the gear, and it probably interferes with the movement of some organisms in the vicinity of the gear. However, these effects on pelagic habitat are temporary and the assessment team is not aware of any evidence of adverse impacts on the structure or functioning of either benthic or pelagic habitat. The fishery doesn't change the characteristics of the water column (for example, the temperature, salinity, currents) and it doesn't come into contact with benthic habitats.

3.4.7 Ecosystem Impacts

The purse seine fishery primarily targets tuna, a large predatory fish, with the about 95% of the catch by weight and numbers comprised of tuna. There is a small bycatch of other species including

billfish, rays, sharks, and some small bony fishes. Addition to these species, some ETP species including other sharks and rays, marine mammals, and marine turtles are also caught. The fishery under assessment takes place within the water column with only limited contact on the bottom occurring with purse seine; therefore, ecosystem impacts are considered only to result from removal of species or functional groups from the system.

The impacts of the purse seine gear are considered to be minimal due to selective nature of the gear, other than the direct impacts on captured species as described in the sections on the target, primary and secondary and ETP species.

Ecosystem level impacts resulting from species or functional groups could include:

- Changes to the trophic relationships or structure
- Changes to the size composition of the ecological community
- Changes in biodiversity of the ecological community (e.g. alterations to species evenness and dominance) caused by direct or indirect effects of fishing
- Changes in the distribution of species

A fishery can alter the structure and functioning of ecosystems through trophic interactions by removing forage species upon which higher trophic level species depend or through top down trophic cascades. Based on the proportion of higher level predators making up the largest proportion of bycatch species, we consider changes to trophic relationships or structure to be the most serious threat from the fishery to the ecosystem.

Much debate continues over the extent to which purse seine fisheries impact ecosystem function through removal of top or apex predators and the ability to predict associated impacts remains limited (Myers et al, 2007). The former mechanism is not applicable to this fishery because the fishery does not catch forage species. The second mechanism was described by Andersen and Pedersen (2009) using a size- and trait-based model to explore how marine ecosystems might react to perturbations from different types of fishing pressure. They conclude that cascades are damped further away from the perturbed trophic level. Fishing on several trophic levels leads to a disappearance of the signature of trophic cascades. However, Pershing et al. 2015 suggests that trophic cascade regime shifts are rare in open ocean ecosystems and that their likelihood increases as the residence time of water in the system increases. Then, as the UoC operates in the open seas of Atlantic Ocean this mechanism is neither applicable.

The ICCAT Sub-Committee on Ecosystems was created in 2005 to integrate the monitoring and research activities related to the ecosystem that are required by the SCRS in fulfilling its advisory role to the Commission, being the scientific cornerstone in support of an Ecosystem Approach to Fisheries (EAF) in ICCAT.

The Sub-Committee's work will encompass the specific tasks listed below:

1) Monitoring:

- Create and maintain an inventory of species caught by fleets targeting tuna and tuna-like species in the Atlantic and Mediterranean.
- Improve conventional statistics (catch, effort, size) of ICCAT target species that are caught incidentally in non-targeted fisheries.
- Monitor and improve information on interactions with non-ICCAT target species, with emphasis on those species of interest to the Commission and for which no Species Group has been established (e.g., sea turtles and sea birds).
- Facilitate access by SCRS scientists to oceanographic and environmental data.

2) Research:

- Evaluate the relative impact of the different abiotic and biotic factors (including oceanographic and climate phenomena, directed and incidental fishing, predation, competition, pollutions and other human impacts) that affect the abundance, distribution and migration of ICCAT target species.
- Characterize main feeding and reproductive habitats of ICCAT target species.
- Characterize the volume, composition and disposition of non-target species that are caught incidentally in tuna and tuna-like fisheries within the Convention area.
- Investigate trophic interactions of ICCAT target species.
- Investigate the impact that changes in fishing gears or fishing technology have on the catch of target and non-target species.

3) Modelling:

- Develop reference points and indicators that explicitly incorporate ecosystem considerations.
- Develop simulation, dynamic and statistical models focusing on mixed-fisheries, multispecies, bycatch and ecosystem issues.

4) Advice:

- Develop mechanisms which can be used to better integrate ecosystem considerations into the scientific advice provided by SCRS to the Commission, including but not limited to, Precautionary Approaches.
- Investigate, through operational models, potential benefits (at an ecosystem level) of alternative management strategies, such as time-area closures.
- Advise on the impacts of tuna and tuna-like fisheries on the populations of non-target species of interest to the Commission

Since 2007 the Sub-Committee on Ecosystems have an annual Inter-sessional Meeting.

Further, a joint meeting of tuna RFMOs on the Implementation of the Ecosystem Approach to Fisheries (EAF) Management, was initiated by ICCAT and supported by the Common Oceans/ABNJ Tuna Project, which brought together scientists from the five t-RFMOs and national experts. The goals of the latter meeting were to (1) establish a sustained dialogue across t-RFMOs on the issues of EAF and its implementation, (2) understand common challenges in its implementation and (3) identify case specific solutions. A number of recommendations to the Commission were made as regards different issues covered during the meeting (ICCAT 2017e).

3.5. Principle Three: Management System Background

The intent of MSC Principle 3 is to ensure that there is an institutional and operational framework appropriate to the size and scale of the UoA for implementing Principles 1 and 2 and that the management system is capable of delivering sustainable fisheries in accordance with these Principles. To meet this goal the fishery must comply with all local (if appropriate), national and international regulations and have a management framework capable to respond to any change or circumstance affecting the fishery, but maintaining its long term sustainability.

3.5.1. Regulatory framework applicable to the assessed fishery

Yellowfin tuna constitute a single pan-Atlantic stock. The assessed fleet operates in the East-Central and South-East Atlantic (FAO areas 34 and 47, see **Figure 3-2**). Thus, in accordance with MSC SA4.1.1, the jurisdictional category applicable to the management system of the UoA, when assessing its performance under Principle 3, is: 'Stocks of highly migratory species' (HMS).

At a world-wide level, the overarching regulatory framework is comprised mainly by the United Nations Convention on the Law of the Sea of 1982 (UNCLOS) and the United Nations Agreement on straddling and highly migratory fish stocks of 1995 (UNFSA). UNFSA aims to facilitate the application of certain provisions of UNCLOS relating to the conservation and management of these type of stocks. UNFSA complements the 1993 FAO Agreement to promote compliance with international measures for the conservation and management of fishing vessels on the high seas (FAO Compliance Agreement of 1993) and the 1995 Code of Conduct for Responsible Fisheries. FAO (non-binding).

Table 3-22 shows that both Guatemala (flag State of the assessed fleets) and all West African coastal countries in which EEZ the UoA may operate have ratified the UNCLOS. However, that is not the case of the UNFSA since so far it has only been ratified by Ivory Coast, Guinea Conakry, Senegal and Liberia; while Gabon, Mauritania and Guinea Bissau have signed it but not ratified it.

Tunas and other large highly-migratory species (also known as tuna-like species) are typically assessed and managed through international arrangements reached at regional levels (e.g. Atlantic Ocean, Indian Ocean, Pacific Ocean). Since the distribution of such stocks is not limited to the waters of any single sovereign nation, such arrangements are necessary in order to share the available research and fishery information.

The Conference of the Food and Agriculture Organization of the United Nations, at its Thirteenth Session held in Rome in November and December 1965, authorized the Director-General of that Organization to call a Conference of Plenipotentiaries to prepare and adopt a Convention for the purpose of establishing a Commission for the conservation of tuna and tuna-like fishes in the Atlantic Ocean. The next year the Conference of Plenipotentiaries held in Rio de Janeiro (Brazil) to work on a draft of the Basic Texts of the Convention prepared by the FAO Working Party for Rational Utilization on Tuna Resources in the Atlantic Ocean. A final version was agreed and opened for signature during the Rio de Janeiro Conference in Rio de Janeiro. After a ratification process, the Convention entered formally into force in 1969. Revised and updated versions of the Basic Texts were issued in 1977, 1985, 2003, 2005 and 2007. A Working Group is currently preparing new amendments to the Basic Texts of the Convention (ICCAT 2018b).

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is established under Article III of the Convention as an intergovernmental fisheries organization responsible for the conservation of tuna and tuna-like species in the Atlantic Ocean and adjacent seas. Although ICCAT pre-dates UNCLOS, UNFSA, and FAO Agreement and Code for Responsible Fishing, it complies with these regulations and with the requirements of other relevant laws for the management of shared stocks.

The Commission may be joined by any government that is a member of the United Nations (UN), any specialized UN agency, or any inter-governmental economic integration organization constituted by States that have transferred to it competence over the matters governed by the ICCAT Convention. The Commission has also created a special status known as *Cooperating Non-Contracting Party, Entity or Fishing Entity*. Parties, entities or fishing entities that are granted this status have many of the same obligations, and are entitled to many of the same privileges, as are Contracting Parties. Instruments of ratification, approval, or adherence may be deposited with the Director-General of the Food and Agriculture Organization of the United Nations (FAO), and membership is effective on the date of such deposit. Currently, there are 52 Contracting Parties.

Guatemala, as well as all the West African coastal countries in whose EEZ the UoA may operate, are Contracting Parties of the Commission (CPC). Also, those countries where landings occur (to containers or to reefer vessels) are ICCAT CPCs. Thus, all countries involved in the assessed fishery are CPCs (see

Table 3-22).

Table 3-22. All countries involved in the assessed fishery showing ratification dates for UNCLOS, UNFSA and PSMA, also ICCAT membership date is shown. Countries ordered by seniority in ICCAT. Fuente: ICCAT website (<https://www.iccat.int/es/contracting.htm>)

Flag	Country	UNCLOS ratification date	UNFSA ratification date	ICCAT membership date	PSMA ratified
	Ivory Coast	21/09/92	18/06/01(a)	6/12/1972	No
	Angola	05/12/90	-	29/07/1976	(*)
	Gabon	11/03/98	(*)	19/09/1977	Yes
	Cape Verde	10/08/87	-	11/10/1979	Yes
	San Tome and Principe	03/11/87	-	15/09/1983	Yes
	Equatorial Guinea	-	-	13/05/1987	No
	Guinea Conakry	06/09/85	16/09/05	5/06/1991	Yes
	European Union	01/04/98	19/12/03	14/11/1997	Yes
	Guatemala	11/02/97	-	12/11/2004	No
	Senegal	25/10/84	30/01/97	21/12/2004	Yes
	Sierra Leona	12/12/94	-	13/10/2008	(*)
	Mauritania	17/07/96	(*)	4/12/2008	Yes
	Liberia	25/09/08	16/09/05	14/02/2014	No
	Guinea Bissau	25/08/86	(*)	13/05/2016	No

(*) Countries that have signed but not ratified the Agreements

In order to carry out the objectives of the Convention the Commission is responsible for *“the study of the populations of tuna and tuna-like fishes and such other species of fishes exploited in tuna fishing in the Convention area as are not under investigation by another international fishery organization. Such study include research on the abundance, biometry and ecology of the fishes; the oceanography of their environment; and the effects of natural and human factors upon their abundance. The Commission, in carrying out these responsibilities shall, insofar as feasible, utilise the technical and scientific services of, and information from, official agencies of the Contracting Parties and their political sub-divisions and may, when desirable, utilise the available services and information of any public or private institution, organization or individual, and may undertake within the limits of its budget independent research to supplement the research work being done by governments, national institutions or other international organizations”*. Therefore, the Commission compiles fishery statistics of the CPCs and non-contracting Parties, Entities and Fishing Entities that fish these species in the Atlantic Ocean and coordinates the investigation, including stock assessments, on behalf of its members. On the basis of the data collected and the scientific studies prepared, the Commission advises on management matters (through recommendations, resolutions and other decisions) in order to achieve sustainable exploitation of these resources and the ecosystem. In accordance with Article VIII.2 of the basic text of the Convention, the recommendations will be applicable to the CPCs and will enter into force 6 months after the official date of communication by the Commission (although point 3 of the same Article provides certain exceptions) . On the contrary, Resolutions are non-binding guidelines for the Commission.

Finally, another agreement that affects some of the countries where the fishery occurs is the FAO Agreement on Port State Measures (PSMA). This agreement, approved by the FAO Conference in 2009 and in force since June 2016, has the main objective of preventing, discouraging and eliminating IUU fishing through the application of vigorous measures by the port States. The Agreement provides that the parties, in their capacity as port State, apply the Agreement effectively to foreign vessels that try to enter ports or while in port. The Agreement is binding and establishes the minimum measures of the port States. However, countries are free to adopt more stringent measures than those stipulated in the Agreement. As already explained in **Section 3.2** the UoA is landing in 3 different ports, with Abidjan (Ivory Coast) being the main one, followed by Dakar (Senegal), and finally Pobra do Caramiñal (Spain-EU).

Table 3-22 shows that both Spain and Senegal have ratified the PSMA, while the Ivory Coast has not. However ICCAT, as most of the RFMOs also regulate member nations' port State controls as part of their management measures. This ensures that these governments have minimum standards in place, regardless of whether they are a party to the PSMA.

The most relevant ICCAT Resolutions and Recommendations applicable to the assessed fishery are listed below, grouped by topic. This is not intended to be an exhaustive list, the compendium of all active ICCAT Recommendations and Resolutions (ICCAT 2018c) is annually reviewed and published by ICCAT at its website (<https://www.iccat.int/en/RecRes.asp>). Recommendations and Resolutions are ordered by date of publication.

Topical tunas:

- **Recommendation [14-02] concerning the implementation of an Atlantic Ocean tropical tuna tagging programme (AOTTP). Entered into force 3 June 2015.** Establishes the implementation of a coordinated tagging programme in the Atlantic for the main tropical tuna stocks (yellowfin tuna, bigeye tuna and skipjack tuna) as well as for neritic small tunas of high importance for coastal populations.
- **Recommendation 16-01 on a multi-annual conservation and management programme for tropical tunas. Entered into force the 12 June 2017.** CPCs whose vessels fish bigeye and/or yellowfin tunas in the Convention area shall implement the Multi-annual Management and Conservation Programme initiated in 2012. As from 2015, such programme shall also apply to the eastern stock of skipjack tuna. This Recommendation establishes: (i) TACs for the bigeye and yellowfin tuna, and in the case of the bigeye tuna it also establishes catch limits for certain CPCs and mechanisms for quota transfer and to adjust it in case of overage or underage; (ii) Capacity limitation measures for the bigeye tuna; (iii) management measures for FADs (e.g. area/time closure for protecting juveniles, limitation of FADs, FAD management plan, FAD logbook, reporting obligations on FADs, obligations in terms of non-entangling and biodegradable FADs); (iv) control measures (specific authorization, list of active vessels, data recording and reporting requirements, obligation to get scientific observers on board and maintain the port sampling programme during the are/time closure) and other final provisions.
- **Recommendation 17-01 on prohibition on discards of tropical tunas caught by purse seiners. Entered into force the 11 June 2018.** The objective of this recommendation is to achieve a substantial reduction in discards of tropical tunas by 2020. Contracting Parties and Cooperating Non-Contracting Parties, Entities or Fishing Entities (CPCs) whose purse seiners are authorised to fish for bigeye and/or yellowfin and/or skipjack tuna in the Convention area, pursuant to paragraph 25 of Recommendation 16-01, must require these vessels to retain on board then land or tranship to port all bigeye, skipjack and yellowfin tunas caught, except under two circumstances which are described in detail –(i) fish 'unfit for human consumption and (ii) catches of the last set of the trip which cannot be stored-. The CPC shall report all discards observed.
- **Recommendation 16-02 to establish an ad hoc working group on fish aggregating devices (fads). Entered into force 12 June 2017.**

Albacore:

- **Recommendations 16-06 (in force since 12 June 2017) establish a Multi-annual conservation and management program for the North Atlantic Albacore, while Recommendation 17-04 (in force since 11 June 2018) supplements the plan by including a HCR.**
- **Recommendation 16-07 on the Southern albacore establishes catches limits for the period 2017-2020.**

Tuna-like species:

- **Recommendation 15-05 to further strengthen the plan to rebuild blue marlin and white marlin stocks.** This Recommendation was later amended by **Recommendation 16-11**.
- **Recommendation 16-11 on management measures for the conservation of Atlantic sailfish.**
- **Recommendations [17-02] and [17-03]** establish measures for the conservation of the Swordfish in the North and South Atlantic respectively.

By-catch species:

- **Recommendations 04-10, 07-06, 10-06, 10-07, 10-08, 11-08, 12-05, 14-06, 16-12, 16-13 and 17-08 establish different conservation and management measures for sharks caught associated to ICCAT fisheries.** In general, all the recommendations call for the CPCs to comply with the ICCAT requirements for the presentation of catch, effort and size data (Tasks I and II), and for the observer's programs in place to record and report all interactions with these species, including the outcome (live / dead). In the case of silky sharks and hammerhead sharks, Rec [11-08] and [10-08] respectively require the release of all live or dead specimens and they urge to take additional measures to increase the survival of the individuals accidentally caught. Rec [10-08] also requires that interactions with hammerhead sharks and their outcome (live / dead) be recorded in logbooks. Rec 16-12 establishes a catch limit for the North Atlantic blue shark, while Rec 17-08 obliges to promptly release North Atlantic shortfin mako in a manner that causes the least harm (although it can be caught, retained and transhipped under certain circumstances).
- **Recommendation [10-09] on the by-catch of sea turtles in ICCAT Fisheries (amended by Rec [13-11]).**
- **Recommendation [11-10] on information collection and harmonization of data on by-catch and discards in ICCAT fisheries.**

Monitoring and Compliance:

- **Recommendation 03-13 concerning the recording of catch by fishing vessels in the ICCAT Convention Area.** This Recommendation establishes that all commercial vessels over 24 m length overall shall keep a bound or electronic logbook.
- **Recommendation 11-13 on the Principles of Decision Making for ICCAT Conservation and Management Measures.** This Recommendation establishes principles based on the status of stocks as represented by the Kobe plot, shall guide the development of management measures for ICCAT-managed stocks.
- **Recommendation 11-15 on Penalties applicable in case of non-fulfilment of reporting obligations** CPCs shall include information in their annual reports on actions taken to implement their reporting obligations for all ICCAT fisheries, in particular the steps taken to improve their Task I and Task II data collection for direct and incidental catches. CPCs that do not report Task I data, including zero catches, for one or more species for a given year, shall be prohibited from retaining such species as of the year following the lack or incomplete reporting until such data have been received by the ICCAT Secretariat.
- **Recommendation 11-18 further amending Recommendation 09-10 establishing a list of vessels presumed to have carried out Illegal, Unreported and Unregulated fishing activities in the ICCAT Convention Area:** Establishes the procedures to develop, update and transmit a list of vessels flying presumed to have carried out illegal, unreported and unregulated fishing activity in the ICCAT Convention Area.
- **Recommendation 12-07 for an ICCAT scheme for minimum standards for inspection in port.** With a view to monitor compliance with ICCAT conservation and management measures, each CPC, shall apply this Recommendation for an effective scheme of ports

inspections in respect of foreign fishing vessels carrying ICCAT-managed species and/or fish products originating from such species that have not been previously landed or transhipped at port. Recommendation 14-08 supports the effective implementation of Rec [12-07].

- **Recommendation 13-13 concerning the establishment of an ICCAT record of vessels ≥ 20 m in length authorized to operate in the Convention Area.** Each CPC shall submit to the ICCAT Secretariat the list of its large scale fishing vessels authorised to fish for tuna and tuna-like species in the Convention area.
- **Recommendation 14-09 amending Recommendation 03-14 by ICCAT concerning minimum standards for the establishment of a vessel monitoring system in the ICCAT Convention Area.** Each CPC shall implement a vessel monitoring system for its commercial fishing vessels ≥ 20 m.
- **Resolution 14-11 establishing guidelines for the cross-listing of vessels contained on IUU vessel lists of other Tuna RFMO son the ICCAT IUU vessels list in accordance with Recommendation 11-18.** It aims to maintain appropriate contacts with the Secretariats of other RFMOs managing tuna or likely tuna species in order to obtain copies of these RFMOs' IUU vessel list.
- **Recommendation 15-07 on the development of harvest control rules and of management strategy evaluation.** The purpose of this Recommendation is the consideration by the SCRS of Management Strategy evaluation (MSE) and Harvest Control Rules (HCRs) implementation. The SCRS shall advise the Commission on options for limit, target and threshold reference points and associated HCRs for tropical tunas.
- **Recommendation 16-14 to establish minimum standards for fishing vessel scientific observer programs.** It details minimum observer coverage required for the different fishing gear, the observer's qualifications and tasks, and also the use of electronic monitoring systems to complement human observer programs.

Miscellaneous:

- **Resolution 15-11 concerning the application of an ecosystem approach to fisheries management.** The Commission should apply an ecosystem-based approach to fisheries management, considering the interdependence of stock and species and the impacts of fishing and other human activities.
- **Resolution 15-12 concerning the use of a precautionary approach in implementing ICCAT conservation and management measures.** The Commission should apply a precautionary approach when making Recommendations.
- **Resolution 15-13 on criteria for the allocation of fishing possibilities.** It details the allocation criteria apply considering historical catches and the interest, fishing patterns and the interest of artisanal, subsistence and small-scale coastal fishers.

Since the assessed vessels are flying the Guatemalan flag, the Guatemalan regulations are also applicable. The legal instrument that regulates fishing in Guatemala is the General Fisheries and Aquaculture Law [Decreto 80-2002], and its Regulation [Acuerdo Gubernativo 223-2005] issued by DIPESCA. Article 25 establishes that commercial tuna fishing will be subject to the resolutions and recommendations issued by the Regional Fishing Management Organizations of which the Republic of Guatemala is a Party.

In addition to the Fisheries and Aquaculture Law, the following Guatemalan regulations apply to UoA:

- Ministerial Agreement No. 655-2007. It establishes the obligation to establish a VMS system for vessels larger than 24m in overall length and flying the flag of the Republic of Guatemala. These data are reported to the Fisheries and Aquaculture Management Unit (UNIPESCA) which can use them to verify compliance.

- Regulation OSP-01-09 establishing an Integrated System of Central American Fish and Aquaculture Register (SIRPAC)
- Ministerial Agreement No.0054-2010. Transposing Regulation OSP-01-09 to the Guatemalan legislation.
- Regulation OSP-03-10 creating and implementing a Regional System of Monitoring and Satellite Control of Fishing Vessels of the States of the Central American Isthmus
- Ministerial Agreement No.04-2011. Transposing Regulation OSP-03-10 to the Guatemalan legislation, later amended by Ministerial Agreement No.197-2011.
- Regulation OSP-05-11 banning shark finning for all fishing national and foreign vessels catching and landing sharks in Central American ports and for all vessels flagging a SICA (System for the Central American Integration) member flag in international waters.
- Ministerial Agreement No.86-2012. Transposing Regulation OSP-05-11 to the Guatemalan legislation.
- Regulation OSP-07-2014 banning commercial catches of whale sharks. This Regulation will be applicable in the maritime zones of jurisdiction of the SICA countries. It will also apply to those vessels that operate in international waters flying the flag of a member state.
- Ministerial Agreement No.713-2014. Transposing Regulation OSP-07-14 to the Guatemalan legislation.
- Ministerial Agreement No.344-2017. It transposes to the Guatemalan legislation the area/time closure established by ICCAT for the use of FADs in the Gulf of Guinea (Rec 16-01).

The fishing zone covers both international waters and the EEZs of the following African countries: Mauritania, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Cote d'Ivoire, Gabon, Sao Tome and Principe, Angola and Guinea Equatorial (see **section 3.2**). On behalf of its members, OPAGAC / AGAC signs private agreements with the Governments of those countries to ensure access and establish fishing conditions for non-EU vessels (as is the case of the assessed fleet). The licenses obtained are validated by the Guatemalan Government and notified to ICCAT. The client handed current agreements and licences (at the time of the site visit) to the assessment team for its assessment and checking. The Contents and the degree of detail included in the private agreements differ a lot between them. **Table 3-23** summarises the main reporting requirements (and validity of the latest licence at the moment of the site visit), while other details are assessed under PIs 3.1.1 and 3.1.2.

Table 3-23. Summary of reporting requirements detailed in the private agreements signed with the West Africa coastal countries where the assessed fleet operates and period of validity of the latest fishing licences at the time of the site visit. Source: the client

Country	Validity	Requirements
Angola	1-year (10/01/2017-31/12/2017)	As no specific requirements the client is following its standard procedures: - Entrance and exit at the EEZ shall be notified 3 hours in advance - Daily notification of catches at species level - It is compulsory to have the original licence on board
Equatorial Guinea	1-year (07/03/2017-07/03/2018)	- Operative VMS at entering the EEZ As no other specific requirements the client is following its standard procedures: - Entrance and exit at the EEZ shall be notified 3 hours in advance - Daily notification of catches at species level
Gabon	½ year (16/05/2017-31/12/2017)	- Entrance and exit from the EEZ shall be notified 3h in advance, reporting date, hour, access point and catches per species (using FAO-codes) - Operative VMS while at the EEZ - Daily catch report shall be sent before midnight, detailing type of sets (FSC or FOB) and catches per species in kg.

		<ul style="list-style-type: none"> - In 30 days after exiting the EEZ a copy of the FAD logbook within the EEZ shall be sent - Info on FADs to be sent to seismic exploration companies - Gabon may authorize auxiliary vessel to come in the petrol exploratory and exploitation areas to remove FADs. This must be notified in advance - It is compulsory to have the original licence on board - Gabon may request the boarding of observers in 20% of the OPAGAC/AGAC vessels that have been granted a license under this Agreement
Guinea Bissau	1-year (01/01/2018-31/12/2018)	<ul style="list-style-type: none"> - Entrance and exit at the EEZ shall be notified 3 hours in advance - Catches within the EEZ shall be communicated at the end of the fishing trip
Guinea Conakry	1-year (28/02/2017-27/02/2018)	<ul style="list-style-type: none"> - Entrance and exit at the EEZ shall be notified 3 hours in advance and notify all catches per species on board - VMS always transmitting - Area/Time closure between 01/07/17 and 31/08/17 in the first 60NM (from coastal based line)
Ivory Coast	1-year (21/02/2017-20/02/2018)	<ul style="list-style-type: none"> - Entrance at the EEZ shall be notified 3 hours in advance - VMS transmitting at entering the EEZ - Exit from the EEZ shall be notified, together with volume of catches per species within the EEZ - While at the EEZ, a weekly report shall be sent reporting all fishing activities (area, catches, sets...) - Entrance at port shall be notified 2 days in advance - At the end of the year all reports on fishing activities developed within the EEZ shall be reported
Liberia	1-year (01/01/2018-31/12/2018)	<ul style="list-style-type: none"> - Entrance at the EEZ shall be notified 72h in advance. Existing catches on board at that moment shall also be reported - VMS transmitting at entering the EEZ - Daily report on catches while at the EEZ - Exiting the EEZ shall also be reported, and within the next 72h a report detailing all fishing activities shall be reported - It is compulsory to have the original licence on board
Mauritania	2 months (01/07/2017-29/08/2017)	<ul style="list-style-type: none"> - Operative VMS at entering the EEZ <p>As no other specific requirements the client is following its standard procedures:</p> <ul style="list-style-type: none"> - Entrance and exit at the EEZ shall be notified 3 hours in advance - Daily notification of catches at species level
San Tome and Principe	1-year (07/01/2017-06/01/2018)	<ul style="list-style-type: none"> - Entrance and exit at the EEZ shall be notified 3 hours in advance and notify all catches per species on board - Operative VMS while at the EEZ - It is compulsory to have the original licence on board
Sierra Leona	1-year (21/06/2017-20/06/2018)	<ul style="list-style-type: none"> - Entrance and exit at the EEZ shall be notified 3 hours in advance and notify all catches per species on board - Daily catch report while at the EEZ - Operative VMS while at the EEZ - It is compulsory to have the original licence on board

In accordance with the requirement of MSC SA4.1.4, since there is an international cooperation agreement for the management of the fishery, it is not necessary to evaluate the performance of the different fisheries management bodies involved.

It is considered that the fishing operations of the UoA are developed in accordance with the Recommendations and Resolutions formulated by ICCAT, as well as with the legislation of the flag of the ships that integrate it.

3.5.2. Entities and institutions involved in the management of the assessed fishery

Below are listed the main entities and institutions involved in the management of the tropical tuna fishery in the East Atlantic, detailing their roles and responsibilities:

International institutions for fisheries management and / or research:

- **The International Commission for the Conservation of Atlantic Tuna (ICCAT).** Is responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas. **Figure 3-27** shows the ICCAT organigram. However, the Commission may convene other Working Groups as required, as it was the case of the standing WG on dialogue between fisheries scientists and managers, or the *ad hoc* WG on FADs. The following bodies are highlighted in relation to the assessed fishery:
 - **Panel 1: Tropical tunas (yellowfin, bigeye and skipjack).** Responsible for keeping under review the three species of tropical tunas (yellowfin, bigeye and skipjack) and for collecting scientific and other information relating thereto. Based on investigations from the SCRS, Panels may propose to the Commission recommendations for joint action by the Contracting Parties. Currently chaired by: Côte d'Ivoire.
 - **Standing Committee on Research and Statistics (SCRS).** Develop and recommend to the Commission policies and procedures in the collection, compilation, analysis and dissemination of fishery statistics as may be necessary to ensure that the Commission has available at all times complete, current and equivalent statistics on fishery activities in the Convention area. The SCRS is composed of other subsidiary bodies, two Sub-Committees (Statistics and Ecosystems) and different Species WGs (there is one species WG devoted to tropical tunas).
 - **Conservation and Management Measures Compliance Committee (COC).** Reviews all aspects of compliance with ICCAT conservation and management measures in the ICCAT Convention Area, with particular reference to compliance with such measures by ICCAT Contracting Parties.
 - **Permanent Working for the Improvement of ICCAT Statistics and Conservation Measures (PWG).** Obtains, compiles and reviews all available information on the fishing activities of non-Contracting Parties, for species under the purview of ICCAT, including details on the type, flag and name of vessels and reported or estimated catches by species and area.
 - **Standing Working Group on Dialogue between Fisheries Scientists and Managers (SWGSM).** It aims to enhance communication and foster mutual understanding between fisheries managers and scientists, by establishing a forum to exchange views and to support the development and effective implementation of management strategies,
- **International Seafood Sustainability Foundation (ISSF)** was formed in 2009 as a global, non-profit partnership among the tuna industry, scientists and WWF. The group states its mission is to undertake science-based initiatives for the long-term conservation and sustainable use of tuna stocks, reducing bycatch and promoting ecosystem health. ISSF Participating Companies (Jealsa-Rianxeira Group is among them) commit to conform to a set of ISSF conservation measures and commitments (see **section 3.2.5** for more details) to improve the long-term health of tuna fisheries. The compliance with these measures is being audited by MRAG. ISSF also maintains a Pro-active Vessel Register (PVR list) which implies the vessels being audited by MRAG (the assessed vessels are included in that list). ISSF have developed a comprehensive Guide on good practices and they provide regular trainings to skippers, captains and crew (the assessed fleet has attended to these trainings).

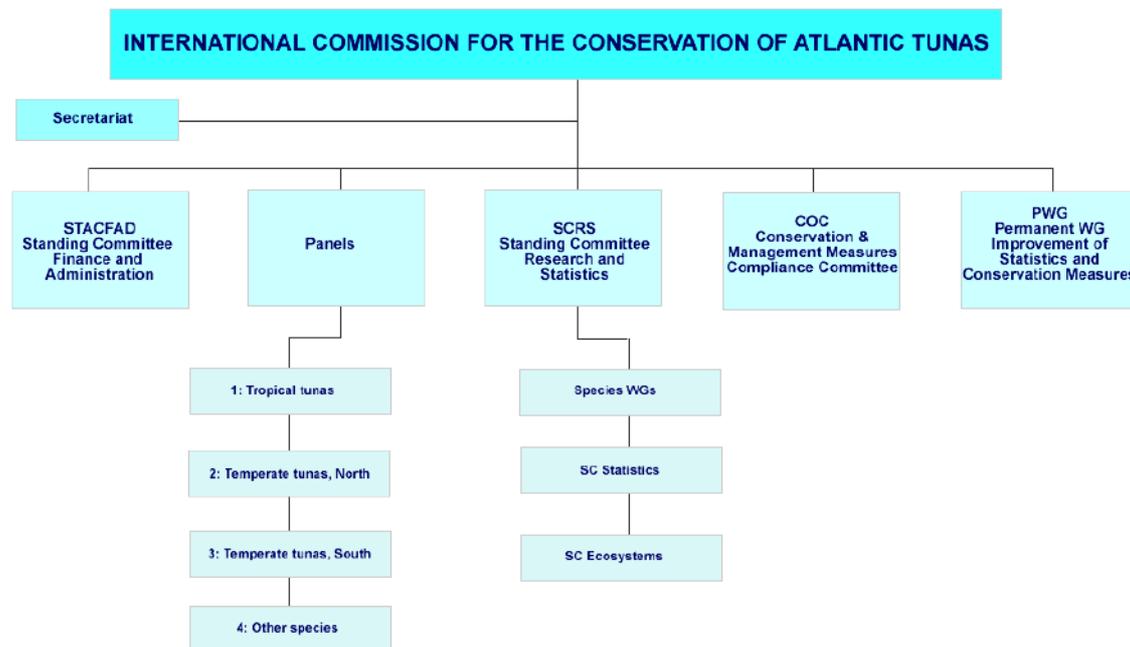


Figure 3-27. ICCAT Organigram. Source: <https://www.iccat.int/en/organization.html>

National institutions for fisheries management and / or research:

- **Directorate of Fisheries and Aquaculture Regulations (DIPESCA) under the Ministry of Agriculture, Livestock and Food of Guatemala.** DIPESCA is the competent authority in fisheries management in accordance with the General Law on Fisheries and Aquaculture. In the case of the assessed fishery, DIPESCA is the authority that monitors the assessed fleet accomplish with ICCAT and National regulations. After every fishing trip they receive logbook and landing declaration so they can cross check them before issuing the catches certificate (this document is compulsory for importing the product into the European Union). Further they also receive an annual report from the Jealsa-Rianxeira Group accounting for all final figures of processed and wet weight per species. Based on all these documents DIPESCA prepares an annual report of tuna catches from Guatemala to ICCAT.
- **Spanish Institute of Oceanography (IEO).** It is an autonomous body, classified as a Public Research Organization, under the Ministry of Science, Innovation and Universities. The IEO is member of the SCRS and is the official representative of the Spanish Government both at this Committee and at the ICCAT Working Groups, contributing with information, knowledge and resources. Among other functions, the IEO maintains programs of fishery observers in different Spanish fleets. The IEO was in charge of the observer program on board the assessed fleet between May 2012 and April 2017 thanks to an agreement signed between the IEO and OPAGAC / AGAC to comply with ICCAT requirements related to observers. This contract finalised in April 2017.
- **Sea Eye.** Consultancy Company based in Côte d'Ivoire specializing in fisheries and observer programs in particular. Jealsa-Rianxeira signed in 2017 a contract with this consultancy to maintain the observer program after the contract with the IEO has finalised. Sea Eye observers have been trained by AZTI and CRO (Centre de Recherches Océanographiques de Abidjan) according to the National Observer Data Collection Programme established by ICCAT, in accordance with qualifications required by Rec 16-14.
- **AZTI-Tecnalia.** Technological Centre based in the Basque Country (Spain) that provides various services in marine and food innovation. AZTI carries out fisheries research and consultancy, and among other services they compile the fishery statistics of the Basque tuna fleet and carry out scientific monitoring of these fisheries, including the coordination of observer programs and the installation and validation of Electronic Monitoring Systems

(SMEs). They advise the Basque Government on fisheries matters, for which representatives of AZTI participate in meetings of the SCRS and different Working Groups. AZTI is also responsible for supervising on annual basis the implementation of the OPAGAC / ANABAC Code of good practices on the member's vessels. This includes to compile and review observer data collected by Sea Eye on board the assessed vessels. In order to accomplish this task a MoU was signed with Sea Eye in November 2014.

Institutions of the fishing industry:

- **Jealsa-Rianxeira Group.** The Jealsa-Rianxeira Group of Companies based in Galicia (Spain) integrates various companies related to fishing and canning. Sant Yago Tuna Fisheries N.V. is part of the Jealsa-Rianxeira group.
- **OPAGAC/ AGAC.** Jealsa-Rianxeira is member of the Association of Freezer Tuna Freezers (AGAC) and the subsequent Organization of Producers of Frozen Tuna (OPAGAC). In relation to the assessed fishery, the main powers of OPAGAC / AGAC are: i) to sign bilateral fishing agreements with the West Africa coastal countries in whose EEZs the UoA operates; ii) to have signed an agreement with the IEO in 2012 that enabled the implementation of an IEO observer program in the fleet assessed until March/April 2017; (iii) to develop and implement a Code of Conduct on good practices on board (together with ANABAC) which is being verified by AZTI and monitored by a Steering Committee.

3.5.3. Access rights to the fishery and allocation of fishing opportunities

Resolution 15-13 establishes a series of criteria on the part of ICCAT for the allocation of fishing possibilities. The qualifying criteria for receiving quota allocations within the framework of ICCAT are the following: (1) to be a Contracting or Cooperating non-Contracting Party, Entity or Fishing Entity (CPC); (2) to have the ability to apply the conservation and management measures of ICCAT, to collect and to provide accurate data for the relevant resources and, taking into account their respective capacities, to conduct scientific research on those resources. Subsequently, a series of allocation criteria are established accounting for both biological and socio-economic aspects. Finally, conditions for applying allocation criteria are also established.

Rec 16-01 also establishes that *“CPCs shall issue **specific authorizations** to vessels 20 meters LOA or greater flying their flag allowed to fish bigeye and/or yellowfin and/or skipjack tunas in the Convention area, and to vessels flying their flag used for any kind of support of this fishing activity”*. The Commission shall establish and maintain an ICCAT record of authorized tropical tuna vessels, including support vessels. Fishing vessels 20 meters LOA or greater not entered into this record are deemed not to be authorized to fish, retain on board, tranship, transport, transfer, process or land bigeye and/or yellowfin and/or skipjack tunas from the Convention area or to carry out any kind of support to those activities, including deploying and retrieving FADs and/or buoys. Finally, each CPC shall, by 31 July each year, notify to the ICCAT Executive Secretary the list of authorized vessels flying their flag which have fished tropical tunas in the Convention area or have offered any kind of support to the fishing activity in the previous calendar year. In the case of the bigeye tuna, Rec 16-01 also includes some capacity limitation measures, but any of them is applicable to Guatemala.

Article 25 of the General Fisheries and Aquaculture Law of Guatemala establishes that national flag vessels used by commercial tuna fishing license holders are subject to the quota allocations recognized to Guatemala by the corresponding Regional Fisheries Organization. Allocated quotas are property of the State of Guatemala. The holders of those licenses must pay a monthly rate proportional to the net registered tonnage of the vessel.

3.5.4. Scientific monitoring of the fishery

ICCAT is the fishing organization responsible for coordinating the work required for the study and regulation of tuna and tuna like species in the Atlantic. According to Article IV of the Basic Texts of the Convention: *“Such study shall include research on the abundance, biometry and ecology of the fishes; the oceanography of their environment; and the effects of natural and human factors upon their abundance. The Commission, in carrying out these responsibilities shall, insofar as feasible,*

utilise the technical and scientific services of, and information from, official agencies of the Contracting Parties and their political sub-divisions and may, when desirable, utilise the available services and information of any public or private institution, organization or individual, and may undertake within the limits of its budget independent research to supplement the research work being done by governments, national institutions or other international organizations". Representatives of the research centres of the different CPCs are members of the SCRS, which plans and coordinates these tasks.

In addition, there are multiple Recommendations that oblige CPCs to report their fishing activities according to ICCAT standards, as well as having on-board observer programs. Rec 03-13 states that each CPC shall ensure that all fishing vessels flying its flag and authorized to fish species managed by ICCAT in the Convention area be subject to a data recording system. All commercial fishing vessels over 24 m length overall shall keep a bound or electronic logbook recording the information required in the ICCAT Field Manual for Statistics and Sampling. Further, Rec 16-01 establishes that each CPC shall ensure that its vessels 20 m LOA or greater fishing tropical tunas record their catch in accordance to specific requirements, and in the case of FOB sets a specific FAD logbook is required.

In the case of the evaluated fishery, observer coverage during the time-space closure established in the Gulf of Guinea between January 1 and February 28 must be 100%, as established in Rec 16-01. However, as recognized by the SCRS some fleets are currently implementing voluntary observer programmes that cover 100% of the fishing trips, as it is the case of the assessed fleet.

The SCRS has been running since 2012 a sampling program in port with the objective of collecting small data on yellowfin, skipjack and bigeye caught in the area of the closure.

The purpose of the SCRS is for the Commission to have the most complete and up-to-date statistics on the fishing activities carried out in the Convention area, as well as biological data on the fished populations. Therefore, it is ensured that the Commission takes decisions based on the fishery-dependant data which are reflecting current trends and conditions of the fishery resources in the area.

Most research activities on Atlantic tuna and tuna-like species are carried out by scientists from national research institutes or universities of Contracting Parties. Special Research Programs are used by ICCAT as a mechanism to help focus, coordinate and complement those national research activities. The programs usually centre on improving biological knowledge and fishery data for a particular species, and usually last a few years. In some cases they are funded by the Commission as part of the regular budget and in some cases they are funded by contributions from individual Contracting Parties and other agencies. The following is a list of ICCAT Research Projects conducted to-date which are related to the assessed fishery:

- **Atlantic Ocean Tropical Tuna Tagging Programme (AOTTP):** The AOTTP is a five year programme funded by the European Union (DCI-FOOD/2015/361-161), ICCAT CPCs and Contributors. The project officially began on 29 June 2015. The overall objective of the AOTTP Programme is to contribute to food security and economic growth of the Atlantic coastal states by ensuring sustainable management of tropical tuna resources in the Atlantic Ocean. Specifically it will provide evidence-based scientific advice to developing Atlantic coastal states, and other ICCAT Contracting Parties, for them to adopt appropriate Conservation and Management Measures within the Framework of the International Commission for the Conservation of Atlantic Tunas (ICCAT). These objectives will be realized by improving the estimation – derived from tag-recapture data - of key parameters for stock assessment (i.e. growth, natural mortality, migrations and stock-structure).
- **Enhanced Program for Billfish Research (EPBR).** Duration: 1987-present with funding from the Commission and other donors. Objective: To obtain more complete detailed catch and effort statistics for billfishes, to carry out an expanded tagging program, and to carry out studies on age and growth.

- **Small Tunas Year Program (SMTYP).** Duration: 2016-2017 with funding from the Commission. Objectives: To recover small tuna's historical data (statistical and biological data) from the main ICCAT fishing areas.
- **Shark Research and Data Collection Programme (SRDCP).** The SRDCP is contained within the 2015-2020 SCRS Strategic Plan. Although efforts are being made in recent years to improve shark data collection and research, the current knowledge on many fisheries and basic biology is still limited. These gaps in knowledge are responsible for much of the uncertainty in stock assessments, and have caused constraints to the provision of scientific advice. Therefore, the present proposal for a Shark Research and Data Collection Program (SRDCP) represents a further step to align with ICCAT Res. 11-17 on Best Available Science, to fill knowledge gaps on fisheries and biology issues by improving data collection, cooperation and capacity building. In order to achieve these goals, the SRDCP aims to provide guidance to SCRS researchers, by prioritizing those issues related to data collection and research lines on species biology/ecology, fisheries and mitigation measures. Finally, by promoting coordination between SCRS researchers, the SRDCP aims to improve the quality and reduce the uncertainty of the scientific advice on sharks provided to the Commission, and to better assess the impact of management measures on these species.

ICCAT has facilitated the participation of interested parties and also offers training and support to countries that lack data management and fishery science capacities, in order to achieve full integration in research and data collection activities.

3.5.5. Fisheries monitoring, control and inspection systems

With regard to monitoring, control and inspection (MCS) activities, ICCAT's strategies to improve compliance area based on keeping an updated (and coordinated with other RFMOs) list of IUU vessels, the obligation to record and report data (including VMS), monitoring of catches and fishing activities by observers, diplomatic pressure and other pressures applied to CPCs as well as non-contracting ones.

In the case of the tropical tuna fisheries, Rec. 16-01 establishes some measure to control the access to the fishery (see **section 3.5.3**).

At the regional level, ICCAT has adopted and continues to adopt measures to encourage countries to become CPCs, as well as for non-Contracting Parties to cooperate with the conservation measures of the organization. The success is reflected in the increase of the membership in the last decades and in the high level of participation.

At a national level, DIPESCA is responsible for receiving, compiling, analysing and reporting on an annual basis to the ICCAT Secretariat catch data from the assessed fleet. The logbook and the landing declaration are sent by the client to DIPESCA at the end of each fishing trip, so they can cross check them before issuing the catches certificate (this document is compulsory for importing the product into the European Union). VMS data are reported automatically. Further they also receive an annual report from the Jealsa-Rianxeira Group accounting for all final figures of processed and wet weight per species. Based on all these documents DIPESCA prepares an annual report of tuna catches from Guatemala to ICCAT. There are no other vessels flying the Guatemalan flag and targeting yellowfin tuna in the East Region of the Atlantic. They also perform an annual on-site audit of the assessed vessel in Abidjan.

4 Evaluation Procedure

4.1. Harmonised Fishery Assessment

4.1.1. Harmonisation process

In accordance to FCR PB3.1 CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessment.

All fisheries operating in the Atlantic and targeting tunas or tuna-like species (and therefore subject to ICCAT management) which have entered an MSC assessment process are listed in **Table 4-1**, regardless if they are currently certified, withdrawn or exiting.

Table 4-1. Other MSC tuna certified (or in assessment) fisheries operating in the Atlantic (last update: Sept 2018)

Fishery	Fishing Method	Geographical area	P1 species	P2 main species	MSC Status and Version
St Helena pole & line and rod & line yellowfin, bigeye, albacore and skipjack tuna	Handlines and pole-lines	SE AT (FAO47)	YFT, BET, SKJ, ALB	-	Exiting
North Atlantic Albacore Artisanal Fishery	Pole-lines and trolling	NE AT (FAO 27)	ALB	none	Certified (CR V1.3)
North West Atlantic Canada harpoon swordfish	Harpoons	NW AT (FAO 21)	SWO	none	Certified (CR V1.3)
North West Atlantic Canada longline swordfish	Longlines	NW AT (FAO 21)	SWO	BET, BFT, BSH,	Certified (CR V1.3)
SSLLC US North Atlantic swordfish Longline	Longlines	NW AT & WCentral AT (FAO 21 & 31)	SWO	YFT, BET, ALB, BFT, SMA, DOL, BSH, BUM, WHM, FAL ...	Withdrawn (CR V1.2)
US North Atlantic swordfish	Longlines	W Central AT (FAO 31)	SWO, ALB*, YFT*	BET, BFT, DOL, SMA, BUM, WHM, BSH, BTH, LMA	Certified with components in assessment (*) (CR V1.3)
Southeast US North Atlantic swordfish	Longlines	W Central AT (FAO 31)	SWO	BET, YFT, ALB, BFT, DOL, SMA, BUM, WHM, SAI, DUS	Withdrawn (FAM v.2.1)
North and South Atlantic swordfish Spanish longline fishery	Longlines	E central AT, NE AT, NW AT, SE AT, SW AT (FAO 34, 27, 21, 47, 41, 31)	SWO	BSH, SMA	Withdrawn (CR v.2.0)
ACTEMSA-LEAL SANTOS pole and line West Atlantic skipjack fishery	Pole-lines	SW AT (FAO Area 41)	SKJ	-----	Under assessment
Usufuku Honten Northeast Atlantic longline bluefin tuna fishery	Longlines	NE AT (FAO Area 27)	BFT	-----	Under assessment

At the time of announcing the fishery was entering the MSC assessment process, there was no other certified fishery with the Atlantic yellowfin tuna assessed under P1. Despite the Canadian and American swordfish fisheries do not geographically overlap with the assessed fishery, some tuna stocks are considered as single Atlantic-wide stock by the SCRS. This is relevant since the US North Atlantic swordfish fishery announced an expedited assessment on the 9th of March 2018 to extend its scope and include the Atlantic yellowfin within the P1. Therefore, the following activities were accomplished both by BV and MRAG-America in accordance with Annex PB3.1 and PB3.2:

- Following the announcement of the Sant Yago fishery, MRAG-America team contacted with the BV team via email to inform about the intention to carry out an extension of the scope, including the P1-assessment of the Atlantic yellowfin tuna, once their re-assessment process of the US North Atlantic swordfish was over.
- The expedited audit for the extension of the scope of the US North Atlantic swordfish was announced on the 9th of March 2018
- BV proceeded to share the P1 draft scores with the other CAB

- An introductory conference call to share first impressions on the scores held on the 18th of April. Attendants: Monica Valle on behalf of MRAG-America and Carola Kirchner, Macarena García and José Ríos on behalf of BV.
- After the call MRAG prepared their scores and shared them with the BV team
- Several calls were held until both teams reached an agreement on final scores for P1 and common conditions. The final scores are represented in Table 22. The only PI with slight different score was PI 1.2.4. The scoring issues differs between FCR v2.0 and CRv1.3.

Table 4-2. Table comparing scores obtained by the 2 overlapping fisheries targeting Yellowfin

Performance Indicator (PI)		Sant Yago (under assessment)	US North Atlantic swordfish (expedited assessment for YLF)
1.1.1	Stock status	70	70
1.1.2	Stock rebuilding	90	90 (PI 1.1.3 v1.3)
1.2.1	Harvest strategy	95	95
1.2.2	Harvest control rules & tools	65	65
1.2.3	Information & monitoring	80	80
1.2.4	Assessment of stock status	95	90
Overall score P1		82.5	81.3

The only two fisheries presenting a geographical overlap with the assessed fishery (the Santa Helena tuna fishery and Spanish swordfish longline fishery) were withdrawn from the MSC process.

All the other certified fisheries were assessed against previous versions of the MSC CR.

However, all fisheries listed in **Table 4-1** are managed by ICCAT. Therefore, in accordance with PB3.3 it will be necessary to ensure consistency of outcomes in certain P3 PIs.

4.1.2. Cumulative impacts

In relation to Cumulative P2 approach, table GSA3 provides the following guidance: *“Teams should note that the ‘overlapping UoAs’ are assessed at different levels depending on which PI is evaluated. For P2 primary species, teams need to evaluate whether the cumulative impact of overlapping MSC UoAs hinders the recovery of ‘main’ primary species. For secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have ‘main’ catches that are ‘considerable’, defined as a species being 10% or more of the total catch. For ETP species, the combined impacts of MSC UoAs needs to be evaluated, but only in cases where either national and/or international requirements set catch limits for ETP species. All of the requirements for cumulative impacts for species are applicable to their respective Outcome PIs. For habitats, in contrast, cumulative impacts are evaluated in the management PI (2.4.2). The requirements here aim to ensure that vulnerable marine ecosystems (VMEs) are managed such that the impact of all MSC UoAs does not cause serious and irreversible harm to VMEs.”*

Therefore, in the case of the assessed fishery:

- Both the East Atlantic Skipjack tuna stock and Atlantic bigeye tuna stock were classified as main primary components to be assessed under P2 in this assessment (Table 3-17). However, cumulative impact on main primary species is only required for those species which are below PRI and this is not the case for any of these two stocks (see scoring table for 2.1.1 –Appendix 1-).
- As there are no main secondary species, there is no need to assess cumulative impacts on the Secondary component.

- As explained in PI2.3.1 assessed some ETP species are subject to a limit of zero commercial catches (Extractive ban), but there is no limit set to incidental mortality. Therefore, there is no need to assess cumulative impacts on the ETP component.
- In relation to assess cumulative impacts on the management of VMEs, the assessed fishery does not interact with VMEs. However, ICCAT management measures in place for protecting benthic habitats and VMEs in particular where assessed and scored in PI2.4.2.

4.2. Previous assessments

The assessed vessel only entered in the fishery in September 2017. Therefore, there was no chance for the client operations to be previously assessed. However, earlier that year the client had assigned a pre-assessment of the fishery to BV. This pre-assessment was handed to the client in May. Initially, at the client’s request, this pre-assessment considered skipjack as the species to be assessed against P1. However, results discouraged a full P1 assessment of the East Atlantic skipjack stock, while it was decided to promote the assessment of the Atlantic yellowfin stock from P2 to P1. An ‘expedited P1 pre-assessment’ of the Atlantic yellowfin was commissioned to Carola Kirchner and annexed to the initial skipjack pre-assessment. As a result it was concluded that the Atlantic yellowfin fishery should comply with MSC Certification Requirements since: (i) any of the likely scoring levels for each of the PIs was found to be <60; (ii) the weighted average of each of the 3 Principles is likely above 80. This pre-assessment was handed to MSC together with the Notification Report as part of the process to announce the fishery, as required by FCR 7.8.8.

4.3. Assessment Methodologies

The fishery was assessed against Version 2.0 of the MSC Fisheries Certification Requirements (1st October 2014). The assessment team used the default assessment tree (SA) without adjustments. The MSC Full Assessment Reporting Template V2.0 (issued by MSC on the 8th October 2014) was used as basis for this report.

4.4. Evaluation Processes and Techniques

4.4.1 Site Visits

The 3-day site visit was held in January 2018 and took place in three different places in Spain: Boiro, Madrid, Bilbao. The 3 members of the assessment team took part in all meetings held during the site visit.

BV identified and contacted the most relevant stakeholders in order to elaborate a comprehensive agenda for the site visit. Meetings were scheduled and carried out in Boiro, Bilbao and Madrid between the 7th and the 10th of January 2018. Also, in those cases where face to face meetings were not possible, conference calls were organized during the site visit. The resulting agenda, including institutions visited and people met, is presented in **Table 4-3**.

Table 4-3. Details of the meetings maintained during the site visit. BV team members participated in all meetings detailed below.

Date and place	Time	Venue	Attendants	Company and position
January 7	<i>Arrival of the team to Santiago de Compostela. Introductory meeting at the hotel</i>			
	09:00	<i>Drive from Santiago to Boiro</i>		
January 8 Boiro	10:15- 12:30	Jealsa headquarters in Boiro	- Ángeles Claro - Jorge Sanisidro Araujo	- Jealsa (Sustainability manager) - Sant Yago (Fleet deputy manager)
	12:30- 13:30		- Javier Rico García	Skipper f/v Sant Yago I

	15:30-16:00	Conference call	- Manoel Jose Cifuentes - Nancy Sandoval - Freddy - Daniel Vazquez	Dipesca representatives
	16:00	<i>Drive from Boiro to the hotel in Vigo.</i>		
9 January	09:00-10:30	At the hotel	<i>Pre-scoring meeting I (assessment team)</i>	
	12:00	<i>Domestic flight from Vigo to Bilbao (arrival at 13h)</i>		
	14:00-18:00	AZTI headquarters in Bilbao	- Josu Santiago - Jon Ruiz - Jon Lopez	- Head of research area - Senior researcher - Researcher
	(in between)	headquarters in Bilbao	- Skype meeting with Sea Eye (observer's agency based in Abidjan)	- Hoto Edith Michele - Zeze Kouaty Loïc Andréa
	20:50	<i>Domestic flight from Bilbao to Madrid (arrival at 21:40h)</i>		
10 January	09:45-11:00	WWF-Spain headquarters in Madrid	- Jose Luis García Varas - Raul García	- Head of the Marine Program at WWF-Spain - Responsible for fisheries at WWF-Spain
	12:00-16:00	At the hotel	<i>Pre-scoring meeting II (assessment team)</i>	
	16:15-17:00	Conference call (Closing meeting)	- Ángeles Claro - Jorge Sanisidro Araujo	- Jealsa (Sustainability manager) - Sant Yago (Fleet deputy manager)
	17:00-18:00	At the hotel	<i>Pre-scoring meeting III (assessment team)</i>	

4.4.2 Consultations

The announcement of the fishery entering the MSC assessment process was made publicly available at the [MSC website](#) on September 11, 2017.

In addition, a comprehensive list of 51 stakeholders was elaborated with the assistance of the client. This list included Guatemalan and Spanish management bodies (SGP, Dipesca), ICCAT bodies (Secretariat, SCRS, Tropical tunas panel, COC), Spanish research centres (AZTI, IEO), conservationist NGOs (WWF, Greenpeace, Seo-Birdlife International, Oceana, Bloom, Animal Welfare...), Associations representing the Spanish tuna fishing companies (Anabac y Opagac), ISSF and also MRAG as the CAB in charge of the overlapping fishery to be harmonized. After the announcement was released all these stakeholders were contacted via e-mail and were encouraged to participate in the site visit and also to provide feedback to the assessment team at any moment throughout the process. Delays in the assessment process motivated that the CAB opened a new 30-day stakeholder's consultation period on 12th of June 2018, in accordance with FCR 7.34. However, no comments were received during these consultations periods.

As described in previous section the assessment team performed a site visit which included meetings with relevant fisheries managers, scientists and client's representatives (see **Table 4-3**). Feedback obtained from all the interviewed stakeholders allowed the team to collect information on different details of the fishing operations at sea (handling, storage, identifications of free swimming schools, storage), offloading, inspections at port, selling (sales notes, invoices), observers program, scientific monitoring, and other relevant issues. Information collected was used to elaborate Section

3 (Description of the fishery) and Section 5 (Traceability), and also to evaluate and score the assessed fishery using the default tree (Annex SA) as shown in Section 6 (Evaluation Results). A closing meeting with the client was held before finishing the surveillance audit as required by ISO 19011.

BV submitted a request to the MSC's Peer Review College to assign peer reviewers to this assessment process. The College compiled a shortlist of 4 potential experts to undertake the peer review for the PRDR. This list, including a summary of the experience and qualifications of the reviewers was published at the MSC website on the 24th July, 2018.

4.4.3 Evaluation Techniques

The full assessment was publicly announced on 11th September 2017 at the [MSC website](#) and supplemented by emailing a list of relevant stakeholders (see **section 4.4.2**). This was also the method used for consultation on subsequent steps (e.g. peer reviewers announcement...). See **Section 4.4.2** for a detailed list of all consultations that took place at different stages along the process. However, meetings and conference calls held during the site visit constituted the main tool in guaranteeing the participation of relevant stakeholders.

Additionally, the assessment team has reviewed documents sent by the client (contract with Sea Eye, fishing agreement with West Africa coastal countries, different documents sent by the client in relation to the verification of the implementation of the OPAGAC/ANABAC code of good practices and AENOR1956009:2016, ISSF PVR list,...), scientific literature, Guatemalan fisheries and environmental regulations, ICCAT Recommendations and Resolutions, Reports and methods (e.g. Biennial reports, Report of the independent performance review of ICCAT, ICCAT manual, ...), and scientific publications.

Scoring was performed according to the procedure established in Certification Requirement 7.10 (MSC FCR v2.0). The assessment team held a preliminary scoring meeting during last day of the site visit where the Performance Indicators of the fishery were evaluated jointly by the team in order to assess whether there was still information needs to be communicated to the client. After the site visit, each expert got in charge of finishing its part of the report before proceeding to a joint evaluation of every PI and the pertaining scoring systems during two scoring meetings which took place via conference calls.

The Sant Yago TF unassociated purse seine Atlantic yellowfin tuna fishery ACHIEVED a score of 80 or more for each of the three MSC Principles, and DID NOT SCORE less than 80 for ANY of the set MSC Criteria. **The assessment team therefore recommends certification of this fishery.** Five conditions were issued to the fishery. Default performance indicators and the scores allocated in the evaluation are enclosed in **Appendix 1.1**

The set of the species scoring elements considered in Principle 2 has already been presented in Table 3-17 (all species susceptible to interact with the UoC, this table was used to identify all primary and secondary scoring elements to be assessed) and Table 3-21 (ETP species which have interacted with the UoA/UoC, this table was used to identify the ETP scoring elements to be assessed), its identification and classification was justified in **Sections 3.4.1** (for Primary and Secondary) and **3.4.4** (for ETPs).

4.5.3 Risk Based Framework

The Risk Based Framework (RBF) was adopted by the MSC to enable scoring of fisheries in data-deficient situations, and it is designed to allow the assessment of specific PIs (1.1.1, 2.1.1, 2.2.1, 2.3.1, 2.4.1 and 2.5.1) using the default assessment tree.

There are sufficient data available to estimate stock status for the Atlantic yellowfin and also the impact of the assessed fishery on the different ecosystem components: primary species, secondary

species, habitats and ecosystems. Therefore, the use of the Risk Based Framework was not invoked in this assessment.

5 Traceability

5.1. Eligibility Date

FCR 7.6.1 states that *“The CAB shall nominate a date from which product from a certified fishery is eligible to be sold as MSC certified or bear the MSC ecolabel (the eligibility date). This shall be either: (7.6.1.1) the date of certification of the fishery; or (7.6.1.2) the publication date of the first Public Comment Draft Report”*.

For this fishery, in accordance with the client’s will, **the eligibility data will be the publication of the first PCDR.**

In accordance with FCR7.6.2, BV has informed the client that any fish harvested after the eligibility date and stored as under-assessment fish shall be handled in conformity with relevant under-assessment product requirements in the MSC Chain of Custody standard, meaning that:

- Only the assessed fishery and named members of the client group are eligible to handle and/or purchase under-assessment product. These organizations can use subcontracted storage facilities to handle under-assessment product, as long as the fishery or client group member retains ownership until such time as the fishery is certified.
- Organisations handling under-assessment product shall comply with the following requirements:
 - i. All under-assessment products shall be clearly identified and segregated from certified and non-certified products
 - ii. The organisation shall maintain full traceability records for all under-assessment product, demonstrating traceability back to the unit of certification and including the date of harvest.
 - iii. Under-assessment products shall not be sold as certified or labelled with the ecolabel, logo, or trademarks until the source fishery or farm is certified.

In June 2016, due to commercial reasons, the client is segregating fad-free tuna catches from those which are not fad-free caught. In order to do so, the client developed and implemented an internal protocol detailing how to identify, record, store and offload fad-free catches (see **section 5.2** for more details). More recently, the client has developed a specific protocol for MSC-certified products where it is stated that only fad-free yellowfin tuna can be considered as MSC-certified.

The client is been audited against MSC Chain of Custody against the Default CoC Standard (multi-site certificate). Both vessels will be audited on board before the Public Certification Report (PCR) publication (see **section 5.2** for more details). The intend of handling under-assessment products was addressed during these audits.

Therefore, the CAB ensures that the client is ready to implement appropriate traceability and segregation systems for MSC under-assessment product by the date the PCDR is published.

5.2. Traceability within the Fishery

5.2.1 Traceability and segregation systems on board

Since June 2016 the client has enforced a protocol on board to trace and segregate fad-free tuna catches. The protocols starts by stating the definitions of FAD and FAD-FREE catches, these definitions are aligned with those presented in **section 3.2.4**. Following, the procedure details the different operational procedures to be adopted at the different stages in order to ensure traceability and segregation of catches originating from FAD sets from those caught from free swimming tuna schools (or unassociated sets):

1. Once the vessel has performed a set on a free swimming tuna school, the captain shall identify it as 'free swimming school' ('banco libre' in Spanish) at the logbook and record at least the following information: date, time, position, species, estimated size category and weight, and the fish hold/s where the catch will be stored. A fish hold plan will be elaborated and kept updated during each fishing trip for this purpose.
2. Fish holds containing FAD FREE shall not be mixed with catches coming from sets on FADs. In the event that both types of products are mixed, then the FAD-FREE denomination would be lost. Only 100% FAD-FREE fish holds will be accepted.
3. During offloading, fish holds classified as FAD-FREE shall be offloaded separately and avoid mixing with fish from other fish holds.
4. In case of transfer to the merchant or container, the fish FAD FREE will be separated by a separation network so that it can be identified and unloaded at the destination. In case of unloading to the local factory, the fish FAD FREE will be offloaded in separate and identified boxes. In the case of transshipment onto a reefer or container the FAD-FREE product shall be segregated by appropriate means (e.g. using net), so that it can be identified at destination. In case of offloading the product directly to a processing plant, the FAD-FREE product shall be offloaded in separate trucks and/or boxes and stored separately.
5. The captain of the fishing vessel, the observer, the consignee, the captain of the reefer or the person responsible for offloading at a processing plant or container shall verify, in a document issued for that purpose, that the fish caught and stored in identified fish holds is indeed FAD-FREE. This document identifies the FAD-FREE fish and guarantees its traceability and segregation.

According to the protocol, the following responsibilities are allocated:

- Captain of the fishing vessel: responsible for the allocation of the FAD FREE denomination to the catches.
- Observer: as a true guarantee that an external and independent entity has been present during the catch and storage of FAD FREE product in separate fish holds.
- Consignee: as a true guarantee that an external and independent entity has been present during the offloading of the FAD-FREE fish and verifies the offloaded / trans-shipped volumes
- Reefer captain: as a true guarantee that an external and independent entity verifies that the FAD-FREE product has been stored in a particular hold of the reefer and segregated from other products using a net. A reefer hold plan indicating the location of the FAD-FREE product will be elaborated to ensure its identification at destination.
- Person responsible for offloading at a local factory or container: as a true guarantee that an external and independent entity has been present during the offloading of the FAD-FREE product at the local factory or container and certifies that it has been offloaded and loaded into the container separately or during the transport and storage at the factory.

Finally, as a guarantee of transparency the protocol also establishes that a customer or a third party may request at any time evidence that the catch is indeed FAD-FREE fish. Thus, it is very important to assign the FAD-FREE fish in the following documents:

- ✓ Fish hold plan (Plano de cubas)
- ✓ Logbook
- ✓ Reefer's Hold plan or Container's plan
- ✓ FAD FREE declaration signed by the fishing captain, the observer, the consignee and the reefer captain (in the case of transshipment) or other person in charge (in the case of offloading to processing plant or containers)

More recently, the client has been preparing a specific protocol for MSC-certificated catches in order to be prepared in case the assessment yields a positive result. This protocol follows exactly the same operational procedures but establishing that only the FAD-FREE Yellowfin tunas will be considered as MSC-certificated product. Further, this protocol also address specific MSC Chain of Custody requirements (i.e. reporting changes, non-conforming products...).

The client requested to Bureau Veritas the certification against the MSC Chain of Custody Scheme. Due to logistic issues only one vessel audit has been performed (f/v Sant Yago I) at Riveira (Galicia, Spain) on the 23th of April 2018. F/v Sant Yago III will be audited before the PCR it is been published. Although no MSC-certified product (or under-assessment) had been handled before those audits, traceability tests were performed using fad-free product which the client is already selling as a different product from catches associated to FADs. Two fishing trips were randomly chosen by the auditors for each vessel. All records linking the different steps were reviewed: initial records at the logbooks, fish hold plans, reefer hold plans, fad-free declarations, and invoices issued by Sant Yago TF... The intend of handling under-assessment product was also addressed during these audits.

5.3.1 Determination of risk associated to traceability factors prior to entering CoC

In accordance to MSC requirements **Table 5-1** includes a description of factors that may lead to risks of non-certified fish being mixed with certified fish prior to entering CoC. For each risk factor, there is a description of whether the risk factor is relevant for the fishery, and if so, a description of the relevant mitigation measures or traceability systems in place.

Table 5-1. Traceability Factors within the Fishery. Adapted from MSC template

Traceability Factor	Description of the risk factor including traceability systems in place and mitigation measures (if needed)	Determination (Relevant/Not relevant)
Potential for non-certified gear/s to be used within the fishery	<p>These purse seiners included in the UoC target both free-swimming tuna schools (also known as FAD-free tuna or unassociated tuna) and tuna associated to Fishing Aggregation Devices (FADs) within the same fishing trip. Only sets on free swimming tuna schools were included in the current assessment.</p> <p>Therefore, the risk associated to mixing catches from sets associated to FADs with certified catches from unassociated sets is relevant. As explained in previous section the client has been tracing and segregating catches from both types of catches since June 2016 due to commercial reasons and they have developed and implemented operational protocols to ensure it. However, the CAB, following the MSC additional guidance for tuna fisheries, required that Chain of Custody was required at sea due to the high risk of mixing and/or substitution.</p>	The risk associated to this traceability factor is considered to be RELEVANT
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	<p>The vessels included in the UoC operate in the East and Southeast Central Atlantic (FAO 34 and 47), both in International waters and in the EEZ of different West African coastal countries. The Atlantic yellowfin is considered to be a single stock for the entire Atlantic Ocean.</p> <p>The assessed vessels are licensed by ICCAT to fish within the Convention Area.</p> <p>Further, all geographical information related to fishing operations carried out during fishing trips is recorded in the electronic logbooks (and VMS) and automatically reported to Dipesca, nation States where the vessels are operating and ICCAT.</p>	The risk associated to this traceability factor is considered to be NOT RELEVANT
Potential for vessels outside of the UoC or client group fishing the same	<p>ICCAT keeps updated list of vessels authorised to catch tropical tunas.</p> <p>However, different traceability systems in place in the</p>	The risk associated to this traceability factor is considered to be

<p>stock</p>	<p>fishery (mandatory catch reporting via electronic logbook, observer coverage...) plus other trading documents (bill of lading, packing lists, sales notes, etc.) ensure that there is no risk of mixing between certified and non-certified fish prior to subsequent CoC associated to this factor.</p>	<p>NOT RELEVANT</p>
<p>Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)</p>	<p>The purse seiners included in the UoC target both free-swimming tuna schools (also known as FAD-free tuna or unassociated tuna) and tuna associated to Fishing Aggregation Devices (FADs) within the same fishing trip. Only sets on free swimming tuna schools were included in the current assessment.</p> <p>The catch from each set is stored in chilled fish holds. Therefore, at storage there is a risk of mixing catches from sets on FADs with certified catches from unassociated sets. As explained in previous section the client has been tracing and segregating catches from both types of catches since June 2016 due to commercial reasons and they have developed and implemented operational protocols to ensure it. According to this protocol only those fish holds containing 100% of catches from unassociated sets will be considered as FAD-FREE product. Then, only the FAD-FREE yellowfin will be considered as MSC-certified product, as established in a specific protocol developed by the client (this protocol will be implemented since the eligibility date).</p> <p>However, the CAB considered that the client shall be assessed against MSC-CoC on board and both vessels were audited against MSC-CoC.</p>	<p>The risk associated to this traceability factor is considered to be RELEVANT</p>
<p>Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)</p>	<p>No processing is carried out in this fishery. The catch is stored in chilled fish holds and then offloaded into a reefer hold or a container.</p>	<p>The risk associated to this traceability factor is considered to be NOT RELEVANT</p>
<p>Risks of mixing between certified and non-certified catch during transshipment</p>	<p>The purse seiners included in the UoC target both free-swimming tuna schools (also known as FAD-free tuna or unassociated tuna) and tuna associated to Fishing Aggregation Devices (FADs) within the same fishing trip. Only sets on free swimming tuna schools were included in the current assessment.</p> <p>The catch from each set is stored in chilled fish holds. Therefore, during transshipment or offloading there is a risk of mixing catches from sets on FADs with certified catches from unassociated sets. As explained in previous section the client has been tracing and segregating catches from both types of catches since June 2016 due to commercial reasons and they have developed and implemented operational protocols to ensure it. According to this protocol fish holds classified as FAD-FREE shall be offloaded separately and avoid mixing with fish from other fish holds. Also, FAD-FREE catches shall be segregated by appropriate means (e.g. using nets) for its stowage at reefer's holds or containers</p>	<p>The risk associated to this traceability factor is considered to be RELEVANT</p>

	However, the CAB considered that the client shall be assessed against MSC-CoC on board and both vessels were audited. These audits also deal with transshipment and offloading.	
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	The CAB did not identify any other risk related to traceability different to those stated above. The vessels were audited against MSC CoC Standard.	-

5.3. Eligibility to Enter Further Chains of Custody

The MSC-certified fish caught by the vessels included in the UoC can be transhipped in African ports (mainly Abidjan or Dakar) onto reefers or containers for its transportation to Spain, or (occasionally) they can also be landed in Spanish ports for its transportation in trucks to the processing plant. In the first case, change of ownership to a party not covered by the fishery certificate only happen after transportation (when the product reaches the processing plant) while in the second case it happens at landing (before being offloaded onto the trucks or containers). However, CoC should commence prior the first point of change of ownership since the vessels included in the UoC are required to have their own on-board MSC-CoC certificate.

All list of eligible transshipment and landing points is presented in **Table 5-2**.

Table 5-2. List of eligible points for transshipment and landing. Source: the client

Type of operation	Place	Jurisdiction
Transshipment (to reefer or container)	Abidjan	Ivory Coast
	Dakar	Senegal
Landing (directly to a processing plant)	Riveira, Pobra do Caramiñal	Spain

The client group (Sant Yago Tuna fisheries, N.V. and associated companies and vessels) is the only eligible to use the MSC fishery certificate and sell products as MSC certified.

The Company will not make use of the ecolabel as whole frozen yellowfin tuna is not a customer-facing product. This product need further processing to reach the customer as canned tuna or fresh tuna loins. Therefore, all canning companies with the capacity to elaborate the products described above are eligible to buy the fishery certificated products. Most of the tuna caught by the vessels included in the UoC is sold to the Jealsa-Rianxeira, a canning company based in Boiro (Galicia, Spain).

The product caught by the UoC and traced and segregated according to the description above is eligible to be sold by the client group as MSC certified and enter further certified CoC. Restrictions on the fully certified product entering further CoC have been imposed since the vessels included in the UoC are required to have their own on-board MSC-CoC certificate.

5.4. Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

No IPI stocks have been identified by BV during the assessment.

6 Evaluation Results

6.1. Principle Level Scores

Table 6-1. Final Principle Scores

Principle	Score
Principle 1 – Target Species	82.5
Principle 2 – Ecosystem	83.0
Principle 3 – Management System	89.4

6.2. Summary of PI Level Scores

Table 6-2. Final Performance Indicator Scores

Principle	Component	Performance Indicator (PI)	Score
One	Outcome	1.1.1 Stock status	70
		1.1.2 Stock rebuilding	90
	Management	1.2.1 Harvest strategy	95
		1.2.2 Harvest control rules & tools	65
		1.2.3 Information & monitoring	80
		1.2.4 Assessment of stock status	95
Two	Primary species	2.1.1 Outcome	95
		2.1.2 Management strategy	95
		2.1.3 Information/Monitoring	95
	Secondary species	2.2.1 Outcome	80
		2.2.2 Management strategy	90
		2.2.3 Information/Monitoring	85
	ETP species	2.3.1 Outcome	75
		2.3.2 Management strategy	75
		2.3.3 Information strategy	65
	Habitats	2.4.1 Outcome	80
		2.4.2 Management strategy	85

	Ecosystem	2.4.3	Information	85
		2.5.1	Outcome	80
		2.5.2	Management	80
		2.5.3	Information	80
Three	Governance and policy	3.1.1	Legal &/or customary framework	85
		3.1.2	Consultation, roles & responsibilities	85
		3.1.3	Long term objectives	100
	Fishery specific management system	3.2.1	Fishery specific objectives	100
		3.2.2	Decision making processes	85
		3.2.3	Compliance & enforcement	80
		3.2.4	Monitoring & management performance evaluation	90

6.3. Summary of Conditions

Table 6-3: Summary of Conditions

Condition number	Condition	Performance Indicator
1	By the end of the certification period the target stock shall be at or fluctuating around its target reference point (B_{MSY}).	1.1.1
2	By the end of the certification period the fishery shall (i) have well defined HCRs in place that ensure that the exploitation rate is reduced as the PRI is approached, and (ii) shall provide available evidence indicating that the tools in use are appropriate and effective in keeping the stock fluctuating around a target level consistent with (or above) MSY	1.2.2
3	By the end of the certification period, the fishery shall demonstrate that the direct effects of the UoA not hinder recovery of marine mammals, especially large whales.	2.3.1
4	By the end of the certification period, the fishery must develop, implement, and evaluate a strategy that ensure the UoA does not hinder recovery of marine mammals, in particular large whales	2.3.2
5	By the end of the certification period, the fishery must develop an improved system for the collection and verification of observer data so that this information can be used to both develop a management strategy for ETP species, and to assess the effectiveness of the management strategy, and provide information to determine the outcome status of ETP species (in particular marine mammals and sharks)	2.3.3

6.4. Recommendations

Recommendation 1: Until 2017 it was the IEO the institution in charge of reporting the observer data to ICCAT, as part of the agreement signed with OPAGAC which came to an end last year. Since then the client is hiring a private firm (Sea Eye) to run the observer program, supervised by AZTI which is verifying the implementation of the OPAGAC/ANABAC code of good practices. However, at the moment of preparing this

report it is still not clear which institution will be responsible for reporting the observer data to ICCAT. It is recommended that functions, roles and responsibilities are explicitly defined and well understood regarding this topic.

6.5. Determination, Formal Conclusion and Agreement

(REQUIRED FOR FR AND PCR)

1. The report shall include a formal statement as to the certification determination recommendation reached by the Assessment Team about whether or not the fishery should be certified.

(Reference: FCR 7.16)

(REQUIRED FOR PCR)

2. The report shall include a formal statement as to the certification action taken by the CAB's official decision-makers in response to the Determination recommendation.

6.6. Changes in the fishery prior to and since Pre-Assessment

No work was conducted by the client (or relevant fisheries management institutions) specifically targeted at bringing the fishery to the MSC standard prior or since any pre-assessment report that was prepared by BV.

References

- Andersen, K. H. and Pedersen M. 2009. Damped trophic cascades driven by fishing in model marine ecosystems. Proc. R. Soc. B. vol. 27 (1682): 795-802. Available at: <http://rspb.royalsocietypublishing.org/content/277/1682/795.full>
- Amandè, J.M., Ariz, J., Chassot, E., Chavance, P., Delgado de Molina, A., Gaertner, D., Murua, H., Pianet, R., Ruiz, J. 2010. By-catch and discards of the European purse seine tuna fishery in the Atlantic Ocean. Estimation and characteristics for the 2003-2007 period. Aquatic Living Resources, 23(04):353-362
- Amandè, J.M., Ariz, J., Chassot, E., Chavance, P., Delgado de Molina, A., Gaertner, D., Murua, H., Pianet, R., Ruiz, J. 2011. By-catch and discards of the European purse seine tuna fishery in the Atlantic Ocean: estimation and Characteristics for 2008 and 2009. Collect. Vol. Sci. Pap. ICCAT, 66(5): 2113-2120 (2011)
- Arrizabalaga, H, P de Bruyn, G.A Diaz, H Murua, y P Chavance. 2011. «Productivity and susceptibility analysis for species caught in Atlantic tuna fisheries.» Aquat. Living Resour. 24, 1–12 (Aquat. Living Resour. 24, 1–12), 2011.
- Baum, JK, and B. Worm. 2009. Cascading top-down effects of changing oceanic predator abundances. Journal of Animal Ecology 78, 699-714. doi: 10.1111 /j.1365-2656.2009.01531.x.
- Branch T, R. Watson, E. Fulton, S. Jennings, C. McGilliard, G. Pablico, S. Tracey. 2010. The trophic fingerprint of marine fisheries. Nature 468: 431-435. Abstract available at <http://www.nature.com/nature/journal/v468/n7322/full/nature09528.html>
- Bertignac, P, P Lehodey, and J. Hampton. 1998. A spatial population dynamics simulation model of tropical tunas using a habitat index based on environmental parameters. Fisheries Oceanography. 7: 3/4, 326-334 .
- Eddy, C., Brill, R., Bernal, D. 2016. Rates of at-vessel mortality and post-release survival of pelagic sharks captured with tuna purse seines around drifting fish aggregating devices (FADs) in the equatorial eastern Pacific Ocean. Fisheries Research 174 (2016) 109–117
- Escalle, I., A. Capietto, P. Chavance, L. Dubroca, A. Delgado De Molina, , H. Murua, D. Gaertner, E. Romanov, J. Spitz, J. J. Kiszka, L. Floch, A. Damiano, B. Merigot.. 2016. Cetaceans and tuna purse seine fisheries in the Atlantic and Indian Oceans: interactions but few mortalities. Mar. Ecol. Prog. Ser Vol. 522: 255–268, 2015 doi: 10.3354/meps11149

- Gondra, J.R., J. Lopez, F.J. Abascal, P.J. Pascual Alayon, M.J. Amandè, P. Bach, P. Cauquil, H. Murua, M.L. Ramos Alonso, P.S. Sabarros (2017) Bycatch of the european purse-seine tuna fishery in the Atlantic ocean for the period 2010-2016. SCRS/2017/197. Collect. Vol. Sci. Pap. ICCAT, 74(5): 2038-2048
- Hutchinson, M.R, D. Itano, J.A. Muir, and K.N. Holland. 2015. Post-release survival of juvenile silky sharks in the tropical tuna purse seine fishery. Marine Ecology Progress Series, Vol. 521, pp. 143-154
- ICCAT, 2006. Report of the standing committee on research and statistics (SCRS) (Madrid, Spain, October 2 to 6, 2006) Retrieved from: https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=3459de27-7169-46f7-a05c-5044c7d96955&groupId=43805
- ICCAT, 2009. Report of the Independent Performance Review of ICCAT. Retrieved from: https://www.iccat.int/en/pubs_spec.html
- ICCAT, 2011a. Executive summary. Retrieved from: https://www.iccat.int/Documents/SCRS/ExecSum/YFT_ENG.pdf
- ICCAT, 2011b. Recommendation by ICCAT on the principles of decision making for ICCAT conservation and management measures. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-13-e.pdf>
- ICCAT, 2011c. Recommendation by ICCAT on a multi-annual conservation and management program for bigeye and yellowfin tunas. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-01-e.pdf>
- ICCAT, 2011d. Recommendation by ICCAT on information collection and harmonization of data on bycatch and discards in ICCAT fisheries. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-10-e.pdf>
- ICCAT 2011e. Report of the 2011 blue marlin stock assessment and white marlin data preparatory meeting. Madrid, Spain –April 20 to 29, 2011
- ICCAT, 2012a. Panel 1. Tropical tunas. Retrieved from: <https://www.iccat.int/Documents/SCRS/Presentation/2012/Panel1-2012.pdf>
- ICCAT, 2012b. Report of the 2012 white marlin stock assessment meeting. Madrid, Spain – May 21-25, 2012
- ICCAT, 2014. Recommendation by ICCAT on a multi-annual conservation and management program for tropical tunas. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2014-01-e.pdf>
- ICCAT 2014b. Report of the 2014 ICCAT East and West Atlantic skipjack stock assessment meeting. Dakar, Senegal – June 23 to July 1. ICCAT, 2017. Report of the standing committee on research and statistics (SCRS). Madrid, Spain, 2 to 6 October 2017. https://www.iccat.int/Documents/Meetings/Docs/2017_SCRS_REP_ENG.pdf
- ICCAT, 2015a. Recommendation by ICCAT on a multi-annual conservation and management program for tropical tunas. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-01-e.pdf>
- ICCAT, 2015b. Recommendations by ICCAT on the development of harvest control rules and of management strategy evaluation. Retrieved from: <https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-07-e.pdf>
- ICCAT, 2015c. report of the 2015 ICCAT blue shark stock assessment session. Oceanario de Lisboa, Lisbon, Portugal – July 27 to 31, 2015.

- ICCAT, 2016a. Report of the 2016 ICCAT yellowfin tuna data preparatory meeting (San Sebastián, Spain - March 7 to 11, 2016) Retrieved from: https://www.iccat.int/Documents/Meetings/Docs/2016_YFT_DATA_PREP_REPORT_ENG.pdf
- ICCAT, 2016b. Report of the 2016 ICCAT yellowfin tuna stock assessment meeting (San Sebastian, Spain - 27 June to 1 July 2016). Retrieved from: https://www.iccat.int/Documents/Meetings/Docs/2016_YFT_ASSESSMENT_ENG.pdf
- ICCAT, 2016c. Report of the 2016 ICCAT yellowfin tuna data preparatory meeting. (San Sebastian, Spain -March 7 to 11, 2016. Retrieved from: https://www.iccat.int/Documents/Meetings/Docs/2016_YFT_DATA_PREP_REPORT_ENG.pdf
- ICCAT, 2016d. ICCAT SCRS Report Panel 1-Tropical tunas. Retrieved from: <https://www.iccat.int/Documents/SCRS/Presentation/2016/Panel1-2016.pdf>
- ICCAT, 2016e. Recommendation by ICCAT on a multi-annual conservation and management programme for tropical tunas. Retrieved from: <http://iccat.int/Documents/Recs/compendiopdf-e/2016-01-e.pdf>
- ICCAT, 2016f. Report of the 2016 sailfish stock assessment. Miami, USA -30 May to 3 June 2016
- ICCAT, 2016g. Report of the 2016 ICCAT North and South Atlantic albacore stock assessment meeting. Madeira, Portugal – April 28 to May 6, 2016
- ICCAT 2016h. Report of the Independent Performance Review of ICCAT. Retrieved from: https://www.iccat.int/en/pubs_spec.html
- ICCAT, 2017a. Report of the standing committee on research and statistics (SCRS). Madrid, Spain, 2 to 6 October 2017. https://www.iccat.int/Documents/Meetings/Docs/2017_SCRS_REP_ENG.pdf
- ICCAT, 2017b. Report of the 2017 ICCAT Atlantic swordfish stock assessment session. Madrid, Spain 3-7 July, 2007
- ICCAT, 2017c. Report for biennial period, 2016-2017. PART II (2017) – Vol.3 Annual Reports. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017d. Report for biennial period, 2016-2017. PART I (2016) – Vol.4 Secretariat Reports. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017e. Report for biennial period, 2016-2017. PART II (2017) – Vol.2 SCRS. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017f. Report for biennial period, 2016-2017. PART I (2016) – Vol.1 COM. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017g. Report for biennial period, 2016-2017. PART I (2016) – Vol.2 SCRS. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017h. Report for biennial period, 2016-2017. PART I (2016) – Vol.3 Annual Reports. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT, 2017i. Report for biennial period, 2016-2017. PART II (2017) – Vol.1 COM. Retrieved from: https://www.iccat.int/en/pubs_biennial.html
- ICCAT 2018b. 6th Meeting of the WG on convention amendment – Funchal 2018. Report of the sixth meeting of the working group on convention amendment (Funchal, Portugal, 24-25 May 2018)
- ICCAT. 2018c. Compendium Management Recommendations and Resolutions adopted by ICCAT for the conservation of Atlantic tunas and tuna-like species. Available at: <https://www.iccat.int/en/RecRes.asp>
- ICCAT, 2018d Report of the 2018 ICCAT Small Tuna Species Group Intersessional Meeting. Madrid, Spain 2-6 April 2018

- Lehodey, P, and others. 1998. Predicting skipjack tuna forage distributions in the equatorial Pacific using a coupled dynamical bio-geochemical model." *Fisheries Oceanography* 7: 3/4, 317-325.
- Loukos, H., P. Monfray, L. Bopp, and P. Lehodey. 2003. Potential changes in skipjack tuna (*Katsuwonus pelamis*) habitat from a global warming scenario: modeling approach and preliminary results. *Fisheries Oceanography*. 12: 4/5, 474-482
- Medley P.A.H. and J. Gascoigne. 2017. An Evaluation of the Sustainability of Global Tuna Stocks Relative to Marine Stewardship Council Criteria (Version 5). ISSF Technical Report 2017-09. International Seafood Sustainability Foundation, Washington, D.C., USA
- Myers, R.A, J.k Baum, T.D Shepherd, S.P. Powers, y C.H Perterson. 2007. «Cascading Effects of the Loss of Apex Predatory Sharks from a Coastal Ocean.» *Science* 315, 1846. DOI: 10.1126/science.1138657, 2007.
- Pershing AJ, Mills KE, Record NR. 2015. Evaluating trophic cascades as drivers of regime shifts in different ocean ecosystems. *Philosophical Transactions of the Royal Society B: Biological Sciences*. 2015; 370 (1659):20130265. doi:10.1098/rstb.2013.0265.
- Powers, J.E, y P.A.H. Medley. An Evaluation of the Sustainability of Global Tuna Stocks Relative to Marine Stewardship Council Criteria (Version 4). ISSF Technical Report 2016-19. International Seafood Sustainability Foundation, Washington, D.C., USA, 2016.
- Sherman, K., I. Belkinb, K.D. Friedlanda, J. O'Reillya, 2013. Changing states of North Atlantic large marine ecosystems. *Environmental Development* Volume 7, July 2013, Pages 46–58. <http://www.sciencedirect.com/science/article/pii/S2211464513000626>
- Ward, P, and RA Myers. 2005. Shifts in open-ocean fish communities coinciding with the communication of commercial fishing. *Ecology*, 86 4: 835-847.
- Worm, B, M Sandow, A Oschlies, HK Lotze, and RA Myers. 2005. Global Patterns of Predator Diversity in the Open Oceans. *Science* VOL 309 .
- Worm, B, and others. 2006. Impacts of Biodiversity Loss on Ocean Ecosystem Services. *Science* 314, 787 (2006); DOI: 10.1126 / science.1132294.

Appendices

Appendix 1 SCORING AND RATIONALES

Appendix 1.1 PERFORMANCE INDICATOR SCORES AND RATIONALE

Evaluation Table for PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guided post	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
	Met?	Y	Y	N
	Justification	<p>The latest YFT assessment was conducted in 2016 (ICCAT 2016b) to estimate the stock size of 2014. The stock was evaluated by using four different assessment methods; Production models (ASPIC), Age structured production model (ASPM), Virtual population analysis (VPA), Catch statistical models (Stock synthesis SS3). The results were presented for two index clusters, each underlying a different hypothesis of stock depletion. The ASPIC model did not converge using the indices under the Cluster 2 assumption. Management advice was ultimately based on the combination of results of seven runs, equally weighted. The results were presented as below.</p> <div> <p>Stock Status – biomass trends</p> <ul style="list-style-type: none"> For a given cluster, trends in B/B_{MSY} were similar for all models, although small differences in current stock status were noted </div>		
		Reproduced from (ICCAT, 2016d)		

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue	SG 60	SG 80	SG 100
	<div> </div> <p>Reproduced from (ICCAT, 2016d)</p> <p>Management advice was based on the median (10th-90th percentiles) from the joint distribution of age-structured and production model bootstraps.</p> <p>Relative biomass $B_{2014}/B_{MSY}=0.95$ (0.71-1.36)</p> <p>No explicit reference point where recruitment is impaired is used in ICCAT, therefore the default reference point of $0.5B_{MSY}$ is used as proxy indicator (MSC-MSCI Vocabulary, 2014, pg377, GSA 2.2.3.1). It is estimated that there is a 10% probability that the stock is below $B_{2014}/B_{MSY}=0.71$, therefore by assuming that the estimates are approximately normally distributed, at least to the right of the MSY level in the Kobe plot above (Medley & Gascoigne, 2017), it implies that it is highly likely that the stock is above the level where recruitment is impaired and implicitly there is a high degree of certainty of that.</p> <p>However, consideration should be given to the fact that the eight longline indices that were selected for the use in the stock assessment were arranged into the two “clusters” each representing a unique hypotheses regarding trends in abundance of yellowfin tuna. Cluster 1 indices showed an initial decline, with nearly constant relative abundance since 1990, while Cluster 2 indices suggest increased abundance during the 1990s, followed by a general decline through 2014. The two trends represent a major source of scientific uncertainty regarding the abundance of yellowfin tuna (ICCAT 2016b).</p> <p>This PI meets SG60, SG80 and probably SG100, but because of the uncertainty in the above mentioned indices, SG100 is not met.</p>		
b	Stock status in relation to achievement of MSY		
Guidepost		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
Met?		N	N
Justification	The latest YFT assessment estimated the state of the resource for 2014 which was estimated as $B_{2014}/B_{MSY}=0.95$ (0.71-1.36), which is very close to the MSY (ICCAT, 2016b). In		

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing																										
Scoring Issue	SG 60	SG 80	SG 100																								
	<p>fact, most of the assessment results estimated the stock to be either at MSY or just above it, with the exception of the VPA and SS using the indices for cluster 2.</p> <table border="1"> <thead> <tr> <th>Model</th> <th>B_{cur}/B_{MSY}</th> <th>F_{cur}/F_{MSY}</th> </tr> </thead> <tbody> <tr> <td>ASPIC Cluster1</td> <td>1.019</td> <td>0.770</td> </tr> <tr> <td>ASPM Cluster1</td> <td>1.002 (0.775-1.240)</td> <td>0.558 (0.445-0.692)</td> </tr> <tr> <td>ASPM Cluster2</td> <td>1.025 (0.610-1.429)</td> <td>0.625 (0.423-0.989)</td> </tr> <tr> <td>SS Cluster1</td> <td>1.38</td> <td>0.704</td> </tr> <tr> <td>SS Cluster2</td> <td>0.81</td> <td>0.84</td> </tr> <tr> <td>VPA Cluster 1</td> <td>0.84</td> <td>0.98</td> </tr> <tr> <td>VPA Cluster 2</td> <td>0.54</td> <td>1.13</td> </tr> </tbody> </table>  <p>Reproduced from (ICCAT, 2016d)</p> <p>It is difficult to determine whether the stock is fluctuating around the level consistent with MSY, as so many different stock assessment methods are used. The general trend, however, indicates that the stock was estimated to be below the MSY level since 2001 and is now recovering towards the MSY level (ICCAT, 2006). However, the stock is not yet at a level consistent with MSY. SG80 is not met.</p>			Model	B_{cur}/B_{MSY}	F_{cur}/F_{MSY}	ASPIC Cluster1	1.019	0.770	ASPM Cluster1	1.002 (0.775-1.240)	0.558 (0.445-0.692)	ASPM Cluster2	1.025 (0.610-1.429)	0.625 (0.423-0.989)	SS Cluster1	1.38	0.704	SS Cluster2	0.81	0.84	VPA Cluster 1	0.84	0.98	VPA Cluster 2	0.54	1.13
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References	<p>References: ICCAT (2006), ICCAT (2016b), ICCAT (2016d), Medley P.A.H. and J. Gascoigne (2017)</p>																										
OVERALL PERFORMANCE INDICATOR SCORE:			70																								
CONDITION NUMBER (if relevant):			1																								

Evaluation Table for PI 1.1.2 – Stock rebuilding

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe			
Scoring Issue	SG 60	SG 80	SG 100	
a	Rebuilding timeframes			
	Guidepost	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.
	Met?	Y		Y
	Justification	<p>For YFT, the age-at-50%-maturity is around 2.5 years and the natural mortality can be as low as 0.45 per year (ICCAT, 2016c). Using this information, the generation time (GT) is estimated to be around 5 years (380 MSC CR2.0 Box GSA4). The generation time is the average age of a reproductive individual, in a given stock.</p> <p>The latest stock assessment of YFT was performed in 2016 (ICCAT, 2016b) and the state of the resource for 2014 was estimated to be $B_{2014}/B_{MSY}=0.95$ (0.71-1.36), which is just below the desired B_{MSY} level. The most recent estimate of the fishing mortality ratio; $F_{2014}/F_{MSY}=0.77$ (0.53-1.05), indicates that there is a very low probability for the fishing mortality to be above the fishing mortality at MSY.</p> <p>In 2012, a TAC of 110 000t was put in place (ICCAT, 2014) to ensure that the stock is to recover within the shortest practicable rebuilding timeframe. It was estimated with a 68% probability that the stock would be above MSY in 2017, which is one generation time. The overall catches in 2012 (104,500 t), 2013 (97,300 t) and 2014 (97,000 t) were lower than this TAC, but the 2015 estimate is near this level (108,910 t).</p> <p>Considering the estimated projections of the 2016 stock assessment and bearing in mind that the fishery followed the TAC of 110 000 tonnes until 2015, the probability matrix (ICCAT, 2016d) indicates that there is a 78% probability that the stock is at B_{MSY} in 2018. The MSY was estimated to be 132 000t (120 000-150 000), therefore, even though in 2016 the recorded catch was around 127 000t, the projections indicate that currently the stock should be above the MSY level.</p> <p>It is likely in 2018, highly likely in 2019 and there is a high degree of certainty that in 2022 the stock is above the biomass at MSY level. It should further be recognised that the 2014 stock level, two years after the implementation of the TAC, estimated the stock to be only 5% below the MSY.</p> <p>From the forward projections, with the implemented TAC, it can be seen that the rebuilding timeframe is shorter than 2 times its generation time (10 years), therefore SG60 is met.</p> <p>The forward projections estimated a 68% probability that the stock would be rebuild within one generation time (5 years), therefore SG100 is met.</p> <p>Kobe II matrix expresses the probability that $B > B_{MSY}$</p>		

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe									
		TAC	2017	2018	2019	2020	2021	2022	2023	2024
		60,000	75%	91%	99%	99%	99%	99%	100%	100%
		70,000	74%	87%	97%	99%	99%	99%	99%	99%
		80,000	73%	86%	96%	99%	99%	99%	99%	99%
		90,000	71%	82%	91%	97%	99%	99%	99%	99%
		100,000	70%	80%	89%	92%	96%	97%	99%	99%
		110,000	68%	78%	85%	90%	93%	95%	96%	97%
		120,000	67%	75%	80%	80%	81%	82%	84%	84%
		130,000	64%	68%	72%	70%	69%	67%	65%	62%
		140,000	63%	64%	63%	59%	53%	46%	40%	38%
		150,000	61%	59%	55%	47%	34%	30%	28%	27%

Reproduced from (ICCAT, 2016d).

b	Rebuilding evaluation			
	Guided post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	Y	Y	N
Justification	<p>Stock assessments are undertaken every five years by ICCAT, therefore monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe. SG60 has been met.</p> <p>The management quantities estimated in the 2011 and 2016 YFT stock assessment (ICCAT, 2012) (ICCAT, 2016b) were the following:</p> <p>$B_{2010}/B_{MSY}=0.85(0.61-1.12)$ $B_{2014}/B_{MSY}=0.95(0.71-1.36)$</p> <p>$F_{2010}/F_{MSY}=0.87(0.68-1.4)$ $F_{2014}/F_{MSY}=0.77(0.53-1.05)$</p> <p>The overall health of the stock increased by approximately 10%; the stock status increased by 10% and the fishing pressure decreased by that amount. Therefore, there is evidence that the rebuilding strategies are rebuilding stocks, and it is likely that they will be able to rebuild the stock within the specified timeframe. SG 80 has been reached.</p> <p>Further, in the 2011 YFT stock assessment the rebuilding strategy was illustrated in the matrix below (ICCAT, 2011a).</p>			

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	<table border="1"> <thead> <tr> <th rowspan="2">Constant Catch (t, in 1000s)</th> <th colspan="14">Probability (%) that $B > B_{MSY}$ and $F < F_{MSY}$ in each year</th> </tr> <tr> <th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th><th>2022</th><th>2023</th><th>2024</th><th>2025</th> </tr> </thead> <tbody> <tr><td>50</td><td>25</td><td>51</td><td>70</td><td>78</td><td>84</td><td>87</td><td>89</td><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>95</td><td>96</td></tr> <tr><td>60</td><td>24</td><td>48</td><td>66</td><td>76</td><td>81</td><td>85</td><td>87</td><td>89</td><td>90</td><td>92</td><td>93</td><td>93</td><td>94</td><td>94</td></tr> <tr><td>70</td><td>24</td><td>45</td><td>63</td><td>73</td><td>78</td><td>82</td><td>85</td><td>87</td><td>89</td><td>90</td><td>90</td><td>92</td><td>92</td><td>93</td></tr> <tr><td>80</td><td>24</td><td>43</td><td>59</td><td>69</td><td>75</td><td>79</td><td>82</td><td>84</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td><td>90</td></tr> <tr><td>90</td><td>24</td><td>40</td><td>54</td><td>65</td><td>71</td><td>75</td><td>78</td><td>81</td><td>82</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td></tr> <tr><td>100</td><td>24</td><td>37</td><td>49</td><td>59</td><td>66</td><td>70</td><td>73</td><td>76</td><td>78</td><td>80</td><td>81</td><td>82</td><td>83</td><td>84</td></tr> <tr><td>110</td><td>23</td><td>35</td><td>45</td><td>53</td><td>59</td><td>64</td><td>67</td><td>70</td><td>72</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td></tr> <tr><td>120</td><td>23</td><td>32</td><td>40</td><td>46</td><td>51</td><td>55</td><td>58</td><td>61</td><td>64</td><td>65</td><td>66</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>130</td><td>23</td><td>29</td><td>35</td><td>39</td><td>43</td><td>45</td><td>47</td><td>49</td><td>51</td><td>53</td><td>54</td><td>55</td><td>56</td><td>58</td></tr> <tr><td>140</td><td>22</td><td>26</td><td>29</td><td>31</td><td>33</td><td>34</td><td>36</td><td>36</td><td>37</td><td>38</td><td>39</td><td>39</td><td>40</td><td>40</td></tr> <tr><td>150</td><td>20</td><td>21</td><td>22</td><td>22</td><td>22</td><td>21</td><td>21</td><td>21</td><td>21</td><td>21</td><td>21</td><td>21</td><td>20</td><td>20</td></tr> </tbody> </table> <p>Reproduced from (ICCAT, 2011a)</p> <p>The interpretation of this 2011 probability matrix is that it was predicted that in 2014 there would be a 45% chance for the stock to be at MSY, following a TAC of 110 000.</p> <p>In the 2016 YFT assessment the stock was estimated to be:</p> <p>$B_{2014}/B_{MSY}=0.95(0.71-1.36)$ (ICCAT, 2016b), which is very close to the required B_{MSY} level, indicating that there is strong evidence that the rebuilding strategies are rebuilding the stock, and it is shown that it is highly likely that they will be able to rebuild the stock within the specified timeframe.</p> <p>However, in addition to the contradicting two indices trends, which is a major source of scientific uncertainty regarding the abundance of yellowfin tuna (ICCAT 2016b), there was an overage of catch in 2016. The TAC is 110 000t and the catch was around 130 000 (ICCAT database), and as yet it is not known what the catches of 2017 were, therefore SG100 is not met.</p>	Constant Catch (t, in 1000s)	Probability (%) that $B > B_{MSY}$ and $F < F_{MSY}$ in each year														2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	50	25	51	70	78	84	87	89	91	92	93	94	95	95	96	60	24	48	66	76	81	85	87	89	90	92	93	93	94	94	70	24	45	63	73	78	82	85	87	89	90	90	92	92	93	80	24	43	59	69	75	79	82	84	86	87	88	89	90	90	90	24	40	54	65	71	75	78	81	82	84	85	86	87	88	100	24	37	49	59	66	70	73	76	78	80	81	82	83	84	110	23	35	45	53	59	64	67	70	72	74	75	76	77	78	120	23	32	40	46	51	55	58	61	64	65	66	68	69	70	130	23	29	35	39	43	45	47	49	51	53	54	55	56	58	140	22	26	29	31	33	34	36	36	37	38	39	39	40	40	150	20	21	22	22	22	21	21	21	21	21	21	21	20	20
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Evaluation Table for PI 1.2.1 – Harvest strategy

PI 1.2.1	There is a robust and precautionary harvest strategy in place		
Scoring Issue	SG 60	SG 80	SG 100
a	Harvest strategy design		
Guidepost	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.
Met?	Y	Y	N
Justification	MSC defines the catch strategy as a combination of monitoring, stock assessment, HCRs and management measures, and its degree of interaction should also be assessed when working together to achieve the management objective to maintain the stock at consistent		

PI 1.2.1	There is a robust and precautionary harvest strategy in place
	<p>Maximum Sustainable Yield level (MSYL).</p> <p>The following elements are part of the strategy for the target stock of the evaluated fishery:</p> <ol style="list-style-type: none"> 1. Complete stock assessment every 4-6 years by the SCRS (revised and updated annually). This evaluation allows the Committee to establish the status of the resource and issue recommendations for its management. 2. The ICCAT Recommendation [11-13] (ICCAT, 2011b), describes a general framework for decision making aimed at keeping stocks above the MSY level, of not being overfished and avoiding overfishing. 3. Effort limitation are in place and CPC vessels need to be authorised for fishing on tropical tunas. ICCAT has a list of registered authorised vessels (available on its website: https://www.iccat.int/en/vesselsrecord.asp) 4. CPCs are obligated to annually report data to ICCAT; catch data (Task I) and catch-effort (Task II) (ICCAT, 2016c). They should further provide the list of vessels flying their flag and fishing for bigeye and / or yellowfin tuna and / or skipjack in the Convention area. 5. Various measures for the management of FADs are implemented; space-time closure in the Gulf of Guinea zone, limit of 500 FADs per vessel, management plans, specific data collection and submission of information. Moreover, ICCAT provides guidelines for the construction of non-entangling FADs. During the space-time closure the CPCs must ensure a 100% observer coverage (Rec 16-01. (ICCAT, 2016e)) 6. Recognition is given to fleets that implement voluntary observer programs outside the closure time/area. These programs provide ICCAT with data, which is collated and analysed by the SCRS. The fleet undergoing this assessment, for example, has a 100% observer coverage. 7. A port sampling program was developed by the SCRS with the objective of collecting tropical tuna fishery data of tuna captured in the geographic area of the space-time closure (ICCAT, 2016e). 8. Most of the monitoring and management measures detailed above are integrated into the Multiannual Conservation and Management Program for Tropical Tunas (Recommendation [16-01], (ICCAT, 2016e)). This program has been reviewed annually since its first publication in 2011 (Rec [11-01] (ICCAT, 2011c), referring only to yellowfin and bigeye, while in 2014 - Rec [14-01] (ICCAT, 2014) – skipjack tuna was included). 9. For yellowfin tuna a TAC of 110 000 tonnes per annum is set for the fishery since 2012 (Rec 15-01, (ICCAT, 2015a)). <p>With this harvest strategy it is highly likely that the stock is above the PRI, therefore SG60 is met.</p> <p>The management quantities estimated in the 2011 and 2016 YFT stock assessment (ICCAT, 2012) (ICCAT, 2016b) were the following:</p> <p>$B_{2010}/B_{MSY}=0.85(0.61-1.12)$ $B_{2014}/B_{MSY}=0.95(0.71-1.36)$</p> <p>$F_{2010}/F_{MSY}=0.87(0.68-1.4)$ $F_{2014}/F_{MSY}=0.77(0.53-1.05)$</p> <p>The overall health of the stock increased by approximately 10%; the stock status increased by 10% and the fishing pressure decreased by that amount. Therefore, there is evidence that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives. SG80 is met.</p> <p>Also, following the principles described in the ICCAT Recommendation [11-13] (ICCAT, 2011b), a TAC of 110 000t for YFT was implemented (Rec 15-01, (ICCAT, 2015a)),</p>

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		<p>specifically tested through probabilistic projections to achieve the biomass at MSY level. However, there is no management plan which sets out objectives for the fishery and an overall strategy detailing how this will be achieved through stock assessment, harvest rules (and reference points), fishery controls and technical measures, appropriate enforcement and monitoring of performance. An overage of catch close to a 130 000t was recorded for 2016. Even though, according to ICCAT Rec 2016-01 (ICCAT 2016e), the Commission will review the relevant conservation and management measures if the total catch exceeds the TAC for yellowfin tuna, this needs to be seen first before SG100 can be reached.</p> <p>With the overage of catch in 2016, it is clear that the TAC is not monitored and the appropriate enforcement is not in place. There is no explicit allocation of yellowfin catch to ICCAT CPCs that would both reduce the likelihood of overages (by increasing accountability), and facilitate a strategy to respond in terms of subsequent catch restrictions. For these reasons SG100 is not met.</p>		
b	Harvest strategy evaluation			
	Guided post	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	Y
	Justification	<p>Stock assessments for yellowfin for the re-evaluation of management performance are every 4-5 years. However, recommendations on the multi-annual conservation and management programme for tropical tunas are evaluated annually. For yellowfin tuna a TAC of 110 000 tonnes per annum is set for the fishery since 2012 (Rec 15-01, (ICCAT, 2015a)). Since then the YFT resource has been recovering towards the MSY level.</p> <p>The management quantities estimated in the 2011 YFT stock assessment (ICCAT, 2012) were the following:</p> <p>$B_{2010}/B_{MSY}=0.85(0.61-1.12)$</p> <p>$F_{2010}/F_{MSY}=0.87 (0.68-1.4)$</p> <p>The latest stock assessment of YFT was performed in 2016 (ICCAT, 2016b) and estimated the state of the resource in 2014.</p> <p>$B_{2014}/B_{MSY}=0.95 (0.71-1.36)$</p> <p>$F_{2014}/F_{MSY}=0.77 (0.53-1.05)$</p> <p>The overall health of the stock increased by approximately 10%; the stock status increased by 10% and the fishing pressure decreased by that amount. This indicates that the strategy is likely to work (SG60 is met), and evidence exists that the harvest strategy is achieving its objectives, therefore SG80 is achieved. Further, probabilistic projections have been modelled to test the harvest strategy (A TAC of 110 000t), therefore the performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives. The improvement of the stock size and the lower fishing mortality show that, once the biomass is at MSY level, this harvest strategy is clearly able to maintain stocks at target levels. SG 100 is met.</p>		
c	Harvest strategy monitoring			
	Guided post	Monitoring is in place that is expected to determine whether the harvest		

PI 1.2.1	There is a robust and precautionary harvest strategy in place		
		strategy is working.	
	Met?	Y	
	Justification	<p>Catch and discard data for tropical tunas (yellowfin, bigeye and skipjack), as well as the results of related research activities, are compiled by the SCRS and reviewed annually by the Tropical Tuna Working Group. Among other tasks, these groups are responsible for reviewing measures to minimise the mortality of unwanted catches.</p> <p>Monitoring is in place that is expected to determine whether the harvest strategy is working. CPCs are obligated to annually report data to ICCAT; catch data (Task I) and catch-effort (Task II) (ICCAT, 2016c).</p> <p>Therefore, all the data needed to determine whether the harvest strategy is working, is available.</p> <p>SG60 is met.</p>	
d	Harvest strategy review		
	Guidepost		The harvest strategy is periodically reviewed and improved as necessary.
	Met?		Y
	Justification	<p>Every 4-6 years a complete stock assessment is done by SCRS, and reviews and updates are made annually.</p> <p>The final provisions of Rec [16-01] (ICCAT, 2016e) determined that the Committee, at its 2017 meeting, should review and improve various elements of the strategy of tropical tuna catch, including for YFT. In fact, this process of review and improvement of the Multiannual Program for the conservation and management of Tropical Tunas has been happening annually since its inception in 2011. A review of the successive Recommendations [14-01] (ICCAT, 2014), [15-01] (ICCAT, 2015a) and finally [16-01] (ICCAT, 2016e) shows how elements have been incorporated and detailed specifications on various elements that make up the catch strategy (data collection of the fishing operations with FADs, management of FADs, observer programs, SCRS obligations, etc.).</p> <p>The harvest strategy is periodically reviewed and improved as necessary. SG100 is met.</p>	
e	Shark finning		
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place. There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant
	Justification	In accordance with SA2.4.3 this SI shall be scored when the target species is a shark. As the target species of the assessed fishery is not a shark species this Scoring issue is not scored	
f	Review of alternative measures		
	Guidepost	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.
			There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.

PI 1.2.1	There is a robust and precautionary harvest strategy in place		
Met?	Y	Y	Y
Justification	<p>Estimates regarding discards of yellowfin, skipjack and bigeye tuna in the EU purse seine fishery were made using the stratified ratio estimator method and the EU PS observer database. Discards of yellowfin are low, with yearly average of 0.03% (2005-2013) from FAD-free sets (ICCAT, 2016c). Discarded fish are normally too small or not in a good condition for human consumption. A recent ICCAT Recommendation (17-01, (ICCAT, 2017c)) prohibiting discards of tropical tunas (YFT, SKJ, BET) by purse seiners just entered into force 11th June 2018. This Recommendation establishes that vessels shall retain on board and then land or tranship to port all bigeye, skipjack and yellowfin tunas caught, except for two exceptions: (i) fish unfit for human consumption and, (ii) when caught during the last set of a trip and there is not enough storage capacity. This Recommendation also establishes that CPC shall report all discards observed. Finally, it is established that in 2020 the SCRS shall assess the effectiveness of this Recommendation and submit recommendations to the Commission regarding potential improvements.</p> <p>The recording of discards is continuously monitored by the 100% observer coverage of the UoA, results collected 2014 and 2018 (table 3-11) show that from a total catch of 7,822t on yellowfin tuna during that period, only 9t were discarded (0.12%). The client has adopted an internal protocol of full retention of all tuna catches aligned with Rec17-01.</p> <p>Since discards recorded by observers on board the assessed fishery proved that discarding of yellowfin are almost non-existent, and also Rec (17-01, (ICCAT, 2017c)) foresees a review of its effectiveness two years after its implementation. SG60 and SG80 and SG100 are met.</p> <p>.</p>		
References	ICCAT (2012), ICCAT (2011b), ICCAT (2011c), ICCAT (2014), ICCAT (2015a), ICCAT (2016c), ICCAT (2016d), ICCAT (2016e)		
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 1.2.2 – Harvest control rules and tools

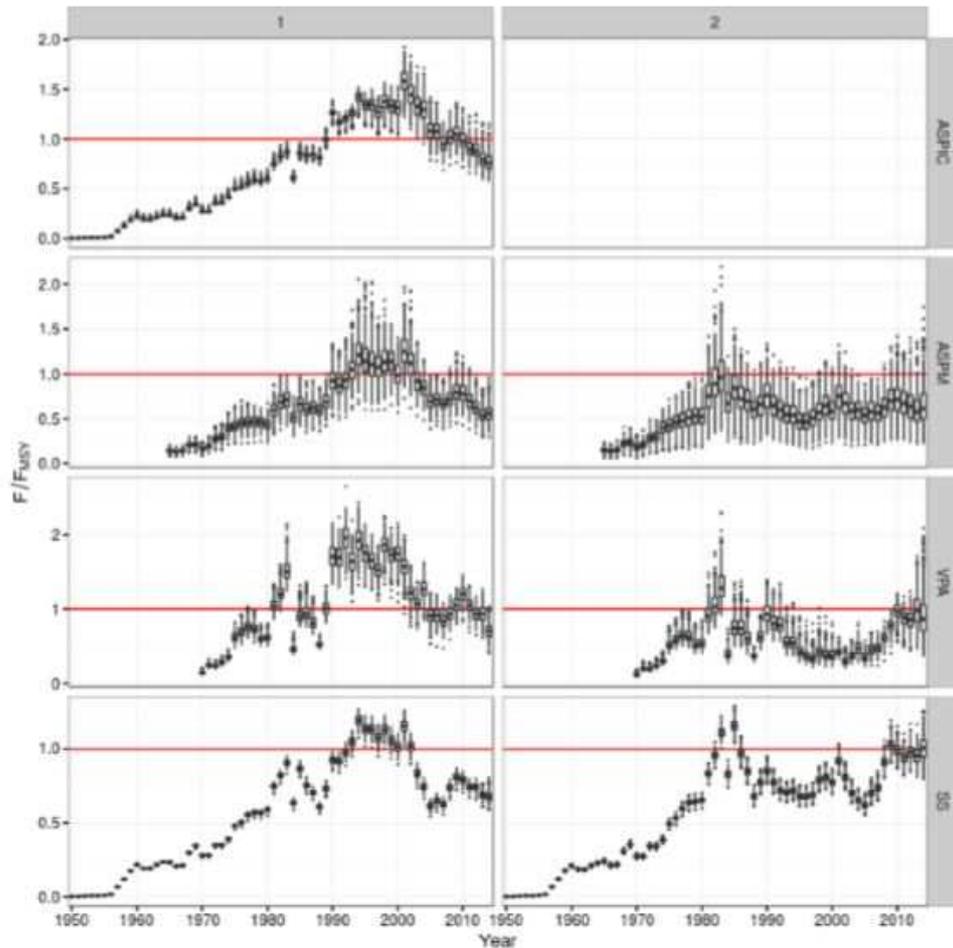
PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guided post	<p>Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.</p>	<p>Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.</p>	<p>The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.</p>
	Met?	Y	N	N
	Justification	<p>In 2011, ICCAT adopted Recommendation [11-13] (ICCAT 2011b) set out the principles for decision-making. It is a format (Strategy Matrix) to provide advice that was agreed upon by the scientific bodies of the different RFMOs of tunas at the 2nd Joint Meeting (in June 2009 in San Sebastian, Spain). Recommendation 11-13 guides the Commission in developing stock-sensitive management measures according to its representation in the Kobe diagram (a standardized four-quadrant format, red-yellow-green), which is widely accepted as a practical and easy-to-use method for presenting stock status information. The Recommendation clearly states how management measures should be designed according to the location of status in the Kobe quadrants. In all cases, the stated requirement is that management measures should be designed so that there is a high probability that the stock will remain at B_{MSY} levels (or recover to these levels). In case of overfishing and / or overfished stock, the adoption of a rebuilding plan is required.</p> <p>The Strategy Matrix does not specify actions with respect to the proximity to PRIs, but is designed so that the probability of reaching the TRP is high, both in relation to the state of stock (B_{MSY}) and in relation to the rate of exploitation (F_{MSY}), through the implementations of actions to reduce the exploitation rate when it is above F_{MSY}. By definition, since the matrix is designed to ensure that there is a high probability of achieving B_{MSY} and F_{MSY} and maintain fishing mortality below F_{MSY}, it will also act to maintain the stock above the implicit PRIs. Thus, Rec [11-13] (ICCAT 2011b) generally defines HCRs that are expected to reduce the rate of exploitation as the stock status approaches a point at which recruitment is compromised. For yellowfin a TAC of 110 000 tonnes is allowed annually, which keeps the fishing mortality well below F_{MSY}. This implies that generally understood HCRs are in place and available that are expected to reduce the exploitation rate as the PRI is approached. Taking Rec 11-13 into consideration, the basis for HCRs are generally understood.</p> <p>In 2015 a recommendation (Rec 15-07, (ICCAT 2015b) on the development of harvest control rules and of management strategy evaluation was put forward by ICCAT. In addition, to laying down the basic ground rules for the MSE, the SCRS will start by evaluation species-specific candidate HCRs. The MSC evaluation has been completed northern Atlantic albacore tuna; reference points and harvest control rules have been adopted and came into force in June 2018 (ICCAT 2017). SG60 is reached.</p> <p>HCRs are the arrangements by which a fishery expects to achieve the stock status outcomes expressed in PI 1.1.1. The tools for the YFT HCR is the TAC set at 110 000 tonnes. The interaction between the set TAC and the reference point (B_{MSY}) has been evaluated using probabilistic projections. The simulation testing on the probability of recovery to the MSY level under the current TAC of 110 000 tonnes have been carried out and it is</p>		

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place		
	<p>expected that there is a 97% probability that the stock will be at MSY in 2024. (See probability matrix in P1.1.1b). This implies that a well-defined YFT HCR is in place, and it is expected that under this management the stock will keep the stock fluctuating around B_{MSY}. Also, according to ICCAT Rec 2016-01 (ICCAT 2016e) it states that the Commission shall review the relevant conservation and management measures if the total catch exceeds the TAC for yellowfin tuna, again indicating that HCRs are in place.</p> <p>It has to be considered that: <i>The requirement that an HCR reduces exploitation rate as the limit reference point is approached should not always be interpreted as requiring the control rule to deliver an exploitation rate that is a monotonically decreasing function of stock size (Not need to be a ‘hockey stick’ type rule). Any exploitation rate function may be acceptable so long as it acts to keep the stock above a limit reference point that avoids possible recruitment failure and attempts to maintain the stock at a target reference point that is consistent with B_{MSY} or a similar highly productive level (pg. 395 MSC guide).</i></p> <p>With the overage of catch in 2016, it is clear that the TAC is not monitored and the appropriate enforcement is not in place. There is no explicit allocation of yellowfin catch to ICCAT CPCs that would both reduce the likelihood of overages (by increasing accountability), and facilitate a strategy to respond in terms of subsequent catch restrictions. A full MSE has not been done for YFT, therefore well-defined HCRs are not in place that would ensure that the exploitation rate is reduced as the PRI is approached, therefore SG80 has not been met.</p>		
b	HCRs robustness to uncertainty		
Guidepost		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.
Met?		Y	N
Justification	<p>Currently, the harvest control rule is a constant TAC for yellowfin tuna and this has been in place since 2012. Although, this is not a “hockey stick” kind of rule, it can still be considered a HCR. The effect of the TAC allowed for YFT was tested in a probabilistic way (ICCAT, 2016b) and presented in the probability matrix presented in PI 1.1.1b. It was tested considering various sensitivities. The result showed that there is a 68% probability that the stock will be above B_{MSY} in 2017 and by 2024 the probability will rise to 97% hence the HCR is likely to be robust to the main uncertainties. SG80 is met.</p> <p>The HCR has been tested against a wide range of uncertainties, but those did not include the ecological role the stock plays, therefore there is some scope of improvement with the testing of robustness to uncertainty. SG 100 is not met.</p>		
c	HCRs evaluation		
Guidepost	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.
Met?	Y	N	N
Justification	The current TAC for YFT is 110 000 tonnes, which is below the lower 10 percentile of the MSY which was estimated as 132 000t (120000-150000) (ICCAT 2016b). This was first implemented in 2012, therefore the tools which would limit exploitation rate are already in		

PI 1.2.2

There are well defined and effective harvest control rules (HCRs) in place

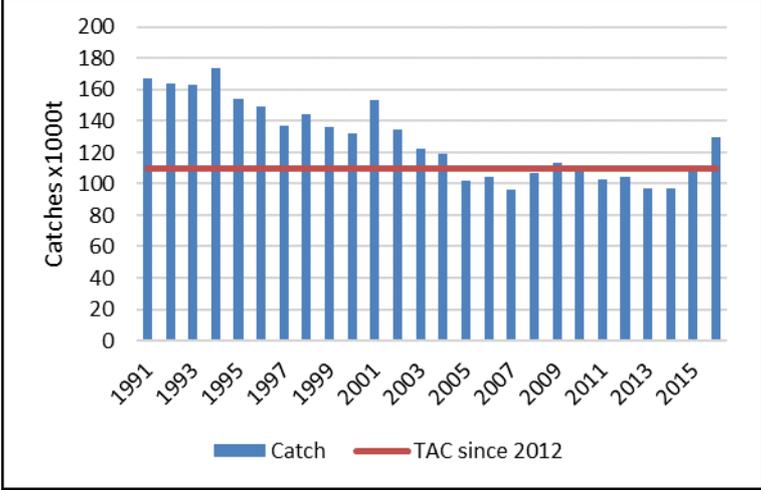
use. The fishing mortality for YFT in 2014 is $F_{2014}/F_{MSY}=0.77$ (0.53-1.05) (ICCAT 2016b) is below the fishing mortality at MSY. It has been shown that catches below the TAC are effective in rebuilding the YFT stock to its MSY level as indicated by the probability matrix. The resource improved from $B_{2010}/B_{MSY}=0.85$ (0.61-1.12) in 2010 (ICCAT 2012) to $B_{2014}/B_{MSY}=0.95$ (0.71-1.36) (ICCAT 2016d) (see figure below) and there is a 68% probability that the stock was above the biomass level at MSY in 2017. Therefore, there is some evidence that the tools available to implement the HCR are appropriate and effective in controlling exploitation. **SG60 is met.**



Reproduced from (ICCAT, 2016d)

Trends in fishing mortality relative to the level that produces MSY (red) for the model runs used to develop management advice. Box and whisker plots indicate the uncertainty in bootstrap estimates. (Boxes indicate the annual median estimates, 25th and 75th percentiles; whiskers and points indicate the range of more extreme outcomes).

Since 2005, catches were either below or around 110 000t (see Figure below). The overall catches in 2012 (104,500 t), 2013 (97,300 t) and 2014 (97,000 t) were lower than the TAC, but the 2015 estimate was near this level (108,910 t). However, an overage of catch close to a 130 000t was recorded for 2016, which is much higher than the TAC. The catch for 2017 is not yet available.

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place	
	 <p>Catches of Yellowfin tuna taking in the Atlantic from 1991 to 2016. ICCAT database.</p> <p>TAC and the reference point (B_{MSY}) have been evaluated using probabilistic projections. The simulation testing on the probability of recovery to the MSY level under the current TAC of 110 000 tonnes have been carried out and it is expected that there is a 97% probability that the stock will be at MSY in 2024. (see probability matrix in P1.1.1b)</p> <p>Therefore, available evidence clearly shows that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCR. However, there is no formula in place that would reduce the exploitation rate if the TAC was exceeded. Even though ICCAT has extensive experience in the implementation of TACs and limits on effort, and CPCs have previously proven the ability to implement catch limits and fishing effort, in this case there is no evidence that ICCAT reacted timeously to the overage. ICCAT Rec 2016-01 states that the Commission shall review the relevant conservation and management measures if the total catch exceeds the TAC for yellowfin tuna, but this has not as yet happened.</p> <p>Even though the evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs, the CAB decided to follow the precautionary approach until there is evidence that ICCAT addresses the catch overage. Therefore SG80 is not met.</p>	
References	ICCAT (2011b), ICCAT (2012), ICCAT (2015b), ICCAT (2016b), ICCAT (2016d)	
OVERALL PERFORMANCE INDICATOR SCORE:		65
CONDITION NUMBER (if relevant):		2

Evaluation Table for PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guided post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	N
	Justification	<p>The following fisheries data are used as input to the stock assessment models: Task I nominal catch, Task II catch and effort (CE), Task II catch-at-size (CAS) and the corresponding size frequency data aggregated by year-quarter, fishing mode, main gear, and 5x5 square Lat-Long grid (ICCAT, 2016c). Detailed data are available since the 1950s. This information is adequate to use four different stock assessment approaches as illustrated in (ICCAT, 2016b). SG60 is met.</p> <p>These stock assessments are adequate for the requirements of decision making. ICCAT also has comprehensive information about the fleet composition.</p> <p>All participating companies in ISSF (and Jealsa Rianxeira Group is one of them) are bound to provide very detailed information on their purchases every quarter to the competent RFMO scientific body (in the case of the assessed fishery is the SCRS) as required by the ISSF conservation measure 2.2. Quarterly Data Submission to RFMO:</p> <p>1) Processors, traders, importers, transporters, marketers and others involved in the seafood industry shall submit the following data within their control to the appropriate RFMO scientific bodies:</p> <p>A. Round fish (includes gilled and gutted, and headed and gilled and gutted) unloading from Fishing Vessel</p> <ol style="list-style-type: none"> i. Name of fishing vessel ii. Unique Vessel Identification Number (for example, IMO number) of fishing vessel iii. Gear type iv. Flag State of fishing vessel v. Start date for unloading to processor vi. End date for unloading to processor vii. RFMO area of subject catch viii. Fishing trip dates ix. Weight of catch (in metric tons, by commercial species/size categories compiled as specified in paragraph 2) x. Unloading port xi. Data source (unloading data, outturn report or immediate pre-processing) <p>B. Round fish (includes gilled and gutted) unloading from Carrier Vessel (Transhipments)</p> <ol style="list-style-type: none"> i. Name of carrier vessel ii. Unique Vessel Identification Number (for example, IMO number) of carrier vessel iii. Flag State of carrier vessel iv. Start date for unloading to processor v. End date for unloading to processor 		

<p>PI 1.2.3</p>	<p>Relevant information is collected to support the harvest strategy</p> <p>vi. Name(s) of catcher vessel(s) vii. Unique Vessel Identification Number(s) (for example, IMO number) of catcher vessel(s) viii. Flag state(s) of catcher vessel(s) ix. Date(s) of transfer of fish from catcher vessel(s) by vessel, and/or transfer from processor(s) to carrier vessel x. Locations of transfer(s) at sea [at sea coordinates/port name] by transfer xi. Fishing trip dates xii. Weight of catch (in metric tons, by commercial species/size categories by catcher vessel(s) compiled from immediate pre-processing data as specified in paragraph 2) xiii. Unloading port xiv. Data source (unloading data, outturn report or immediate pre-processing)</p> <p>2) Weight of catch (in metric tons) by commercial species/size categories should be compiled from immediate pre-processing data or from unloading data/outturn reports. The size classes shall reflect commercial grading used by the processor, with the following suggested minimum breakdowns: - Skipjack: <3 lb. (1.4 Kg); 3-4 lb. (1.4 -1.8 Kg); 4-7.5 lb.; &gt;7.5 lb. (3.4 Kg). The category 3-4 lb. can be combined with the <3 lb. category if not generally measured by the processor. - Yellowfin and bigeye: <4 lb. (1.8 Kg); 4-7.5 lb. (1.8-3.4 Kg); 7.5-20 lb. (3.4-9 Kg); > 20 lb. (9 Kg). If used by the processor, the additional category 3-4 lb. (1.4-1.8 Kg) should be added. - Albacore: <4 Kg; 4.0-7.0 Kg; 7.0-10.0 Kg; >10 Kg. Species separation for skipjack, yellowfin and bigeye should apply to all size breakdowns, unless practical considerations limit this separation in the smallest size classes (e.g. < 3 lb. or < 4 lb.), in which case the report should indicate the species mix.</p> <p>3) Submission of these data for each quarter shall be done by the last day of the following calendar quarter. Submissions shall be done by electronic mail to the appropriate RFMO scientific bodies</p> <p>This is relevant information to improve the accuracy of Task I and Task II data. The compliance with this ISSF conservation measure is being audited by MRAG on an annual basis as part of the verification scheme to ensure compliance with the ISSF conservation measures. The SCRS has used this data in the past to crosscheck Task I data in conflicting situations, for instance it was used to check and improve catch data from Ghana (Victor Restrepo –ISSF-, pers. comm). However, ISSF is currently working on improving standardisation of data reported by the different companies to facilitate the task of the ICCAT Secretariat (the body in charge of receiving all data).</p> <p>The information is relevant to support the harvest strategy. SG80 is met.</p> <p>There is a comprehensive range of relevant information on stock abundance, fishery removal and other information such as environmental information. Environmental data is available at https://www.iccat.int/en/SC_ENV.htm. However, at this stage there are no other monitoring programs, which though not directly relevant to the target stock, are referred to by fishery managers to inform their understanding of the stock management. SG100 is not met.</p>		
<p>b</p>	<p>Monitoring</p>		
<p>Guidpost</p>	<p>Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.</p>	<p>Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored</p>	<p>All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the</p>

PI 1.2.3	Relevant information is collected to support the harvest strategy		
		with sufficient frequency to support the harvest control rule.	information [data] and the robustness of assessment and management to this uncertainty.
Met?	Y	Y	N
Justification	<p>According to (ICCAT, 2016b), catch, effort, size and CAS/CAA estimates are available and this information is received from the various member states. As mentioned above, the data is available since the 1950s and they can support a harvest rule. SG60 is met.</p> <p>Information is obtained in logbook reports and landing records. There are some gaps within the data and the data is not always received in time, but monitoring programs that may enable managers to make informed management decisions are in place. Therefore, it can be said that stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, which in this case is the constant TAC. Also, 9 stock indicators, divided into 2 Clusters are used within the stock assessments and they are updated and monitored with sufficient frequency to support the harvest control rule.</p> <p>Further, as explained in SI (a) all ISSF participating companies (and Jealsa Rianxeira group is one of them) are providing the SCRS with a detailed account of all their tuna purchases on a regular basis (every quarter). If needed, this information can be cross-checked against the data sent by the CPCs.</p> <p>SG80 is met.</p> <div> </div> <p>Indices used within the stock assessment of yellowfin tuna. Reproduced from (ICCAT, 2016a)</p> <p>Even though the indicators are available, the abundance indices (see below) used in the stock assessment are somewhat contradictory, therefore consideration should be given to the fact that the eight longline indices that were selected for the use in the stock assessment were arranged into the two “clusters” each representing a unique hypotheses regarding trends in abundance of yellowfin tuna. Cluster 1 indices showed an initial decline, with nearly constant relative abundance since 1990, while Cluster 2 indices suggest increased abundance during the 1990s, followed by a general decline through 2014. The two trends represent a major source of scientific uncertainty regarding the abundance of yellowfin tuna (ICCAT 2016b), and there is not a good understanding of the inherent uncertainties. SG 100 is not met.</p>		
c	Comprehensiveness of information		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
	Guided post		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	Total catches of the P1 stock is broken down into all nations and all gears. Contracting Parties and Cooperating non-Contracting Parties, Entities and Fishing Entities (CPCs) require the collection of bycatch and discard data in their existing domestic scientific observer programs and logbook programs (Rec 11-10 in (ICCAT, 2011d). There is good information on all other fishery removals from the stock. SG80 is met.		
References		ICCAT (2016a), ICCAT (2016b), ICCAT (2011d).		
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				NA

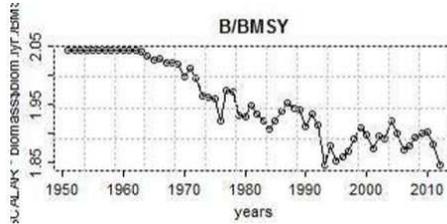
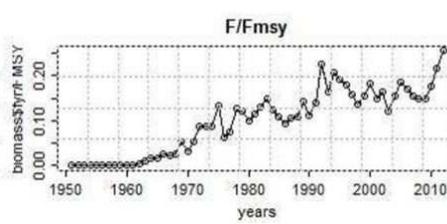
Evaluation Table for PI 1.2.4 – Assessment of stock status

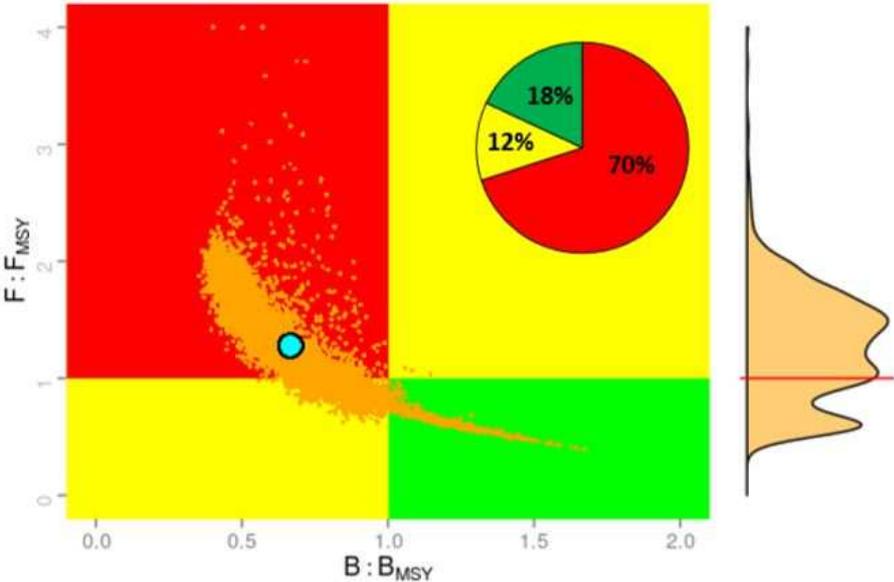
PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue	SG 60	SG 80	SG 100	
a	Appropriateness of assessment to stock under consideration			
	Guided post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		y	Y
	Justification	Four different assessment methods; Production models (ASPIC), Age structured production model (ASPM), Virtual population analysis (VPA), Catch statistical models (Stock synthesis SS3) were shown to be appropriate for estimating the status of the YFT stock. The results were presented for two index clusters, each underlying a different hypothesis of stock depletion. Various sensitivities to biological parameters can be evaluated by using these models. For the ASPIC model, several sensitivity analyses were conducted for two scenarios (with Cluster 1: logistic and Fox model equal weighted). These include scenarios with different B1/K, scenarios with longer Japanese longline CPUE and scenarios which exclude one or more CPUE indices. Three types of CAA formulations were used for the ASPM analysis. The data source of the standardized CPUE contained three groups of indices (clusters 1 and 2, and sensitivities). For the SS3, numerous assumptions were tested, based on steepness, natural mortality and growth. The VPA was run using different abundance indices. The VPA also ran retrospective analysis. Thus it can be deduced that the uncertainties in some of the biological parameters are realised and appropriate sensitivity tests are done, to address uncertainties. SG80 and SG100 are met.		
b	Assessment approach			
	Guided post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	

PI 1.2.4		There is an adequate assessment of the stock status																										
	Met?	Y	Y																									
	Justification	<p>All four stock assessment methods estimate B_{2014}/B_{MSY} and F_{2014}/F_{MSY}. Results are presented in a Kobe plot which illustrates whether the stock is overfished and whether overfishing is taking place. The Kobe plot is designed around the MSY concept, which is a generic reference point. SG60 is met.</p> <p>In the table below it is shown that all four stock assessments are able to estimate the stock status relative to MSY-related reference points which are appropriate to the stock (ICCAT, 2016b). SG80 is met.</p> <table border="1"> <thead> <tr> <th>Model</th> <th>B_{2014}/B_{MSY}</th> <th>F_{2014}/F_{MSY}</th> </tr> </thead> <tbody> <tr> <td>ASPIC Cluster1</td> <td>1.019</td> <td>0.770</td> </tr> <tr> <td>ASPM Cluster1</td> <td>1.002 (0.775-1.240)</td> <td>0.558 (0.445-0.692)</td> </tr> <tr> <td>ASPM Cluster2</td> <td>1.025 (0.610-1.429)</td> <td>0.625 (0.423-0.989)</td> </tr> <tr> <td>SS Cluster1</td> <td>1.38</td> <td>0.704</td> </tr> <tr> <td>SS Cluster2</td> <td>0.81</td> <td>0.84</td> </tr> <tr> <td>VPA Cluster 1</td> <td>0.84</td> <td>0.98</td> </tr> <tr> <td>VPA Cluster 2</td> <td>0.54</td> <td>1.13</td> </tr> </tbody> </table>			Model	B_{2014}/B_{MSY}	F_{2014}/F_{MSY}	ASPIC Cluster1	1.019	0.770	ASPM Cluster1	1.002 (0.775-1.240)	0.558 (0.445-0.692)	ASPM Cluster2	1.025 (0.610-1.429)	0.625 (0.423-0.989)	SS Cluster1	1.38	0.704	SS Cluster2	0.81	0.84	VPA Cluster 1	0.84	0.98	VPA Cluster 2	0.54	1.13
	Model	B_{2014}/B_{MSY}	F_{2014}/F_{MSY}																									
ASPIC Cluster1	1.019	0.770																										
ASPM Cluster1	1.002 (0.775-1.240)	0.558 (0.445-0.692)																										
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SS Cluster2	0.81	0.84																										
VPA Cluster 1	0.84	0.98																										
VPA Cluster 2	0.54	1.13																										
c	Uncertainty in the assessment																											
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.																								
	Met?	Y	Y	Y																								
	Justification	<p>The latest YFT assessment was conducted in 2016 (ICCAT, 2016b) to estimate the stock size of 2014. The stock was evaluated by using four different assessment methods; Production models (ASPIC), Age structured production model (ASPM), Virtual population analysis (VPA), Catch statistical models (Stock synthesis SS3). The results were presented for two index clusters, each underlying a different hypothesis of stock depletion (including different standardised CPUE series). The various stock assessment approaches also evaluate the status of the resource by investigating numerous biological assumption; for example, different values of natural mortality and steepness. Further, different CAA matrices were tested. The results are presented in a probabilistic way, as shown by the Kobe plot as an example in P1.1.1a. Management advice is based on the median (10th-90th percentiles) from the joint distribution of age-structured and production model bootstraps. Projections under different catch strategies are presented in a probability matrix (See P1.1.2b).</p> <p>Therefore, the major sources of uncertainty are identified (SG60 is met) and the assessment takes into account uncertainty (SG80 is met) and is evaluating stock status relative to reference points (MSY) in a probabilistic way. SG100 is met.</p>																										
d	Evaluation of assessment																											
	Guidepost			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.																								
	Met?			Y																								

PI 1.2.4		There is an adequate assessment of the stock status	
	Justification	<p>Each one of the four different assessment approaches used for the stock assessment of YFT, explores various hypothesis (ICCAT, 2011b) as described in P1.2.4c. Except for the ASPIC, using the data for the Cluster2 hypothesis, all models converged and the results were fairly similar as indicated below.</p>	
		<p>Reproduced from (ICCAT, 2016d).</p> <p>This means that alternative hypotheses and assessment approaches have been rigorously explored, tested and shown to be robust. SG100 is met.</p>	
e	Peer review of assessment		
	Guided post	The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?	Y	N
	Justification	<p>The SCRS meet annually and discuss the data, model assumptions and results. This meeting is attended by numerous stock assessment scientists, therefore the assessment of the stock status is subject to peer review. SG 80 has been met. However, during this meeting, no external reviewer has been invited yet, therefore it cannot be said that the assessment has been internally and externally peer reviewed. SG100 is not met.</p>	
References	ICCAT (2016b), ICCAT (2016d).		
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.1.1 – Primary species outcome

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.		
Scoring Issue	SG 60	SG 80	SG 100
a	Main primary species stock status		
	<p>Guidepost</p> <p>Main primary species are likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main primary species are highly likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, there is either evidence of recovery or a demonstrably effective strategy in place between all MSC UoAs which categorise this species as main, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.</p>
	<p>Met?</p> <p>Y (see scoring per elements)</p>	<p>Y (see scoring per elements)</p>	<p>N (see scoring per elements)</p>
<p>Justification</p>	<p>According to logbook data from the UoC during 2016 and 2017 (Table 3-6), skipjack accounted for 26.33% of the total catches, while bigeye tuna accounted for 8.81%. Therefore, both species are classified as primary species in accordance with SA3.1.3.3.</p> <p>Eastern Skipjack tuna:</p> <p>The SCRS carried out the last assessment of the stock of skipjack in the East Atlantic in 2014, using data until 2013. Two alternative models were analyzed for Eastern skipjack, including a catch-only model and a Bayesian Surplus Production (BSP) model. The results of the Bayesian surplus production models show that the values of the posterior distribution mean for the B_{cur}/B_{MSY} can be in the range of 1.55 to 1.79 for the five different model scenarios and the F_{cur}/F_{MSY} can be from 0.22 to 0.49. It is therefore very likely that the Eastern Atlantic Skipjack stock is not overfished, nor does overfishing take place. (ICCAT 2014)</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Even though not much confidence is being put into the Production model results (see graphs above), it can reliably be said that no indicator indicates that the stock is overfished, as all the estimates point to a lightly exploited stock. Hence, the high recent landings, even if above MSY, are unlikely to reduce the stock below B_{MSY} for several years, at which time the response of landings and CPUE indicators to several years of high landings could be re-evaluated (ICCAT 2014). It is highly likely that skipjack tuna is above the PRI, therefore SG80 has been reached.</p> <p>Even though all the model results indicated the posterior distribution mean to be above the MSY level, there is no high degree of certainty about this and therefore SG100 is not</p>		

<p>PI 2.1.1</p>	<p>The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.</p> <p>met.</p> <p>Bigeye tuna:</p> <p>Status of the bigeye tuna resource is estimated by using several modeling approaches, ranging from non-equilibrium production models to integrated statistical assessment models. The results of different model formulations considered to be plausible representations of the stock dynamics were used to characterize stock status and the uncertainties in the status evaluations (ICCAT 2017).</p> <p>In 2015, results from a non-equilibrium production model and an integrated statistical assessment model, which can account for temporal changes in selectivity, were used to provide the status of the resource. Multiple runs of each model were included in the results, using alternative assumptions in order to better reflect the uncertainties in the assessment. The non-equilibrium production model results included 3 different runs, which used different individual CPUE indices. These CPUEs were based on longline indices that characterize the adult component of the stock, while the production model dynamics are based on exploitable biomass. The integrated statistical assessment model results included 12 different runs, reflecting different assumptions regarding growth, the influence of spawning biomass on recruitment, and confidence in available size data. Because the results of both non-equilibrium production model and integrated assessment model were considered to represent plausible alternative hypotheses of stock status, they were given equal weight in determining the state of the stock (ICCAT 2017).</p> <p>The Atlantic bigeye tuna stock was estimated to be overfished and that overfishing was occurring in 2014 (See Kobe plot below). Projections indicated that maintaining catch levels at the current TAC of 65,000 t was expected to recover the stock status to Convention objectives with 49% probability by 2028. However, 2016 catches (72,375 t) exceeded the TAC of 65,000 by 11%. If future catches are maintained at a level of 2016, the probability of achieving $B > B_{MSY}$ and $F < F_{MSY}$ by 2028 is expected to decrease to around 38% (ICCAT 2017).</p>  <p>Combined Kobe phase plot of non-equilibrium production model and integrated stock assessment model. The combined plot was developed by giving equal weighting between production models and integrated assessment model results. Within each model type equal weighting was given to different runs (ICCAT 2017).</p> <p>The current relative biomass was estimated using the combined results of non-equilibrium and statistical integrated assessment models. The numbers in brackets indicate 10 and 90% percentiles (ICCAT 2017).</p>
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PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.		
	<p>Relative Biomass (B_{2014}/B_{MSY}) = 0.67 (0.48-1.20)</p> <p>Relative Fishing Mortality (F_{2014}/F_{MSY}) = 1.28(0.62-1.85)</p> <p>By assuming that PRI is defined as $0.5B_{MSY}$ it is highly likely that the BET stock is above the PRI, therefore SG80 has been reached. However, the 10% percentile is below $0.5B_{MSY}$ therefore there is not a high degree of certainty that BET stock is above PRI therefore SG100 is not met.</p>		
b	Minor primary species stock status		
	Guidepost		<p>Minor primary species are highly likely to be above the PRI</p> <p>OR</p> <p>If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species</p>
	Met?		Y (see scoring per elements)
	Justification	<p>As detailed in section 3.4.3 there are 8 species to be assessed as minor primary: albacore (<i>Thunnus albacares</i>) stocks North & South, swordfish (<i>Xiphias gladius</i>) stocks North & South, Atlantic sailfish (<i>Istiophorus albicans</i>), blue marlin (<i>Makaira nigricans</i>), Atlantic white marlin (<i>Tetrapturus albicans</i>) and blue shark (<i>Prionace glauca</i>) stocks North & South. Table 2.1.1.1 presents a summary of the results of the latest stock assessments performed by the SCRS for these species. The degree of uncertainty varies greatly between the 11 different stocks.</p> <p>In the light of the information presented there is a high degree of certainty ($\geq 90\%$ile in accordance with SA3.2.3) that the following species/stocks are above the PRI (PRI defined as $1/2B_{MSY}$ or $20\%B_0$ in accordance with GSA2.2.3.1) and fluctuating around the level consistent with MSY:</p> <ul style="list-style-type: none"> ▪ <u>Albacore stock N</u>: the lowest range of the 80% CI for B_{2015}/B_{MSY} is 1.05 for the base case. ▪ <u>Swordfish stock N</u>: the lowest range of the 95% CI for B_{2015}/B_{MSY} is 0.82 from the base case for the two models used (BSP2 and SS models). ▪ <u>Swordfish stock S</u>: the lowest range of the 95% CI for B_{2015}/B_{MSY} is 0.53 from base case JABBA model. ▪ <u>Blue shark stock N</u>: Scenarios with the Bayesian Surplus Production (BSP) estimated that the stock was not overfished is $B_{2013}/B_{MSY} = 1.50$ to 1.96., while estimates obtained with the SS3 models indicate that $SSF_{2013}/SSF_{MSY} = 1.35$ to 3.45. ▪ <u>Blue shark stock S</u>: Scenarios with the BSP (Bayesian Surplus Production) estimated that the stock was not overfished ($B_{2013}/B_{MSY} = 1.96$ to 2.03). Estimates obtained with the state-space BSP were generally less optimistic, especially when process error was not included, predicting that the stock could be overfished ($B_{2013}/B_{MSY} = 0.78$ to 1.29 ▪ The lowest range of $B_{current}/B_{MSY}$ for both the Atlantic sailfish (East Atlantic stock) 	

PI 2.1.1 The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.

and the Atlantic white marlin are below 0.5 B_{MSY}, and therefore below PRI.

- In the case of the blue marlin the lowest range of the $SSB_{current}/SSB_{MSY}$ is slightly above 0.5B_{MSY} (0.53 with a 95%CI). However, the most recent assessment for this species was conducted in 2011 using data until 2009 and it was already determined at that time that the stock was overfished and that overfishing was occurring despite the Recommendation issued by ICCAT on 2000 (Rec 00-13) to establish a plan to rebuild blue marlin and white marlin populations. This rebuilding plan has been recently strengthened by a new Recommendation which entered into force the 4th of June of 2016 (Rec 15-06).

Thus, none of these 4 stocks can be considered to be highly likely above their PRIs.

Table 2.1.1.1. Summary of the latest assessments available for all species assessed as minor primary components of the P2. Featured in GREEN are stocks which are highly likely to be above PRI, while in ORANGE stocks where this condition is not fulfilled.

	Stock/ s	Latest year [^]	B _{last year} /B _{MSY}	SSB _{last year} /SSB _{MSY}	F _{last year} /F _{MSY}	Over fished	Over fishing
Albacore	Stock N	2015	1.36 (1.05-1.78)	-	0.54 (0.35-0.72)	No	No
	Stock S		1.10 (0.51-1.80)	-	0.54 (0.31-0.87)	No	No
Swordfish	Stock N	2015	1.04 (0.82 - 1.39)	-	0.72 (0.62-1.01)	No	No
	Stock S		0.72 (0.53 - 1.01)	-	0.98 (0.70-1.36)	Yes	No
Atlantic sailfish	Atl. Este	2014	0.22-0.70	-	0.33-2.85	Yes	Possibly
Blue marlin	Atl.	2009	-	0.67 (0.53-0.81)	1.63 (1.11-2.16)	Yes	Yes
Atlantic White marlin	Atl.	2010	0.50 (0.42-0.60)	0.322 (0.23-0.41)	0.99 (0.75-1.27)	Yes	Not Likely
Blue shark	Stock N	2013	1.35-3.45	-	0.15-0.75	Not likely	Not likely
	Stock S		0.78-1.29	-	0.54-1.19	Undetermined	Undetermined

([^]) Last year considered in the stock assessment

According to observers data collected on board the UoA (**Table 3-15**), for every 1,000t of production (tropical tunas retained) only 0.31t of albacore are caught. According to Table 3-6 average annual production of the UoC was 2,847 tonnes between 2016 and 2017. This means that total annual catches of the UoC would amount up to 0.9 tons of albacore (some of those catches corresponding to the North stock). **Table 3-4 and Table 3-13** confirm that most of the tuna catches correspond to the 3 tropical tunas (YFT, BET and SKJ), other tunas accounting for a much reduced percentages of the catches (also when FOB sets are included as for **Table 3-4**). Table 2.1.1.1 shows that estimated annual catches are of the UoC is negligible compared with the 2017 yield (13,679t) or the MSY value (25,901t) estimated for this stock.

Also according to data collected by the Sea Eye observers on board the two assessed vessels (**Table 3-15**) not a single sailfish was caught, while bycatches of billfishes were reduced to 0.07 tons of white marlin for every 1,000 tons of production (YFT+SKJ+BET landed) and 0.8 tons of blue marlin/1,000 tons of production. Taking into account average annual production showed in **Table 3-6**, total annual catches of the UoC would amount up to 0.2 tons of white marlin and 2.3 tons of blue marlin. Table 2.1.1.2 shows MSY, current yield (2016) and estimated UoC annual catches based on the observer's data collected between 2017 and 2018. UoC catches would represent 0.05% of the current annual catch limit established for the white marlin and 0.11% in the case of the blue marlin. Observers data collected between 2014 and 2017 (55 fishing trips) by the IEO (**Table 3-16**) show that

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.																									
	<p>a total of 116 billfishes were caught during that period. In this case, most of those individuals (91) were sailfish followed by blue marlin (21), and a single individual of white marlin was recorded. Although this set of data shows a different pattern in relation to the sailfish species composition, it is consistent in relation to show a reduced interaction between the UoC and billfishes (116 individuals caught in 55 fishing trips result in an average of 2.1 individuals caught per fishing trip). Almost 100% of bycatches of billfishes are retained as it can be seen Table 3-15 and Table 3-16).</p> <p>Table 2.1.1.2. MSY, current yield, annual catch limitation and estimated UoC catches of the sailfish (East Atlantic), white marlin and blue marlin. Source: ICCAT and Sea Eye observers data</p> <table border="1"> <thead> <tr> <th></th> <th>Albacore (South Atl)</th> <th>Sailfish (East Atl)</th> <th>White marlin</th> <th>Blue marlin</th> </tr> </thead> <tbody> <tr> <td>MSY (t)</td> <td>25,901 (15,270- 31,768)</td> <td>1,635-2,157</td> <td>874 1604</td> <td>2,837 (2,343 – 3,331)</td> </tr> <tr> <td>Current yield (2016) (t)</td> <td>13,679</td> <td>1,421</td> <td>452</td> <td>1,295</td> </tr> <tr> <td>TAC /Annual catch limit</td> <td>24,000*</td> <td>-</td> <td>400**</td> <td>2,000**</td> </tr> <tr> <td>Estimated UoC annual catches (t) based on observers data 2017-18</td> <td>0.88</td> <td>0</td> <td>0.20</td> <td>2.27</td> </tr> </tbody> </table> <p>(*) 2017 TAC; (**) Annual catch limit for 2016, 2017 and 2018</p> <p>Based on the information presented above the assessment team considers that North Atlantic albacore, Atlantic swordfish and Atlantic blue shark stocks meet SG100 since it is highly likely that they are all above the PRI, while the South Atlantic albacore, the East Atlantic sailfish stock, the blue marlin and the Atlantic white marlin also meet SG100 since there is evidence that the UoC is not hindering their recovery and rebuilding. Therefore, all 11 minor secondary stocks assessed meet SG100.</p>		Albacore (South Atl)	Sailfish (East Atl)	White marlin	Blue marlin	MSY (t)	25,901 (15,270- 31,768)	1,635-2,157	874 1604	2,837 (2,343 – 3,331)	Current yield (2016) (t)	13,679	1,421	452	1,295	TAC /Annual catch limit	24,000*	-	400**	2,000**	Estimated UoC annual catches (t) based on observers data 2017-18	0.88	0	0.20	2.27
	Albacore (South Atl)	Sailfish (East Atl)	White marlin	Blue marlin																						
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Estimated UoC annual catches (t) based on observers data 2017-18	0.88	0	0.20	2.27																						
References	ICCAT (2011e), ICCAT (2012b), ICCAT (2014b), ICCAT (2015c), ICCAT (2016f), ICCAT (2016g), ICCAT (2017a), ICCAT (2017b)																									
<i>Main scoring elements (N=2): skipjack tuna, bigeye tuna</i>		80																								
<i>Minor scoring elements (N=9): albacore stock N, albacore stock S, swordfish stock N, swordfish stock S, Atlantic sailfish East Atlantic stock, blue marlin, Atlantic white marlin, blue shark stock N, blue shark stock S</i>		100																								
Scoring summary	The assessment team followed MSC FCR v2.0 7.10.7 to score PIs with different scoring elements. Table 4: Combining element scores was used to assign the overall score for this PI; All stocks (scoring elements) meet SG80, most achieve higher performance at SG100, and only a few fail to achieve SG100.																									
OVERALL PERFORMANCE INDICATOR SCORE:		95																								
CONDITION NUMBER (if relevant):		NA																								

Evaluation Table for PI 2.1.2 – Primary species management strategy

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guided post	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to above the point where recruitment would be impaired.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.
	Met?	Y	Y	Y
	Justification	<p>SG60 and SG80 deal only with Main primary species, which in the case of the assessed fishery are Atlantic bigeye tuna and East Atlantic skipjack tuna. Therefore, those are the species components to be assessed in order to determine whether SG60 and SG80 are met.</p> <p>MSC defines a “strategy” as a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. It also states that a strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.</p> <p>ICCAT established a comprehensive range of measures comprising monitoring, stock assessment and management measures, and it also provides the necessary tools and mechanisms so they can work jointly towards achieving the management objective to keep or rebuild their target stocks at levels consistent with MSY.</p> <p>Both for East Atlantic skipjack and bigeye tunas (the two main primary species impacted by the assessed fishery) there is a strategy which integrates regular stock assessments performed by SCRS, principles for the decision making (Rec 11-13), and the complete set of measures included in the Multi-annual conservation and management program for tropical tunas (Rec 16-01), in force since June 2017. This program has been reviewed annually since its first publication in 2011 (Rec 11-01), which only referred to bigeye and yellowfin tunas, while in 2014 (Rec 14-01) the skipjack was also included. Rec 16-01 has been described in detail in sections 3.3.8 and 3.5.1, and includes catch limits on bigeye and yellowfin tunas, capacity management measures, a complete set of measure for managing FADs, additional control measures, and other provisions.</p> <p>Rec 16-01 establishes a TAC for 2016 subsequent years of 65,000 t for bigeye tuna and also mechanisms for quota transfers and adjustments in cases of underage or overage of catches. The multi-annual program on tropical tunas was initially focused on limiting the catches on juvenile bigeye tunas aiming to rebuild the stock to MSY level. Efforts to limit bycatch on juvenile bigeye started in 1998 by establishing a closed area/season for the use of FADs in the East Atlantic since juveniles of this species are commonly associated to these devices. As explained in PI 2.1.1 SI(a), although the TAC is set in order to rebuild the stock to MSC levels, the stock is still classified as being overfished and overfishing is taking place, however it is still highly likely the bigeye tuna stock is above its PRI.</p> <p>In the case of the East Atlantic skipjack the Committee recommends that the level of catch</p>		

<p>PI 2.1.2</p>	<p>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</p>
	<p>and effort should not exceed the catches of recent years but there is no TAC or any other specific regulation limiting the catches. The multi-annual program on tropical tunas was initially focused on limiting the catches on juvenile bigeye tunas, but by implication, as a side effect also resulted in management measures on the skipjack (Powers and Medley 2016), this has managed to keep the stock of skipjack above MSY levels (see PI2.1.1 SIa). Even though not much confidence is being put into the assessment model results, it can reliably be said that no indicator indicates that the stock is overfished or that overfishing is taking place (ICCAT 2014).</p> <p>A recent ICCAT Recommendation (17-01) prohibiting discards of tropical tunas (YFT, SKJ, BET) by purse seiners just entered into force 11th June 2018. This Recommendation state that vessels shall retain on board and then land or transship to port all bigeye, skipjack and yellowfin tunas caught, except for two exceptions: (i) fish unfit for human consumption and, (ii) when caught during the last set of a trip and there is not enough storage capacity. This Recommendation also notes that CPC shall report all discards observed. The client has adopted an internal protocol of full retention of all tuna catches aligned with Rec17-01.</p> <p>Therefore, SG60 and SG80 are met.</p> <p>For assessing SG100 all primary species (main AND minor have to be considered).</p> <p>Rec 16-06 on a multi-annual conservation and management program for the North Atlantic albacore establishes a TAC and catch limits for the most relevant CPCs targeting this stock, mechanisms for adjusting the quotas in cases of overage or underage of catch, capacity management and control measures, and subsequent Rec 17-04 had determined biological reference points and HCRs for this stock (the first one under ICCAT management). For the southern albacore there is a TAC and catch limits for the period 2017-2020 (Rec 16-07).</p> <p>In the case of the North and South Atlantic stocks of swordfish, TACs, catch limits, provision for quota transfer and adjustments and minimum sizes are set through Recs (17-02 and 17-03) respectively. These Recs are in force since 11 June 2018, and replaced previous Recs 16-03 and 16-04. TACs are set following the SCRS advice following to maintain (in the case of the N Atlantic stock) and rebuild (in the case of the S Atlantic stock) the stocks at levels consistent with MSY.</p> <p>Rec 15-05 was implemented to further strengthen the plan to rebuild blue marlin and white marlin stocks and also to provide annual limits for both species for the period 2016-2018 and establishes other measures such as the obligation to provide annual estimates of live and dead discards. A new stock assessment for these two species is expected for 2018, and depending on the results the SCRS shall evaluate progress towards the goals of the rebuilding program.</p> <p>Until 2016 there was no specific management measure for the Atlantic sailfish, however Rec 16-11 has entered in force in June 2017 determining management measures for the conservation of this species. This Rec notes that if the total catches of either stock of Atlantic sailfish exceeds in any year the level corresponding to 67% of the average estimate of the MSY (i.e. 1,271 t for the East Atlantic) the Commission shall review the implementation and effectiveness of this recommendation.</p> <p>The case of the blue shark is similar to that of the Atlantic sailfish since there were no specific management measures for this species until 2016. Rec 16-02 (in force since 12 June 2017) has established the following catch limit for the North Atlantic blue shark: <i>“If the average total catch of the North Atlantic blue shark in any consecutive two years from 2017 onward exceeds the average level observed during the period 2011-2015 (i.e. 39,102 t), the Commission shall review the implementation and effectiveness of these measures”</i>. Based on the review and the results of the next stock assessment scheduled for 2021 or at an earlier stage if enough information is provided to SCRS, the Commission shall consider introduction of additional measures. Also, based on the results of the next stock assessment, the Commission shall consider measures necessary to sustainably utilize the</p>

PI 2.1.2	<p>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</p>
	<p>South Atlantic blue shark stock. Finally, Rec 16-02 also provides that, <i>“in the light of the results of the next stock assessment of blue shark, the SCRS shall provide, if possible, options of HCR with the associated limit, target and threshold reference points for the management of this species in the ICCAT Convention area”</i>.</p> <p>The following provisions to reduce discards are included in Rec 16-01:</p> <p>The CPCs shall:</p> <ul style="list-style-type: none"> ▪ submit to the SCRS information on by-catches and discards made by fishing vessels flying their flag fishing for tropical tunas; ▪ encourage the vessel owners, masters and crew fishing for tropical tunas under their flag to implement good practices to better manage by-catches and reduce discards; ▪ consider designing and adopting management measures and/or management plans to better manage by-catch and reduce discards. <p>The SCRS shall:</p> <ul style="list-style-type: none"> ▪ evaluate the contribution of by-catches and discards to the overall catches in ICCAT tropical tuna fisheries, on a fishery by fishery basis; ▪ advise the Commission on possible measures allowing to reduce discards and to mitigate onboard post-harvest losses and by-catch in ICCAT tropical tuna fisheries. <p>The internal protocol aligned with Rec 17-01 adopted by the client is not restricted to catches of the three tropical tunas, it was took one step forward since they extended it to all incidental catches. Therefore, restrictions for discarding stated in Rec 17-01 (see above), in the case of the assessed vessels are applicable to all catches. This internal protocol also details that <i>“fish shall not be discarded from the vessel until an observer had estimated the species composition to be discarded”</i>.</p> <p>Rec (17-01) also mandate the SCRS to undertake work in 2020 to examine the benefits of retaining non-targeted species catches and present its recommendations to the Commission. The work should take into account all species that are usually discarded on all major gears</p> <p>Most of these Recommendations mandate or encourage (depending on the case) the CPCs to implement data collection programs that ensure the reporting of accurate catch, effort, size and live and dead discard data to ICCAT in full accordance with the ICCAT requirements for provision of Task I and Task II. The UoC has implemented a voluntary observer program that cover 100% of the fishing trips, well above the minimum of 5% of the fishing effort established by Rec (16-14) and also above the level recommended by the SCRS to provide reasonable estimates of total bycatch (Rec 16-01).</p> <p>Further, in 2012 the client signed a code of good practices on board which is based on a comprehensive manual developed by OPAGAC/AGAC and ANABAC-OPTUC with the assistance of AZTI. The code was adopted by all the OPAGAC and ANABAC fleets and initially AZTI was in charge of developing and implementing a system of verification of the code. Since the development and implementation of a specific standard for a sustainable tropical tuna purse seine fishery, the UNE1956006:2016, this code of conduct was embed as one of the sections of this standard. AZTI is now the institution in charge of assessing compliance with the implementation of this code. Additionally, a steering committee should also track its implementation. The manual on good practices provides detailed information on how to proceed to release sharks and rays, and includes specific forms for the observers to record these operations.</p> <p>Therefore, it can be argued there is a strategy in place for managing main and minor primary species. SG100 is met</p>
b	Management strategy evaluation

PI 2.1.2 There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.

Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
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Met?	Y	Y	N
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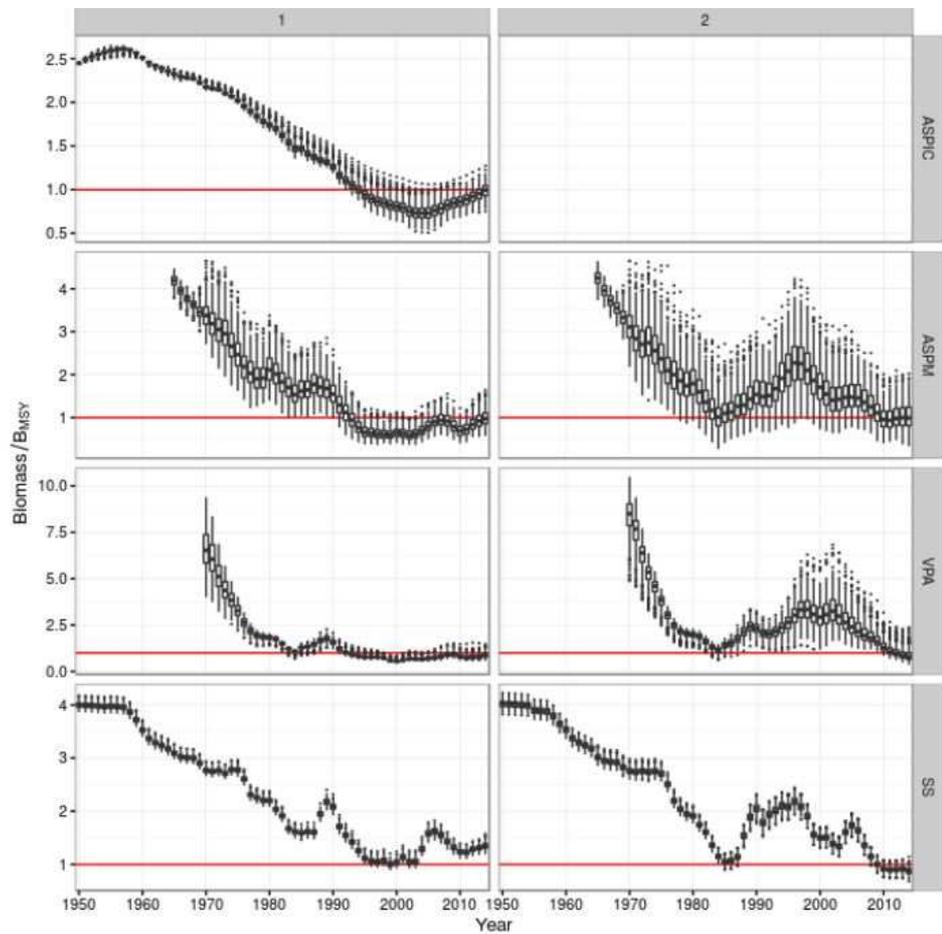
Justification

The management measures and mechanisms designed and adopted by ICCAT basically based setting a TAC or catch limit following the advice of the SCRS which in turn is based on regular stock assessments is a well-known and sound way of managing the fisheries within the Commission area. ICCAT has a long story as an RFMO and has proven its capacity to manage in tuna stocks sustainably, and even to rebuild overfished stocks such as the Eastern Atlantic and Mediterranean Bluefin tuna (ICCAT 2017).

Also the partial recovery of the YFT tuna indicates that measures are likely to work under the auspices of ICCAT. The management quantities estimated in the 2011 and 2016 YFT stock assessment (ICCAT, 2012) (ICCAT, 2016b) were the following:

$B_{2010}/B_{MSY}=0.85(0.61-1.12)$ $B_{2014}/B_{MSY}=0.95(0.71-1.36)$
 $F_{2010}/F_{MSY}=0.87(0.68-1.4)$ $F_{2014}/F_{MSY}=0.77(0.53-1.05)$

The overall health of the stock increased by approximately 10%; the stock status increased by 10% (See figure below) and the fishing pressure decreased by that amount.



Based on all the information presented above, **SG60 is met.**

<p>PI 2.1.2</p>	<p>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</p>
	<p>Even though, for the eastern Atlantic skipjack stock there is not much confidence in the stock assessment results (see graphs below), it can reliably be said that no indicator classifies the stock as overfished, as all the estimates point to a lightly exploited stock. Hence, the high recent landings, even if above MSY, are unlikely to reduce the stock below B_{MSY} for several years, at which time the response of landings and CPUE indicators to several years of high landings could be re-evaluated (ICCAT 2014).</p> <div> </div> <p>The Atlantic bigeye tuna stock was estimated to be overfished and that overfishing was occurring in 2014. Projections indicated that maintaining catch levels at the current TAC of 65,000 t was expected to recover the stock status to Convention objectives with 49% probability by 2028. However, 2016 catches (72,375 t) exceeded the TAC of 65,000 t by 11%. Therefore, if future catches are maintained at the level of 2016, the probability of achieving ($B > B_{MSY}$, $F < F_{MSY}$) is expected to decrease to around 38%, therefore there is some objective basis for confidence that the strategy will work, even if it takes longer.</p> <p>Based on the analyses conducted in 2016 as well as in 2013, the Committee believed that the current TAC for the North Atlantic albacore would maintain the long-term objectives of the Commission as specified in Rec. 16-06. Although the SCRS will continue working in reviewing and improving the MSE for northern albacore, the MSE simulations conducted in 2017 allow the Committee to provide advice that is robust to a wide range of uncertainties, including those affecting the 2016 assessment. The different model scenarios considered in the south Atlantic albacore stock assessment provide different views on the future effects of alternative management actions. Projections at a level consistent with the 2016 TAC (24,000 t) showed that probabilities of being in the green quadrant of the Kobe plot across all scenarios would increase to 63% by 2020. Further reductions in TAC would increase the probability of being in the green zone in those timeframes.</p> <p>In the case of the N Atlantic swordfish, current TAC of 13,700 t has a 36% probability of maintaining the stock in the green quadrant of the Kobe plot by 2028, whereas a TAC of 13,200 t would have a 50% probability, and would also result in the biomass being above B_{MSY} with a probability greater than 50%. While in the case of the South Atlantic swordfish stock, the current TAC of 15,000 t has a 26% probability of rebuilding the South Atlantic swordfish stock to within MSY reference levels by 2028, whereas a TAC of 14,000 t would have a 50% probability of rebuilding the stock.</p> <p>For the North Atlantic blue shark stock, all scenarios considered with the Bayesian surplus production model and the integrated model (SS3) indicated that the stock was not overfished and that overfishing was not occurring, as was also concluded in the 2008 stock assessment. The limit adopted by the Commission (based on the average catch of the final five years used in the assessment model) was considered to be precautionary by the SCRS, and therefore it should allow the strategy to work.</p> <p>Therefore, in the case of the skipjack, bigeye tuna, albacore and swordfish stocks and N Atlantic blue shark the assessment team consider that there is some objective basis for confidence that the strategy in place will work, based on information from the SCRS latest stock assessment.</p> <p>On the other hand, uncertainty associated with stock assessments of sailfish, marlins and the S Atlantic blue shark, and also the fact that sailfish and marlins are overfished and possibly overfishing is occurring (see table 2.1.1.1), puts some doubts on whether the ICCAT strategy will work for these stocks. However, the pro-active attitude showed by</p>

<p>PI 2.1.2</p>	<p>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</p>
	<p>ICCAT in recent years towards the challenges faced by these stocks is a positive sign in the right direction. The assessment team remarks the following actions as signs of this proactive attitude:</p> <ul style="list-style-type: none"> ▪ The continuous revision and improvement of the Pluriannual program for tropical tunas (after the first Recommendation for a pluriannual program for tropical tunas in 2011 it was reviewed in 2013, 2014, 2015 and 2016), ▪ The Recommendation (15-05) to further strengthen the plan to rebuild blue marlin and white marlin stocks (issued in 2012), ▪ The recent Recommendation (16-11) on management measures for the conservation of the Atlantic sailfish ▪ The recent Recommendation (16-12) on management measures for the conservation of Atlantic blue shark caught in association with ICCAT fisheries <p>Most of these Recommendations have only been in force since June 2017, therefore it is not expected to see any results as yet.</p> <p>Moreover, according to the MSC FCR P2 the environmental impact that UoA which is being assessed places on these species needs to be considered. Therefore, the focus shall be place on the impact of the UoC (the two assessed vessels when targeting free swimming tuna schools) on those species/stocks whose status is more uncertain or whose trends are not as expected: Bigeye tuna and sailfish, marlins and the S Atlantic blue shark stock.</p> <p>Table 3-6 already showed that bigeye tuna accounted for only 8.8% of the total catches of the UoC between 2016 and 2017, while Table 3-15 show that bigeye represented up to 7% of the total catches of the fishing trips observed by Sea Eye between 2017 and 2018. The SCRS estimates the MSY for this stock to be 78,824 tons, while yield in 2016 was 72,375 tons. Annual catches of the UoC between 2017 and 2018 oscillated between 12 and 397 tons, representing between 0.02 % and 0.50% of the MSY.</p> <p>As presented in</p> <p>Table 3-14 and Table 3-15 and already discussed in PI 2.1.1, UoC catches of sailfish and blue and white marlins are very small, less than 2 individuals per fishing trip on average, representing annual catches between 2.3 tons in the case of blue marlin and 0.2 t in the case of white marlin.</p> <p>According to data recorded by the Sea Eye observers on board the assessed vessels between 2017 and 2018 blue shark accounts for 0.06% of the total UoC catches. No blue shark caught during that period was retained, 33.4% was discarded dead and the remaining 66.6% released alive. This means that for every 1,000 tons of production (YFT+SKJ+BET landed) 0.19 tons of blue shark are discarded dead and 0.38 tons are released alive. According to table 3-6 average annual production of the UoC was 2,847 tons between 2016 and 2017. This means that every year the UoC would discard 0.54 tons of dead blue shark. The SCRS estimates the MSY for this species to be 24,077 tons and yield in 2013 to be 20,799 tons. Therefore, the discarded fraction generated by the UoC represents a negligible fraction of the MSY for this species. Data collected by IEO observers between 2014 and 2017 (a total of 55 fishing trips) recorded only 21 individuals caught by the UoC for that period (no weight estimations were provided). In this case the fraction discarded dead was 19.1% (data aggregated with FOB).</p> <p>Therefore, in the case of the bigeye tuna, sailfish stocks and N Atlantic blue shark the assessment team consider that there is some objective basis for confidence that the strategy in place will work, based on information collected by observers on board the assessed vessels, and also on the fact that there are new and recently reviewed Recommendations on these species.</p> <p>Based on all the information presented above, the assessment team considers that SG80 is met.</p>

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	<p>In the case of the East Atlantic skipjack, the latest stock assessment did not allow the SCRS to provide a reliable estimate of MSY, and it was recognized that is still pending the submission of additional data which are necessary to improve the stock assessment. Also, the Committee has expressed its concern regarding uncertainties which the underreporting of skipjack catches may have on the perception of the state of the skipjack Atlantic stocks.</p> <p>The bigeye tuna is still being overfished in its overfished state.</p> <p>In the case of the Atlantic swordfish stocks the indices detailed above showed reduced % of success (between 36% and 50% for the N Atlantic stock and between 26% and 50% for the S Atlantic stock, depending on the TAC). Further, the Committee emphasized that their advice does not account for removals associated with the actual mortality of unreported dead and live discard, quota carryovers, quota transfers across the North and South stock management boundaries.</p> <p>In the case of the South Atlantic blue shark stock, the Committee did not make a determination on the stock status, but cautions that the stock may have been overfished and overfishing may have occurred in recent years.</p> <p>Those uncertainties are preventing to conclude that testing supports high confidence that the strategy will work for these stocks, based on information for their stock assessments.</p> <p>In the case of the minor species/stocks, data collected by observers on board provide evidence that the UoC has a very small impact on them. Further, there is 100% observer's coverage and detailed information on bycatches is recorded. Therefore, this data could be taken as a proof supporting the strategy will work with these species/stocks. However, the historical data series available is still too short and due to some challenges about the compilation of the data from the IEO observers, the assessment team was faced with some limitation with the analysis of the data (data presented exclusively in number of individuals, the fate of the bycatch was aggregated for FOB and FSC...).</p> <p>Therefore, SG100 is not met</p>		
c	Management strategy implementation		
Guidepost		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
Met?		Y	Y
Justification	<p>There are multiple evidences that the established management measures are being implemented. The following resources can be downloaded or consulted at the ICCAT website:</p> <ul style="list-style-type: none"> ▪ Volume 4 of the ICCAT biennial reports present evidence that CPCs are complying with their obligations in relation to catch data reporting (Task I and II), although the degree of compliance varies according to the species. In the case of Guatemala, compliance is complete in relation to the report of the 3 species of tropical tunas. This volume also contains the Secretariat's Reports to the ICCAT Conservation and Management Measures Compliance Committee (COC) ▪ Stock assessments carried out by the SCRS, as well as technical reports issued by the related Working Groups, are evidence of the analysis carried based on catch data and other scientific studies. Volume 2 of the ICCAT biennial reports includes the Report of the SCRS and its appendices 		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	<p>Therefore, SG80 is met.</p> <p>Further, in the case of the UoC there is a 100% observer’s coverage (all fishing trips are observed). Data recorded by the observers are compiled and analysed by AZTI and reported to the SCRS in accordance with Task II protocols. The assessed fleet is annually assessed by AZTI against the good practices on board included in the Norma UNA195006:2016. This annual assessment verifies (among other issues related to FADs) the implementation of release operations of incidental catches according to the procedures detailed in the manual, proper recording of those activities, and training of skippers, crews and observers. The assessed vessels got the declarations of conformity signed by AZTI for 2016 and 2017.</p> <p>The assessed fleet is annually assessed by AZTI against the good practices on board included in the Standard UNE195006:2016. This annual assessment verifies (among other issues related to FADs) the implementation of release operations of incidental catches according to the procedures detailed in the manual, proper recording of those activities, and training of skippers, crews and observers. The assessed vessels got the declarations of conformity signed by AZTI for 2016 and 2017.</p> <p>Therefore, there is clear evidence that the strategy in place for managing main and minor primary species (as described in Sla) is being implemented successfully. Also, the assessment team considers that the strategy is working since it has maintained the two main primary species (skipjack and bigeye tuna) at levels which are highly likely to be above the PRI (despite the lack of a reliable estimate of a MSY for the skipjack and that bigeye tuna is still being overfished in its overfished state). Besides, observer data show that the impact of the UoC on the minor primary species is very limited and catches cannot be considered a threat for the conservation or recovery of these stocks. Further, ICCAT has taken steps towards the improved management of sailfish and blue shark, and it also strengthened its management strategy for marlins. SG100 is met.</p>		
d	Shark finning		
Guided post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
Met?	Y	Y	Y
Justification	<p>Blue shark is only shark species impacted by the UoC and assessed as a primary component of the P2.</p> <p>The client has adopted an internal protocol against shark finning. This protocol was adopted on the 24th February 2014 and states the following:</p> <p>“We are aware that shark finning contravenes the Code Of Conduct For Responsible Fishing and the FAO International Plan of Action for the Conservation and Management of Sharks. For these reasons, ATUNERA SANT YAGO, S.A and ATUNERA NACIONAL, S.A. taking into account the management measures applied by Regional Organizations (RFMOs) and national and international norms for the conservation of marine life has established and incorporated into his Tuna Trade Policy the following points:</p> <ol style="list-style-type: none"> 1) We condemn and forbid shark finning. 2) We avoid any commercial dealings with vessels which have been identified by the Regional Organizations (RFMOs) or by national or international authorities as practitioners of shark finning. 3) We avoid commercial dealings with any company which has not forbidden and condemned the practice of shark finning.” <p>Based on the above, SG60 is met</p>		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.																						
	<p>The assessed fleet has a 100% observer’s coverage. Between 2014 and 2017 the IEO used to send the client one report per every fishing trip, based on the data recorded by their observers. The fate of the bycatches (i.e. retained/discarded alive/discarded dead) was detailed in these reports and a column for shark finning was prepared to collect specific information on this issue. All these reports were reviewed by the assessment team and it can be confirmed that not a single case of shark finning (for any shark species) was recorded in the 55 observed fishing trips. Outputs based on data collected by the Sea Eye observers since April 2017 were prepared by AZTI to be shared with the assessment team. Again, not a single case of shark finning was recorded until April 2018 (26 fishing trips).</p> <p>Therefore, the team considers that it can be assured with a high level of certainty that shark finning is not taking place on board the assessed vessels. SG80 and SG100 are met.</p>																						
e	Review of alternative measures																						
Guidepost	There is a review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of unwanted catch of main primary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.																				
Met?	Y	Y	N																				
Justification	<p>According to data recorded by the observers on board the assessed vessels between 2014 and 2018 (Table 3-13), all bigeye tuna catches were retained while 0.32% of the skipjack caught by the UoC was discarded.</p> <p>A recent ICCAT Recommendation (17-01) prohibiting discards of tropical tunas (YFT, SKJ, BET) by purse seiners just entered into force 11th June 2018. This Recommendation state that vessels shall retain on board and then land or transship to port all bigeye, skipjack and yellowfin tunas caught, except for two exceptions: (i) fish unfit for human consumption and, (ii) when caught during the last set of a trip and there is not enough storage capacity. This Recommendation also note that CPC shall report all discards observed. Finally, it is noted that in 2020 the SCRS shall assess the effectiveness of this Recommendation and submit recommendations to the Commission regarding potential improvements. The client has adopted an internal protocol of full retention of all tuna catches aligned with Rec17-01.</p> <p>Since discards recorded by observers on board the assessed fishery proved that discarding of skipjack and bigeye tuna is almost nonexistent, and also Rec (17-01) foresees a review of its effectiveness two years after its implementation, SG60 and SG80 are met.</p> <p>Table below was extracted from Table 3-15 and it is based on data provided by the Sea Eye observers on board the assessed vessels between 2017 and 2018. It can be seen that all billfishes (including swordfish) were retained, while in the case of the blue shark all catches were discarded (67% were released alive and 33% were discarded dead).</p> <table border="1"> <thead> <tr> <th>Species name</th> <th>% retained</th> <th>% discarded alive</th> <th>% discarded dead</th> </tr> </thead> <tbody> <tr> <td><i>Xiphias gladius</i></td> <td>100.00%</td> <td>0.00%</td> <td>0.00%</td> </tr> <tr> <td><i>Istiophorus albicans</i></td> <td>100.00%</td> <td>0.00%</td> <td>0.00%</td> </tr> <tr> <td><i>Makaira nigricans</i></td> <td>100.00%</td> <td>0.00%</td> <td>0.00%</td> </tr> <tr> <td><i>Prionace glauca</i></td> <td>0.00%</td> <td>66.59%</td> <td>33.41%</td> </tr> </tbody> </table> <p>Fate of bycatches in data collected between 2014 and 2018 by the IEO observers (Table</p>			Species name	% retained	% discarded alive	% discarded dead	<i>Xiphias gladius</i>	100.00%	0.00%	0.00%	<i>Istiophorus albicans</i>	100.00%	0.00%	0.00%	<i>Makaira nigricans</i>	100.00%	0.00%	0.00%	<i>Prionace glauca</i>	0.00%	66.59%	33.41%
Species name	% retained	% discarded alive	% discarded dead																				
<i>Xiphias gladius</i>	100.00%	0.00%	0.00%																				
<i>Istiophorus albicans</i>	100.00%	0.00%	0.00%																				
<i>Makaira nigricans</i>	100.00%	0.00%	0.00%																				
<i>Prionace glauca</i>	0.00%	66.59%	33.41%																				

PI 2.1.2	<p>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</p>
	<p>3-16) does not allow to differentiate between FOB and FSC sets when dealing with the fate of bycatch, but shows a similar pattern in the fate of the discarded blue sharks (5% retained, 76% alive and 19% dead) and also shows that 8% of the billfish catches were discarded (almost all the individuals were dead, less than 0.6% were returned alive).</p> <p>Therefore, for the 5 species assessed as minor primary unwanted catches are kept at reduced levels and most of them are retained. The only exception is the blue shark since individuals caught are discarded, but it has to be taken into account that this species accounts for only 0.06% of the total catches (including discards), and it is estimated that at least two thirds are returned alive to the sea. This means that for every 1,000 tons of production (YFT+SKJ+BET landed) the UoC discards less than 0.2 tons of blue shark (Table 3-15).</p> <p>Bycatch is recorded by the observers and data reported by the CPCs (in the case of the UoC it is done by the research institution in charge of the observer’s program: before through IEO and now through AZTI) to the SCRS on a continuous basis. The SCRS compiles these data, together with other information (logbooks, landings, port sampling, and other research activities implemented or coordinated by ICCAT), and annually they are reviewed by specific working groups. The following specific ICCAT Working Groups are relevant to the 7 species assessed as Primary components of the P2 for this fishery: (i) Tropical tunas; (ii) Swordfish; (iii) Billfishes; (iv) Sharks. Among other tasks, these Working Groups are responsible for reviewing measures to minimize the mortality of unwanted catches. Also, the sub-committee on Ecosystems and discards (integrated in the SCRS) is commissioned for reviewing alternative measures for minimizing bycatches and discards. However, this review is done according to the needs and it is not biennial. For instance Rec (01-04) for evaluating alternatives to reduce catches of juveniles or dead discards of swordfish remains in force since 2002, but it does not record a certain timeline for reviews. Rec (16-01) encourages CPCs to submit information on bycatches and discards and consider designing and adopting management measures to better manage bycatch and reduce discards, while mandates the SCRS to evaluate the contribution of bycatches and discards on a fishery by fishery basis and to advise the Commission on possible measures allowing to reduce discards and to mitigate onboard post-harvest losses and bycatch in ICCAT tropical tuna fisheries. Finally, Rec (17-01) also mandate the SCRS to undertake work in 2020 to examine the benefits of retaining non-targeted species catches and present its recommendations to the Commission. The work should take into account all species that are usually discarded on all major gears.</p> <p>The internal protocol aligned with Rec 17-01 adopted by the client is not restricted to catches of the three tropical tunas, it was took one step forward since they extended it to all incidental catches. Therefore, restrictions for discarding stated in Rec 17-01 (see above), in the case of the assessed vessels are applicable to all catches.</p> <p>Since there is no biennial review in the case of minor species the team considers that SG100 is not met.</p>
References	<p>ICCAT (2011e), ICCAT (2012a), ICCAT (2012b), ICCAT (2014b), ICCAT (2015c), ICCAT (2016b), ICCAT (2016f), ICCAT (2016g), ICCAT (2017a), ICCAT (2017b), ICCAT (2018c)</p>
OVERALL PERFORMANCE INDICATOR SCORE:	95
CONDITION NUMBER (if relevant):	NA

Evaluation Table for PI 2.1.3 – Primary species information

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue	SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main primary species		
	<p>Guidepost</p> <p>Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA:</p> <p>Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.</p>	<p>Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA:</p> <p>Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.</p>	<p>Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status.</p>
	Met?	Y	Y
Justification	<p>The obligation for all CPCs to record and report data on catches (Task I), and catch-effort and catch-at-size (Task II) allows the SCRS to have updated and complete information on all removals of skipjack and bigeye stocks.</p> <p>A number of standardized indices of abundance have been developed for both species by national scientists for selected fleets for which data were available at greater spatial and/or spatial temporal resolution for the assessment.</p> <p>The SCRS is continuously working on improving the fishery indicators and the models used in their regular stock assessments of tropical tuna stocks. Below are some examples of the work done in recent years:</p> <ul style="list-style-type: none"> ▪ The historical series of commercial catches of skipjack and bigeye tuna were corrected since it was detected that about 30% of the landings occurring in the Ivory Coast and reported as ‘faux poisson’ (different fish species and sizes rejected by the canning industry) consisted of skipjack and also significant catches of small bigeye tuna were found to be channeled to local West African markets in this way. ▪ Species composition and catch at size from the Ghanaian fleet of bait boats and purse seiners, has been thoroughly reviewed during the past few years. This review has led to new estimates of Task I, and partially Task II catch and effort and size, for these fleets for the period 1973-2013. ▪ Average rate of discards of skipjack on FADs by European purse seiners operating in the eastern Atlantic has been estimated based on onboard observer programs, and these data are regularly integrated into the models. ▪ IUU fishing affecting tropical tunas has been estimated by comparing monitored landings in West African ports and cannery data against catches reported to ICCAT. These catches have been partially included and the associated sizes in the skipjack assessment. ▪ The use of data series on the yearly progression of the sale prices of tropical species by commercial category has been used in order to identify the years when 		

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
	<p>skipjack is more targeted by purse seiners.</p> <ul style="list-style-type: none"> ▪ Data from different tagging studies (a total of 42,520 tagged individuals released between 1960 and 2011) have been used to gain knowledge on the stock structure and growth models to be incorporated into the models. Rec 14-02 launched the implementation of the Atlantic Tuna Tagging Program (AOTTP). Tagging activity began at the end of June 2016 in Azores, EU-Portugal waters and is currently ongoing in West African waters. To date more than 12,000 tropical tunas, across species and size-ranges have been tagged and released. The most commonly tagged species so far were skipjack (ca 40%), bigeye (ca 30%) (ICCAT 2017c). ▪ Port sampling program which is being used by the SCRS assess the results of the of the area/time closure to FADs, but also to estimate IUU fishing or to review catch species composition declared at the logbooks (e.g. Ghanaian catches between 2006 and 2012 were found to be underestimated and corrected). <p>Still, there are still a lot of limitations in the information available (uncertainties on the stock structure, spatial differences in growth rates, improved CPUE trends responsive to the stock status are needed in the case of the skipjack, underreporting of catches...) and challenges to be faced (difficulties in assessing the effects of fishing mortality due to continuous reproduction in the case of the skipjack, difficulties to discriminate fishing effort on FOB and FSC, how to integrate into stock assessment models the numerous changes that have occurred in the fishery since the early 1990s...). However, regular stock assessments and annual executive summary on the species produced by the SCRS are adequate to assess and monitor the abundance and stock status of both skipjack and bigeye tuna.</p> <p>Data reported to ICCAT as Task I and Task II are mainly based on the information collected in the logbooks by the captains and the information collected by the observers on board.</p> <p>Rec 16-01 only requires the presence of an observer during the area/time closure to FADs, while and Rec 16-14 establishes that CPCs shall ensure a minimum of 5% observer coverage of fishing effort in purse seine fisheries. However, the assessed fleet has been carrying a scientific observer on every fishing trip (100% coverage) since 2012, as already explained in section 3.4.1.1(e). As shown in sections 3.2.3 and 3.4.2.1(d) these observers collect detail information on the fishing operations, catches and bycatch species composition and sampling (size). Fate of the bycatches (retained, released alive, discarded dead) is also being recorded.</p> <p>Between 2012 and February 2017 the observer program on board the assessed vessels was run by the IEO, which is the Institution in charge of reporting this data to ICCAT. Since March 2017 the observers are hired by a consultancy based in Ivory Coast (Sea Eye). During the site visit it was confirmed by both AZTI and Sea Eye representatives that the hired observers have undergone standard training courses developed and implemented by AZTI. According to ICCAT 2017d Guatemala has been reporting data on East Atlantic skipjack and bigeye tuna catch-effort since 2005 and catch-effort and catch-at-size since 2007. Data on catches and bycatches composition of the UoC is presented in Table 3-6 (logbooks) and Table 3-13, Table 3-14, Table 3-15, Table 3-16 (observers).</p> <p>Based on all the information presented above the assessment team concludes that quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoC on main primary species (skipjack and bigeye tuna) with respect to status. SG60, SG80 and SG100 are met.</p>		
b	Information adequacy for assessment of impact on minor primary species		
Guidepost			Some quantitative information is adequate to

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
			estimate the impact of the UoA on minor primary species with respect to status.
	Met?		Y
	Justification	<p>As explained in PI 2.1.1 SI (b) the SCRS perform regular stock assessments for all the minor species and stocks assessed as minor primary: albacore (<i>Thunnus albacares</i>) North & South stocks, swordfish (<i>Xiphias gladius</i>) North & South stocks, Atlantic sailfish (<i>Istiophorus albicans</i>), blue marlin (<i>Makaira nigricans</i>), Atlantic white marlin (<i>Tetrapturus albicans</i>) and blue shark (<i>Prionace glauca</i>) North & South stocks. Despite the degree of uncertainty which varies greatly between the 9 different stocks it can be concluded that regular stock assessments and annual executive summaries on the species are produced by the SCRS, which are adequate to assess and monitor the abundance and stock status for all of them.</p> <p>As explained in the previous SI, the assessed fleet has been carrying a scientific observer on every fishing trip (100% coverage) since 2012. As shown in sections 3.2.3 and 3.4.2.1(d) these observers collect detail information on the fishing operations, catches and bycatch species composition and sampling (size). Fate of the bycatches (retained, released alive, discarded dead) is also recorded. Observers' data on bycatch composition of the UoC is presented in Table 3-13, Table 3-14, Table 3-15 and Table 3-16. SG100 is met.</p>	
c	Information adequacy for management strategy		
	Guidpost	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main Primary species.
	Met?	Y	N
	Justification	<p>As previously argued in PI 2.1.2 SI (a), there is a strategy in place for managing main and minor primary species. Most of the Recommendations integrating this strategy mandate or encourage (depending on the case) the CPCs to implement data collection programs that ensure the reporting of accurate catch, effort, size and live and dead discard data to ICCAT in full accordance with the ICCAT requirements for provision of Task I and Task II.</p> <p>The assessed vessels have a 100% observer's coverage since 2012, and these observers are proceeding in accordance with the National Observer Data Collection Program established by ICCAT. Data collected by the observers' on board the assessed vessels is reviewed at the Sea Eye offices in Abidjan before being sent to AZTI where they will be reviewed again, analyzed and reported to ICCAT.</p> <p>Therefore, the information which have been presented and discussed in previous SI (a) and SI (b) is considered adequate to support the strategy in place for managing main and minor primary species as described PI 2.1.2 SI (a).</p> <p>SG60 and SG80 are met.</p> <p>Further, the assessment team considers the strategy is achieving its overall objective since it has maintained the two main primary species (skipjack and bigeye tuna) at levels which are highly likely to be above the PRI, and also observer's data show that the impact of the UoC on the minor primary species is very limited and catches cannot be considered a threat for the conservation or recovery of these stocks.</p> <p>However, there are still a lot of uncertainties affecting the stock assessment and status</p>	

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
	determination which prevent the assessment team to conclude that the available information allows evaluating with a high degree of certainty whether the strategy is achieving its objective (e.g. the lack of a reliable estimate of a MSY for the skipjack, the fact that bigeye tuna is still being overfished whilst below MSY level, sailfish and marlins are overfished and possibly overfishing is occurring). SG100 is not met.		
References	ICCAT 2017c, ICCAT 2017d, ICCAT 2018c.		
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.2.1 – Secondary species outcome

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Main secondary species stock status			
	Guidepost	<p>Main Secondary species are likely to be within biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main secondary species are highly likely to be above biologically based limits</p> <p>OR</p> <p>If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.</p> <p>AND</p> <p>Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main secondary species are within biologically based limits.</p>
	Met?	Not Relevant	Not relevant	Not relevant
	Justific	Table 3-17 presents all P2 species scoring elements considered in this assessment,		

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.		
	ation	<p>including its assignment to the P2 species categories provided by MSC ('Primary/Secondary/ETP' and 'Main/Minor').</p> <p>The resulting comprehensive list include a total of 40 species to be assessed as Secondary components of the P2: 3 rays, 1 shark, 6 tunas and tuna-like species, 2 billfishes and 28 other bony fishes. According to all the different sources of information consulted (logbooks -Table 3-6-, Amandè et al 2012 -Table 3-11-, and observers data -Table 3-13, Table 3-14, Table 3-15 and Table 3-16-), catches for all the above mentioned species would fall far below the threshold to be considered 'Main' subcomponents. Therefore, the assessed fishery does not impact on any P2 main subcomponent. Thus, this SI is not relevant.</p>	
b	Minor secondary species stock status		
	Guidepost		<p>Minor secondary species are highly likely to be above biologically based limits.</p> <p>OR</p> <p>If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species</p>
	Met?		N
	Justification	<p>As explained in previous SI, the resulting comprehensive list includes a total of 38 species to be assessed as minor secondary components of the P2: 2 rays, 6 tunas and tuna-like species, 2 billfishes and 28 other bony fishes. See Table 3-17 for the complete list.</p> <p>The SCRS issues an annual report on the status of small tuna stocks that include the 6 tuna species classified as minor secondary, but the report is limited to collecting catch statistics, analyzing trends and verifying the limitations of the information available. In 2017, the Ecological Risk Analysis (ERA) was updated for the small tuna caught by longline and purse seine fisheries in the Atlantic (as reported in ICCAT 2018d). The study found that the top 3 stocks at risk in the Atlantic Ocean that should deserve most of the managers' attention were <i>E. alleteratus</i>, <i>A. solandri</i> and <i>S. cavalla</i> (only <i>E. alleteratus</i> is impacted by the by the assessed fishery).</p> <p>The SCRS has developed indicators for small tunas, however, their robustness still need to be evaluated before they can be used to provide management advice to the Commission.</p> <p>Arrizabalaga et al in 2011 performed an Ecological Risk Assessment to all the species caught by the different tuna fisheries occurring in the Atlantic. Several of the species assessed as minor secondary got high risk values.</p> <p>In any case, biologically based limits have not been established for any of the species assessed as minor secondary.</p> <p>Since stock status reference points are not available for any of the minor secondary species impacted by the UoC, they were all classified as Data Deficient species according to FCR7.7.6 (see Table 3-17) and a RBF shall be triggered for assessing this SI. However, PF4.1.4 allows the team to avoid conducting RBF on 'minor' species when evaluating PI2.1.1 or 2.2.1 as far as final PI score is adjusted downward according to clause PF5.3.2. Due to the high number of different taxa to be assessed as minor secondary species the assessment team decided to take this option. Therefore, in accordance with PF5.3.2.1 the final PI score shall not be greater than 80.</p>	

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.	
References	Arrizabalaga et al 2011, ICCAT 2018d	
OVERALL PERFORMANCE INDICATOR SCORE: (as a result of applying PF5.3.2.1)		80
CONDITION NUMBER (if relevant):		NA

Evaluation Table for PI 2.2.2 – Secondary species management strategy

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guided post	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.
	Met?	Y	Y	Y
	Justification	<p>Since no main secondary species are impacted by the UoC, SG60 and SG80 are met.</p> <p>The SCRS issues a report on the status of small tuna stocks that include the 6 tuna species classified as minor secondary. The report collects catch statistics, analyzes trends and verifies the limitations of the information available. Also, ecological Risk Assessments have been performed small tunas caught by longline and purse seine fisheries in the Atlantic, the latest being performed in 2017 (ICCAT 2018d).</p> <p>Recommendation 11-10 encourages CPCs to require the collection of by-catch and discard data in both observer programs and logbooks.</p> <p>Recommendation 04-10 on the conservation of sharks caught in association with fisheries managed by ICCAT established some measures regarding reporting and encouraging the release of live shark, especially juveniles, to the extent possible that are caught incidentally and are not used for food.</p> <p>The following provisions to reduce discards are included in Rec 16-01:</p> <p>The CPCs shall:</p> <ul style="list-style-type: none"> ▪ submit to the SCRS information on by-catches and discards made by fishing vessels flying their flag fishing for tropical tunas; ▪ encourage the vessel owners, masters and crew fishing for tropical tunas under their flag to implement good practices to better manage by-catches and reduce discards; ▪ consider designing and adopting management measures and/or management plans to better manage by-catch and reduce discards. <p>The SCRS shall:</p> <ul style="list-style-type: none"> ▪ evaluate the contribution of by-catches and discards to the overall catches in ICCAT tropical tuna fisheries, on a fishery by fishery basis; ▪ advise the Commission on possible measures allowing to reduce discards and to mitigate onboard post-harvest losses and by-catch in ICCAT tropical tuna fisheries. <p>ICCAT is also promoting specific research programs on some of the minor secondary species, such as: the Enhanced Billfish Research Program (EBRP), the Small Tuna Year Program (SMTYP), the Shark Research and Data Collection Program (SRDCP) and the</p>		

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	<p>Atlantic Ocean Tropical tuna Tagging Program (AOTTP) which includes some small tunas.</p> <p>Most of these Recommendations mandate or encourage (depending on the case) the CPCs to implement data collection programs that ensure an accurate of the bycatches (including live and dead discards) to ICCAT. The UoC has implemented a voluntary observer program that cover 100% of the fishing trips, well above the minimum of 5% of the fishing effort established by Rec (16-14) and also above the level recommended by the SCRS to provide reasonable estimates of total bycatch (Rec 16-01).</p> <p>In 2012 the client signed a code of good practices on board which is based on a comprehensive manual developed by OPAGAC/AGAC and ANABAC-OPTUC with the assistance of AZTI. The code was adopted by all the OPAGAC and ANABAC fleets and AZTI was in charge of developing and implementing a system of verification of the contents of the code. Since the development and implementation of a specific standard for a sustainable tropical tuna purse seine fishery, the UNE1956006:2016, this code of conduct was embed as one of the sections of this standard. AZTI verifies, on an annual basis, compliance the implementation of this code in each of the vessels from the OPAGAC members (including the assessed vessels). Additionally, a steering committee should also track its implementation. The manual on good practices provides detailed information on how to proceed to release sharks and rays, and includes specific forms for the observers to record these operations. For more details on this issue see section 3.2.5.</p> <p>Based on all the information above the assessment team considers that there is a strategy in place for managing main and minor secondary species. SG100 is met.</p>		
b	Management strategy evaluation		
Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
Met?	Y	Y	N
Justification	<p>In the case of the minor species/stocks, data collected by observers on board provide evidence that the UoC has a much reduced impact on them.</p> <p>According to data recorded by the observers between 6.99 and 8.12t (depending on the set of data, IEO or Sea Eye) of small tunas are caught for every 1,000t of production (YFT+SKJ+BET landed), while in the case of other bony fish species the ratio would be 0.31-0.56t/1,000 production and in the case of the pelagic stingray it would result in 0.01t/1,000t production. Since average annual production of the UoC between 2017 and 2018 amounted up to 2,847t, the annual catch of the UoC would include between 19 and 23t of small tunas, between 0.9 and 1.6t of other bony fishes and about 30kg of pelagic stingray.</p> <p>Further, there is 100% observer's coverage and detailed information on bycatches is being recorded. Therefore, there is some objective basis for confidence that the strategy will work based on observer's data from the UoC. SG80 is met.</p> <p>However, the historical series of data available is still too short and some shortages on the way data from the IEO observers were presented to the assessment team limited the analysis (data presented exclusively in number of individuals, the fate of the bycatch was aggregated for FOB and FSC...).</p> <p>Further, although the SCRS has the mandate from the Commission to evaluate the contribution of by-catches and discards to the overall catches in ICCAT tropical tuna</p>		

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
	fisheries, on a fishery by fishery basis, the assessment team is not aware of any specific study on this issue. SG100 is not met.			
c	Management strategy implementation			
	Guidepost	There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).	
	Met?	Y	Y	
	Justification	<p>The annual report of the small tuna species group provides evidence of the analysis carried based on catch data and other scientific studies.</p> <p>The SCRS issues a report on the status of small tuna stocks that include the 6 tuna species classified as minor secondary. The report collects catch statistics, analyzes trends and verifies the limitations of the information available. Also, Ecological Risk Assessments have been performed small tunas caught by longline and purse seine fisheries in the Atlantic, the latest being performed in 2017.</p> <p>Further, in the case of the UoC there is a 100% observer’s coverage (all fishing trips are observed). Data recorded by the observers are compiled and analyzed by AZTI and reported to the SCRS.</p> <p>The assessed fleet is annually assessed by AZTI against the good practices on board included in the Standard UNE195006:2016. This annual assessment verifies (among other issues related to FADs) the implementation of release operations of incidental catches according to the procedures detailed in the manual, proper recording of those activities, and training of skippers, crews and observers. The assessed vessels got the declarations of conformity signed by AZTI for 2016 and 2017.</p> <p>Therefore, there are clear evidences that the strategy in place is being implemented successfully. Also, the assessment team considers the strategy is achieving its overall objective since the UoC does not impact on main subcomponents and data recorded by observer on board show that the impact of the UoC on the minor primary species is very limited and catches cannot be considered a threat for the conservation or recovery of these stocks. SG80 and SG100 are met.</p>		
d	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	None of the secondary species listed in table 3-15 are sharks (only 2 species of ray, which are not susceptible of finning). Therefore, this scoring issue need not be scored.		
e	Review of alternative measures to minimise mortality of unwanted catch			
	Justification	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-	There is a regular review of the potential effectiveness and practicality of alternative	There is a biennial review of the potential effectiveness and practicality of alternative

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.																																														
	related mortality of unwanted catch of main secondary species.	measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.																																												
Met?	Y	Y	N																																												
Guidepost	<p>Since no main secondary species are impacted by the UoC, SG60 and SG80 are met.</p> <p>Data on the fate of the minor secondary species impacted by the UoC are presented in tables below:</p> <p>Table 2.2.2.1 Data on minor secondary species extracted from Table 3-15 based on data provided by the Sea Eye observers on board the assessed vessels between 2017 and 2018.</p> <table border="1"> <thead> <tr> <th>Species name</th> <th>% retained</th> <th>% discarded alive</th> <th>% discarded dead</th> </tr> </thead> <tbody> <tr> <td><i>Euthynnus alletteratus</i></td> <td>83.33%</td> <td>0.00%</td> <td>16.67%</td> </tr> <tr> <td><i>Thunnus alalunga</i></td> <td>83.33%</td> <td>0.00%</td> <td>16.67%</td> </tr> <tr> <td><i>Auxis thazard</i></td> <td>63.83%</td> <td>0.00%</td> <td>36.17%</td> </tr> <tr> <td><i>Pteroplatytrygon violacea</i></td> <td>0.00%</td> <td>100.00%</td> <td>0.00%</td> </tr> <tr> <td>Other bony fish spp.</td> <td>38.06%</td> <td>61.94%</td> <td>0.00%</td> </tr> </tbody> </table> <p>Table 2.2.2.2 Data on the fate of the minor secondary species impacted by the UoC. Data collected by IEO observers on board the assessed vessels between 2014 and 2018. Fate refers to all fishing operations (FOB + FSC)</p> <table border="1"> <thead> <tr> <th>Species name</th> <th>% retained</th> <th>% discarded alive</th> <th>% discarded dead</th> </tr> </thead> <tbody> <tr> <td>Other tunas</td> <td>70.78%</td> <td>0.00%</td> <td>29.22%</td> </tr> <tr> <td><i>Pteroplatytrygon violacea</i></td> <td>2.44%</td> <td>58.54%</td> <td>39.02%</td> </tr> <tr> <td><i>Tetrapturus pfluegeri</i></td> <td>83.33%</td> <td>16.67%</td> <td>0.00%</td> </tr> <tr> <td>Other bony fish spp.</td> <td>58.55%</td> <td>18.37%</td> <td>23.77%</td> </tr> </tbody> </table> <p>Despite the fate of bycatches recorded by the IEO observers does not allow to differentiate between FOB and FSC sets, it is clear that most of the small tunas caught are retained (between 64 and 83%) while the remaining percentage are discarded dead. According to data recorded by the observers between 1.73 and 2.37t (depending on the set of data) of small tunas would be discarded for every 1,000t of production (YFT+SKJ+BET landed).</p> <p>On the other hand, all catches of the pelagic stingray (<i>P.violacea</i>) are normally discarded, and most of the times released alive (between 59 and 100% depending on the set of data). In the case of the other bony fish species the discarded fraction is significant (between 42 and 61% depending on the set of data). According to IEO data more than 50% of the discarded fraction is dead, while according to Sea Eye data 100% are released alive.</p> <p>Unwanted catches (discards) are recorded by the observers and these data are reported by the CPCs (in the case of the UoC is done by the research institution in charge of the observer's program: before through IEO and now through AZTI) to the SCRS on a continuous basis. The SCRS compiles these data, together with other information (logbooks, landings, port sampling, and other research activities implemented or coordinated by ICCAT), and annually they are reviewed by specific working groups. The following specific ICCAT Working Groups are relevant to the Secondary components of the P2 for this fishery: (i) Billfishes; (ii) Small tunas. Also, the sub-committee on Ecosystems and discards (integrated in the SCRS) is commissioned for reviewing alternative measures for minimizing bycatches and discards. Efforts such as a macro-risk analysis (PSA) covering</p>			Species name	% retained	% discarded alive	% discarded dead	<i>Euthynnus alletteratus</i>	83.33%	0.00%	16.67%	<i>Thunnus alalunga</i>	83.33%	0.00%	16.67%	<i>Auxis thazard</i>	63.83%	0.00%	36.17%	<i>Pteroplatytrygon violacea</i>	0.00%	100.00%	0.00%	Other bony fish spp.	38.06%	61.94%	0.00%	Species name	% retained	% discarded alive	% discarded dead	Other tunas	70.78%	0.00%	29.22%	<i>Pteroplatytrygon violacea</i>	2.44%	58.54%	39.02%	<i>Tetrapturus pfluegeri</i>	83.33%	16.67%	0.00%	Other bony fish spp.	58.55%	18.37%	23.77%
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PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	<p>all incidental catches of tuna fisheries in the Atlantic, such as that carried out by Arrizabalaga et al 2011, are the result of work carried out by this Sub-Committee.</p> <p>Among other tasks, these Working Groups are responsible for reviewing measures to minimize the mortality of unwanted catches. However, this review is done according to the needs and it is not biennial.</p> <p>As part of the provisions aimed to reduce discards in Rec (16-01), it is stated that: “When revising this Recommendation, the Commission shall consider the adoption of possible provisions for a better management of by-catches and reduction of discards in ICCAT tropical tuna fisheries”. Later Rec (17-01) mandate the SCRS to undertake work in 2020 to examine the benefits of retaining non-targeted species catches and present its recommendations to the Commission. The work should take into account all species that are usually discarded on all major gears.</p> <p>Since there is no biennial review in the case of minor species the team considers that SG100 is not met.</p>		
References	ICCAT 2018c, ICCAT 2018d		
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.2.3 – Secondary species information

PI 2.2.3	Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information adequacy for assessment of impacts on main secondary species			
	Guidepost	<p>Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA:</p> <p>Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.</p>	<p>Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA:</p> <p>Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.</p>	<p>Quantitative information is available and adequate to assess with a high degree of certainty the impact of the UoA on main secondary species with respect to status.</p>
	Met?	Y	Y	Y
	Justification	Since there is a 100% observer coverage of the fishing trips performed by the assessed vessels, and that information is matching with data reported in the UoA logbooks and other sources of information consulted (see Section 3.4.1.1 for more details), the assessment team can ensure that quantitative information is available and adequate to		

PI 2.2.3	Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
	assess with high degree of certainty that there is no impact of the UoA on main secondary species. SG60, SG80 and SG100 are met by default.		
b	Information adequacy for assessment of impacts on minor secondary species		
Guidpost			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
Met?			N
Justification	<p>The assessed fleet has been carrying a scientific observer on every fishing trip (100% coverage) since 2012, as already explained in section 3.4.1.1(e). As shown in sections 3.2.3 and 3.4.2.1(d) these observers collect detail information on the fishing operations, catches and bycatch species composition and sampling (size). Fate of the bycatches (retained, released alive, discarded dead) is also recorded. Observers' data on bycatches composition of the UoC is presented in tables</p> <p>Table 3-14, Table 3-15 and Table 3-16. IEO observers were not identifying catches on 'other bony fishes' down to species level, they were all grouped under the generic label. However, this gap has been solved since Sea Eye observers are recording these catches down to species level.</p> <p>Knowledge on the biology and fishery of small tunas is very fragmented. Furthermore, the quality of the knowledge varies according to the species concerned. This is due in large part to the fact that these species are often perceived to have little economic importance compared to other tunas and tuna-like species, and owing to the difficulties in conducting sampling of the landings from artisanal fisheries, which constitute a high proportion of the fisheries exploiting small tuna resources. The large industrial fleets often discard small tuna catches at sea or sell them on local markets mixed with other by-catches, especially in Africa. The amount caught is rarely reported in logbooks; however observer programs from purse seine fleets have recently provided estimates of catches of small tunas (this is the case of the UoC as explained above).</p> <p>Based on the available information the SCRS issues an annual on the status of small tuna stocks that include the 6 tuna species classified as minor secondary. Further, the SCRS has performed Ecological Risk Analysis (ERA) for the small tuna caught by longline and purse seine fisheries in the Atlantic, the latest in 2017. Despite the SCRS has developed indicators for small tunas, their robustness still need to be evaluated before they can be used to provide management advice to the Commission.</p> <p>Stock status of the remaining minor secondary species (2 rays, 2 billfish and 28 other bony fishes) have not been determined, apart from the Ecological Risk Assessment performed by Arrizabalaga et al in 2011 to several species caught by the different tuna fisheries occurring in the Atlantic.</p> <p>In summary, although observers on board the UoC are providing detailed quantitative information to estimate the impact of the UoC on minor secondary species, this impact cannot be related to the stock status of those species. SG100 is not met.</p>		
c	Information adequacy for management strategy		
Guidpost	Information is adequate to support measures to manage main secondary species.	Information is adequate to support a partial strategy to manage main secondary species.	Information is adequate to support a strategy to manage all secondary species, and evaluate with

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
				a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	Y	N
	Justification	<p>Since no main secondary species are impacted by the UoC, SG60 and SG80 are met by default.</p> <p>Data collected by the observers on board the UoC provides enough details on its impacts on minor secondary species. Further, observers' coverage achieves 100% of fishing trips and, on a year basis, AZTI assesses the implementation of the good practices on board according to requirements established in the Standard UNE195006:2016 and the OPAGAC/ANABAC code of conduct.</p> <p>However, despite efforts made by ICCAT regarding gaining knowledge on the biology through research programs (e.g. EBRP, SMTYP, SRDCP, AOTTP) and stock status of those species (evaluation of data-limited approaches in order to provide scientific information on the status of small tunas), there are still a lot of uncertainties. Therefore, the assessment team cannot conclude that the available information allows evaluating with a high degree of certainty whether the strategy is achieving its objective. SG100 is not met.</p>		
References		Arrizabalaga et al in 2011, ICCAT 2018c, ICCAT 2018d		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue	SG 60	SG 80	SG 100	
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guided post	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and likely to be within these limits.	Where national and/or international requirements set limits for ETP species, the combined effects of the MSC UoAs on the population/stock are known and highly likely to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a high degree of certainty that the combined effects of the MSC UoAs are within these limits.
	Met?	Not relevant	Not relevant	Not relevant
Justification	<p>According to SA3.1.5 ETP species are those that are recognised by national ETP legislation (SA3.1.5.1) or listed international binding agreements (Appendix I of the CITES, binding agreements concluded under the CMS (SA3.1.5.2). 'Out of scope' species (sea turtles, marine mammals, sea birds and amphibians) included in the IUCN and classified as 'VU', 'EN' or 'CE' are also considered as ETP.</p> <p>All ETP species that may potentially interact with the UoC based on ICCAT data are listed in Table 3-17, while the actual catch of ETP species by the UoA based on observer data are listed in</p>			

PI 2.3.1	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>			
	<p>Table 3-14, Table 3-15 and Table 3-16 in the last five years (2014-2018). Any ETP species which have interacted with the assessed vessels during the observed period (2012-2018) is listed in Table 3-21. There are no national and / or international catch limits set for any of the species listed in Table 3-21 that are applicable to the assessed fishery. In the case of CITES Appendix I species, there is a prohibition on their international trade, but in no case are limits established for their capture. Therefore the SI (a) does not apply to any of the ETP species of this fishery. See score in letter b.</p>			
b	Direct effects			
	Guided post	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Known direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	Marine mammals: Yes Sea turtles: Yes Sharks and rays: Yes	Marine mammals: No Sea turtles: Yes Sharks and rays: Yes	Marine mammals: No Sea turtles: No Sharks and rays: No
	Justification	<p><u>Marine mammals</u></p> <p>The observer data for 2014-2016 identifies 23 cetaceans of four species captured in a total of 302 FSC sets. The observer data for the period 2017-2018 identifies no cetaceans taken, but it is curious that in the previous period 23 marine mammals were taken, and in the following two years, none were taken. This could reflect either a change if fishing strategy or a different fishing area, or a change in the observer data collection. It is notable that there was also a change in the observer contractor.</p> <p>Fin whales are IUCN red listed as endangered, and are listed on Appendix I of the Convention on Trade in Endangered Species (CITES). Fin whales are also listed on Appendices I and II of the Convention on Migratory Species (CMS). During the 2014-2016 period, 1 fin whale is reported taken, and 7 unidentified baleen whales are also reported captured, and all are reported released alive. The International Whaling Commission (IWC) has no estimates of fin whale stock abundance for the eastern south Atlantic (https://iwc.int/estimate).</p> <p>Humpback whales are IUCN red listed as Least Concern, but they are listed on CITIES Appendix 1 and on the CMS Appendix 1. During the 2014-2016 period, 3 humpback whales are reported taken, and 7 unidentified baleen whales are also reported captured, and all are reported released alive. In 2005 the IWC indicated that the population in the eastern South Atlantic was 9800 individuals, and increasing at 4-5% annually (https://iwc.int/estimate)</p> <p>Byrde's whales are IUCN red listed as Least Concern, and they are listed on CITIES Appendix 1 and on the CMS Appendix 1. During the 2045-2016 period, 11 Byrde's whales are reported taken, and all are reported released alive. The International Whaling Commission (IWC) has no estimates of Byrde's whale stock abundance for the eastern south Atlantic (https://iwc.int/estimate).</p> <p>Risso's dolphin are IUCN red listed as Least Concern, and are listed the CMS MOU. During the 2015-2016 period, 1 Risso's dolphin are reported taken, and it is reported released alive. There are no estimates of Risso dolphin abundance in the eastern south Atlantic.</p> <p>In summary, based on the data for the 2014-2016 period, only the one identified fin whale and the 7 unidentified baleen whales are potentially problematic based on the IUCN red</p>		

<p>PI 2.3.1</p>	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>
	<p>list, as these are the only endangered marine mammal species taken. While all captured marine mammals were reported to be released alive, the effects of being captured on the survival and reproductive capacity of the individual are unknown. It is also important to note that whale sets most likely intentional, and the capture of whales can be avoided by not setting on whales. This may explain the lack of whales reported captured in the 2017-2018 data.</p> <p>A comprehensive PSA exercise was performed by Arrizabalaga et al. (2011) using the by-catch species included in the ICCAT list for Atlantic tuna fisheries. The results showed that, although marine mammals have the highest average intrinsic vulnerability to population decline, their susceptibility scores is extremely low in the case of purse seine fisheries owing to the low frequency of interactions. As a result the authors did not include this taxonomic group in the final risk ranking (Arrizabalaga et al., 2011).</p> <p>Therefore the fishery meets the SG60 requirements that the known direct effects of the UoA are likely to not hinder recovery of the marine mammal ETP species, because the takes or interactions reasonable low, despite not knowing the status of the species involved, and all are released alive. The fishery does not meet the SG80 requirements because the status of Bryde's and fin whales are unknown, and therefore it is impossible to determine that the UoA is highly unlikely to not hinder the recovery of these species. Further, the interactions with whales, in particular large whales are avoidable by not setting on them. . It has been decades since the International Whaling Commission has banned the hunting of whales, and while the setting of purse seines directly on whales may not be considered hunting because there is not the intention to kill the whales, it is clearly the act of intentionally setting a fishing gear with the intention of at least temporarily capturing a whale that would hopefully then be released. It is interesting to note that the intentional setting of purse seines on whales and whale sharks is prohibited by two RFMOs, IOTC and WCPFC, but that ICCAT does not have a similar prohibition According to Escalle et al (2016) only 0.6% of all tuna purse seine sets in the eastern Atlantic and western Indian Ocean encircle cetaceans, and there are limited observations of direct mortality of large baleen whales, although most cetaceans are released alive. The fishery needs to address this issue, as 22 large whales were reported captured in the 20145-2016 observer data, and then none were reported captured in the 2017-2018 data. The fishery does not meet the SG100 requirements as there is not a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species</p> <p><u>Sea turtles</u></p> <p>The observer data for the 2014-2016 period identifies a total of 38 sea turtles of four different species captured, and overall all 98% were released alive. In the 2017-2018 period only 11 sea turtles were reported taken, and all were reported to be released alive.</p> <p>Olive ridley turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Sixteen Olive ridley sea turtles were taken in the 2014-2016 period, and 10 were taken in the 2017-2018 period. Almost all olive ridley turtles (99%) were released alive. According to the IUCN red list, the abundance of olive ridley turtles is in decline, and the exact abundance of the stock is unknown (http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T11534A3292503.en).</p> <p>Loggerhead turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Sixteen loggerhead sea turtles were taken in the 2014-2016 period, and 96% were released alive. No loggerhead turtles were taken in the 2017-2018 period. According to the IUCN red list, the overall abundance of loggerhead sea turtles is decreasing, including the sub-population of the eastern north Atlantic. The exact abundance of the stock is unknown (http://www.iucnredlist.org/species/3897/119333622#assessment-information).</p> <p>Green turtles are IUCN red listed as endangered, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. Five green sea turtles were taken in the 2014-2016 period, and 100% were released alive. No green turtles were taken in the 2017-</p>

PI 2.3.1	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>
	<p>2018 period. According to the IUCN red list, the overall abundance of green sea turtles is decreasing, including the sub-population of the eastern south Atlantic. The exact abundance of the stock is unknown (http://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T4615A11037468.en).</p> <p>Leatherback turtles are IUCN red listed as vulnerable, and are listed in CITES Appendix 1, the CMS Appendix 1, and in the Atlantic Turtles MOU. One leatherback sea turtle was taken in the 2014-2016 period, and one leatherback turtles was taken in the 2017-2018 period. All (100%) were released alive. According to the IUCN red list, the overall abundance of leatherback sea turtles is decreasing, including the sub-population of the eastern south Atlantic. The exact abundance of the stock is unknown (http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T6494A43526147.en).</p> <p>In summary, 38 sea turtles are captured in the 2015-2016 period, and 11 were taken in the 2017-2018 period. Almost all were released alive. Relatively few sea turtles are captured in FSC sets, as compared with associated or FOB sets, so from a conservation perspective, FSC sets results in less impact on sea turtles.</p> <p>Therefore the fishery meets the SG60 and 80 requirements that the known direct effects of the UoA are highly likely to not hinder recovery of the sea turtle ETP species, because the takes or interactions are reasonably low, despite not knowing the status of the species involved, and most are released alive. The SG100 requirements are not met, as there is not a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species</p> <p><u>Sharks and rays</u></p> <p>The observer data for the 2014-2016 period identifies a total of about 300 sharks of five different species captured, and overall all 50% were released alive, and about 19 large rays were captured and about 60% were released alive. In the period 2017-2018, 281 sharks were taken including 1 whale shark, and 8 rays and mantas were taken. Again only about 50% of these were released alive.</p> <p>Silky sharks were taken in the greatest numbers, 294 in the 2014-2016 period, and about 44% were released alive, and 159 in the 2017-2018 period with 86% released alive. Silky sharks are listed on the CMS MoU. The stock status of silky sharks is unknown, but there is concern for the stock as it caught in large numbers in the purse seine FAD fishery.</p> <p>The catch of oceanic white tip sharks in the period 2014-2016 was 5 individuals, and about 66% were released alive, and 2 individuals in the 2017-2018 period with 100% released alive. Oceanic white tip sharks are identified here as an ETP species as a precaution. The stock status of oceanic white tip sharks is unknown.</p> <p>The catch of short fin mako in the 2014-2016 period was 1 individual, and it was released alive, and 1 individual in the 2017-2018 period, and it was released alive. ICCAT has recently conducted an assessment of this species, and the north Atlantic stock was found to be overfished B2015/BMSY was 0.63-0.85, and overfishing was occurring, The south Atlantic stock was found to be not overfished (B2015/BMSY=1.69 to 1.75) but that overfishing may be occurring. The shortfin mako is listed by the CMS MOU so it is considered as an ETP species for MSC assessment purposes, but based on the ICCAT stock assessment for the south Atlantic stock, it does not appear to be endangered or threatened.</p> <p>Smooth hammerhead and scalloped hammerhead sharks were captured in very small numbers, 4 and 2 respectively in a two year period 2014-2016, and about 50% were released alive. There were 22 scalloped hammerhead sharks taken in the 2017-2018 period, and about 80% were released alive. Both species are listed by the CMS appendix 1 and the CMS MOU. The status of each of these stocks is unknown.</p> <p>The catch of smoothtail mobula, a ray, during the period 2014-2016 was 11 individuals and about 60% were released alive. Only 1 smoothtail mobula was taken in the 2017-2018</p>

PI 2.3.1	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>		
		<p>period, and it was released alive. Other species of large ray were captured including spinetail mobula, Chilean devil ray and a giant manta. Catches of these species were 2, 4, 2 individuals in the 2014-2017 period, respectively, and about 50% were released alive. During the 2017-2018 period the catch of these species was 6, 0, and 1, and about 60% of these were released alive. These species are listed on the CMS Appendix 1 and by the Shark CMS MOU, therefore they are identified as MSC ETP species. The stock status of these species is unknown. It is interesting to note that two giant manta were captured, and that takes of these species is sometimes considered an associated or FOB catch.</p> <p>In summary, about 300 sharks were reported captured by the UOA in the period 2015-2016, and about 50% were released alive. Most of these were silky sharks (98%), and this catch relatively small compared to the catch of silky sharks by FAD sets, and by other fisheries. Additionally about 19 large rays were captured and about 60% were released alive. Most of these were smooth tail mobula. In the period 2017-2018, 281 sharks were taken including 1 whale shark, and 8 rays and mantas were taken. Only about 50% of these were released alive.</p> <p>Therefore the fishery meets the SG60 and 80 requirements that the known direct effects of the UoA are highly likely to not hinder recovery of the shark and ray ETP species, because the takes or interactions are reasonably low, despite not knowing the status of most of the species involved, and about 50% are released alive. The fishery does not meet the SG100 requirements as there is not a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species because there is little known about the stock status of these species.</p>	
c	Indirect effects		
	Guided post		<p>Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts.</p> <p>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</p>
	Met?		<p>Marine mammals: Yes Sea turtles: Yes Sharks and rays: Yes</p> <p>Marine mammals: No Sea turtles: No Sharks and rays: No</p>
	Justification	<p>Indirect impacts of the UoC fishery on ETP species potentially include the reduction in the available prey abundance for the ETP species, changes in abundance the predators of the ETP species, changes in the habitat that could affect the ETP species. The assessment team believes that indirect effects of free school purse seine fishing on ETP species are believed to be minimal, if they exist at all. This determination is based on experience. Therefore the indirect effects of the UoA have been considered and are thought highly unlikely to not create unacceptable impacts on ETP species.</p> <p>The SG80 requirements are meet for all elements. The SG100 requirements are not meet as there is not a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</p>	
References	<p>Escalle et al 2016</p> <p>https://iwc.int/estimate,</p> <p>http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T11534A3292503.en</p> <p>http://www.iucnredlist.org/species/3897/119333622#assessment-information</p> <p>http://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T4615A11037468.en</p> <p>http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T6494A43526147.en</p>		

PI 2.3.1	The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring elements for marine mammals (N=4):	<i>Grampus griseus, Balaenoptera edeni, Balaenoptera physalis, Megaptera novaeangliae</i>	60	
Scoring elements for sea turtles (N=5):	<i>Lepidochelys kempii, Lepidochelys olivácea, Caretta caretta, Chelonia mydas, Dermochelys coriacea</i>	80	
Scoring element for sharks and rays (N=9):	<i>Carcharhinus falciformis, Carcharhinus longimanus, Isurus oxyrinchus, Sphyrna zygaena, Sphyrna lewini, Mobula japonica, Mobula mobular, Mobula tarapacana, Manta birostris</i>	80	
Scoring Summary	The assessment team followed MSC FCR v2.0 7.10.7 to score PIs with different scoring elements. Table 4: Combining element scores was used to assign the overall score for this PI; All elements meet SG60; most achieve higher performance, at or exceeding SG80; only a few fail to achieve SG80 and require intervention action.		
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			3

Evaluation Table for PI 2.3.2 – ETP species management strategy

PI 2.3.2	The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none"> meet national and international requirements; ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place (national and international requirements)			
	Guidepost	There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	NA	NA	NA
	Justification	As previously explained in PI2.3.1, Sla, none of the ETP species that appear in table 3.15 and that are captured by the UoA have catch limits applicable to the assessed fishery, therefore Sla for PI2.3.2 does not apply.		
b	Management strategy in place (alternative)			
	Guidepost	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP

<p>PI 2.3.2</p>	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>			
	<p>Met?</p>	<p>Marine mammals: Yes Sea turtles: Yes Sharks and rays: Yes</p>	<p>Marine mammals: No Sea turtles: Yes Sharks and rays: Yes</p>	<p>species</p> <p>Marine mammals: No Sea turtles: No Sharks and rays: No</p>
	<p>Justification</p>	<p>ICCAT has adopted a number of measures that are in place to ensure that the UoA does not hinder the recovery of ETP species. Together these measures form a strategy that is in place again to ensure that the UoA does not hinder the recovery of ETP species.</p> <p>The management by ICCAT of ETP species that interact with the UoA includes the following measures: The obligation to register (both in observer programs and in logbooks) and to report by-catches and discards according to Recommendation [11-10]. The different measures established in Recommendations [09-07], [10-07], [10-08], [11-08] for the conservation and management of protected sharks The more recent recommendation [17-08] that addresses the North Atlantic stock of shortfin mako shark, required vessels to release captured shortfin mako, unless dead, and then only unless certain reporting requirements were met. These Recommendations prohibit retaining these species on board, returning live the species whenever possible, and report all interactions indicating the state -live / dead-. Recommendation [10-09], subsequently amended by Rec [13-11], establishes a set of measures to mitigate and evaluate the impact of fisheries in the Convention area on marine turtles.</p> <p>Recommendations include the obligation to report in detail the interactions as well as establishing good practices of on board handling for the release of individuals. The Ecosystem Sub-Committee integrates all the research and monitoring activities required by the SCRS in its advisory work to the Commission, including the following tasks related to bycatches of protected species:</p> <ul style="list-style-type: none"> (i) monitor and improve information on interactions with species that are not objective of the fisheries of ICCAT, and especially those for which there are no specific working groups (turtles, birds ...); (ii) characterize the volume, composition and disposition of incidentally caught species; (iii) investigate the impact of changes in fishing gear to reduce bycatch; (iv) investigate, through models, potential benefits (at the ecosystem level) of alternative management strategies such as, for example, spatio-temporal closures. <p>In the case of the UoA/UoC, the existence of a 100% on-board observer coverage makes it possible to quantitatively determine the interactions and their result, complying with the recommendations regarding data recording.</p> <p>The UoA/UoC is part of the industry association, OPAGAC, and it uses the AZTI prepared handbook of good practices for the release sharks, rays, sea turtles, and whale sharks, etc., This handbook also addresses non-entangling FADS. While this handbook is useful, it can only be considered a measure, which may be part of an overall strategy. It is certainly not a comprehensive strategy in and of itself.</p> <p>As described in PI2.3.1, Sib, the interactions with ETP species by the UoA are reasonably low for sea turtle and shark and ray ETP species, so by definition the UoA will not hinder the recovery of ETP species. Therefore, the assessment team believes that for sea turtles and sharks/rays that there is a strategy (a group of measures working together and subject to evaluation) in place that is expected to ensure the UoA does not hinder the recovery of</p>		

<p>PI 2.3.2</p>	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	<p>these ETP species. However with regard to marine mammals, the UoA as evidenced by the 22 interactions with large whales in the 2014-2017 observer data, does have an interaction problem that in total could hinder the recovery of large whales, in particular, and these interactions are the result of whale sets that are intentional. So, while there are some measures in place, that could be construed as a strategy for sea turtles and sharks and rays, with regard to marine mammals, there is no strategy, because if there was, whale sets would be prohibited.</p> <p>Therefore, the assessment team believes that the fishery meets the SG 60 and 80 requirements for sea turtles and sharks and rays, but only the SG60 for whales. None of the fishery elements reach the SG100 level requirements, as there is no comprehensive strategy to address UoC impacts on ETP species.</p>		
<p>c</p>	<p>Management strategy evaluation</p>		
<p>Guidepost</p>	<p>The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).</p>	<p>There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.</p>	<p>The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.</p>
<p>Met?</p>	<p>Marine mammals: Yes) Sea turtles: Yes Sharks and rays: Yes</p>	<p>Marine mammals: No Sea turtles: Yes Sharks and rays: Yes</p>	<p>Marine mammals: No Sea turtles: No Sharks and rays: No</p>
<p>Justification</p>	<p>With the exception of whale sets and large whale captures, the data collected by observers on board the fleet evaluated across 55 trips between 2014 and 2016, and 21 trips in 2017, and 8 trips in 2018 demonstrate the relatively low interaction rate of the UoA with ETP species. Therefore, it can be considered that the type of fishing evaluated (FSC sets) is in itself a measure that allows reducing the discards of ETP species, and compared to both FAD sets in the purse seine fishery, and other fisheries. In addition, to the low interaction / capture rate, most of the larger captured ETP species are released alive, with the exception of the smaller sharks, and about 50% of those are released alive.</p> <p>OPAGAC / AGAC and ANABAC-OPTUC have developed a Code of Conduct for Good Practices for a responsible tuna purse-seine fishery that includes, in addition to the commitment to embark observers in 100% of the sets, explicit guidelines for the release manoeuvres of the different associated species, as well as the training of skippers, crew and observers. Measures related to the construction of FADs and their management are also included, but this is outside the scope of the current UoA and therefore is not evaluated in this assessment. The Code of Conduct has been provided by the client to the audit team, which has been able to verify how the guidelines for the release of the different groups of incidentally caught species (sharks, turtles, whales, rays and rays) are very detailed and aligned with the main international guidelines in this regard (e.g.: FAO). This code of conduct also specifies that its correct implementation will be verified by a third party (a scientific body) and by a Review Commission. Based on this evidence, the assessment team believes that there are measures in place are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species) for all elements of the ETP catch of the fishery: marine mammals, sea</p>		

<p>PI 2.3.2</p>	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	<p>turtles and sharks and rays. Therefore the all ETP elements of the fishery meets the SG60 requirements.</p> <p>With regard to the SG80 requirements, that there is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved, in the case of sea turtles and sharks and rays, there is information (catch data) that demonstrates that these measures are working. With regard to marine mammals, as noted previously, the capture of 24 marine mammals, including 22 large whales, some of which are endangered, that could have been avoided, point out the lack of a strategy to reduce impacts of ETP marine mammals. Therefore, the sea turtle and sharks and rays elements of ETP catch meet the SG80 level requirements, but not the marine mammals.</p> <p>The SG100 levels requirements are the strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work. So, while there is a strategy in place for some ETP species by the UoC, there is no quantitative analysis supports high confidence that the strategy will work, so the UoC does not meet the SG100 level requirements.</p>		
<p>d</p>	<p>Management strategy implementation</p>		
<p>Guided post</p>		<p>There is some evidence that the measures/strategy is being implemented successfully.</p>	<p>There is clear evidence that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).</p>
<p>Met?</p>		<p>Marine mammals: No Sea turtles: Yes Sharks and rays: Yes</p>	<p>Marine mammals: No Sea turtles: No Sharks and rays: No</p>
<p>Justification</p>	<p>There is some evidence that the measures/strategy is being implemented successfully. As noted in PI2.1.2 Sla, in 2012 the client signed a code of good practices on board which is based on a comprehensive manual developed by OPAGAC/AGAC and ANABAC-OPTUC with the assistance of AZTI. The code was adopted by all the OPAGAC and ANABAC fleets and initially AZTI was in charge of developing and implementing a system of verification of the code. Since the development and implementation of a specific standard for a sustainable tropical tuna purse seine fishery, the UNE1956006:2016, this code of conduct was embedded as one of the sections of this standard. AZTI is now the institution in charge of assessing compliance with the implementation of this code. Additionally, a steering committee tracks its implementation. The manual on good practices provides detailed information on how to proceed to release sharks and rays, and includes specific forms for the observers to record these operations. AZTI details that vessels are in conformity with: non-entangling FADS, good handling practices on board to release alive non-target species, record all activities performed to release spp, and training of the crew. The assessment team has reviewed the declarations of conformity for both assessed vessels for 2016 and 2017. Additionally, there is 100% observer coverage of the UoA. These data from that observer coverage were not fully available to the team at the time of the assessment in a form that would allow through review, but sufficient data was available to complete the scoring, but did result in lower scores, and this provides room for improvement. As noted</p>		

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	<p>in SIs b and c of this PI, there is evidence that some measures and a strategy for some ETP catch elements that have been clearly implemented successfully across two of the three ETP catch elements of the fishery. Therefore the SG80 requirements are met for two of the three elements. However, There is not clear evidence that the strategy / comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b), therefore the SG100 level requirements are not met.</p>		
e	Review of alternative measures to minimize mortality of ETP species		
Guidepost	There is a review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of ETP species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
Met?	Marine mammals: Yes Sea turtles: Yes Sharks and rays: Yes	Marine mammals: Yes Sea turtles: Yes Sharks and rays: Yes	Marine mammals: No Sea turtles: No Sharks and rays: No
Justification	<p>As previously mentioned, among the tasks of the ecosystem subcommittee is to review whether alternative measures to minimize the mortality of ETPs could be feasible and effective. This sub-committee meets annually to review the estimated mortalities of incidental catches and to avoid the mitigation measures used when there is sufficient data. For example, in 2013, the review focused on methods to mitigate the capture of turtles as well as the release protocols used, and recommendations were made that served to amend the Rec [10-09]. In 2015, turtle mortality estimates were collected and the estimation methods were evaluated.</p> <p>Therefore there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate. All elements of the ETP catch of the UoA meets the SG60 and 80 requirements. None of the elements meet the SG100 level requirements, which is there is not a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.</p>		
References	ICCAT 2018c		
Scoring elements for marine mammals (N=5): <i>Grampus griseus</i> , <i>Balaenoptera edeni</i> , <i>Balaenoptera physalis</i> , <i>Megaptera novaeangliae</i>			60
Scoring elements for sea turtles (N=5): <i>Lepidochelys kempii</i> , <i>Lepidochelys olivacea</i> , <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Dermochelys coriacea</i>			80
Scoring element for sharks and rays (N=9): <i>Carcharhinus falciformis</i> , <i>Carcharhinus longimanus</i> , <i>Isurus oxyrinchus</i> , <i>Sphyrna zygaena</i> , <i>Sphyrna lewini</i> , <i>Mobula japonica</i> , <i>Mobula mobular</i> , <i>Mobula tarapacana</i> , <i>Manta birostris</i>			80
OVERALL PERFORMANCE INDICATOR SCORE:			75
Scoring Summary	The assessment team followed MSC FCR v2.0 7.10.7 to score PIs with different scoring elements. Table 4: Combining element scores was used to assign the overall score for this		

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>	
	PI; All elements meet SG60; most achieve higher performance, at or exceeding SG80; only a few fail to achieve SG80 and require intervention action	
CONDITION NUMBER (if relevant):		4

Evaluation Table for PI 2.3.3 – ETP species information

PI 2.3.3	<p>Relevant information is collected to support the management of UoA impacts on ETP species, including:</p> <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information adequacy for assessment of impacts			
	Guided post	<p>Qualitative information is adequate to estimate the UoA related mortality on ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA:</p> <p>Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.</p>	<p>Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA:</p> <p>Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.</p>	<p>Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.</p>
	Met?	Yes for all elements	Yes all elements	No for all elements
	Justification	<p>Recommendations for the conservation of protected sharks (Recs [09-07], [10-07], [10-08], and [11-08]) and marine turtles (Recs [10-09] and [13-11]) urge CPCs to record and report very detailed information about interactions with these species. Likewise, Recommendation [11-10] encourages the recording and reporting (both in observer programs and in logbooks) of by-catches and discards.</p> <p>As already explained in PI 2.3.2, the Subcommittee on Ecosystems integrates the results of all the research and follow-up activities required by the SCRS in its advisory work to the Commission. In the case of the UoA, the existence of 100% observer coverage on board allows the interactions to be determined quantitatively and their result (retained / discarded alive / discarded dead).</p> <p>The ETP observer catch data used in this assessment as described PI2.3.1, Slb included both qualitative and some quantitative information, and the assessment team considers</p>		

PI 2.3.3	<p>Relevant information is collected to support the management of UoA impacts on ETP species, including:</p> <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 		
	<p>that it was adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. Therefore all elements of the ETP catch of the UoA fishery meet the SG60 and 80 requirements.</p> <p>The existing quantitative information allows the assessment team to evaluate the mortality and the impact caused by the UoA and to determine if it is a danger for the protection and recovery of the ETP species with which it interacts. However, the limited knowledge of the state of the populations of these species makes it impossible to know with a high degree of certainty the consequences that this may have for the status of these species. Therefore the SG100 requirements are not met.</p>		
b	Information adequacy for management strategy		
Guided post	Information is adequate to support measures to manage the impacts on ETP species.	Information is adequate to measure trends and support a strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
Met?	Yes for all elements	Marine mammals: No Sea turtles: Yes Sharks and rays: No	No all elements
Justification	<p>The number measures are in place in for the Sant Yago fishery to manage impacts of all ETP species, and these are described in justification of PI 2.3.2, 51b. The ETP catch information from the observer program is adequate to support measures to manage the impacts of the UoA on ETP species. Therefore the fishery meets the SG60 level requirements.</p> <p>As noted in the justifications for PI 2.3.2, the various measures in place for the sea turtle and shark and ray catch have results in a relatively low bycatch of these ETP species, thereby suggesting that there is a strategy in place for these species, and there is adequate information of the catch of ETP species from the observer program to measure trends and support a strategy to manage impacts of the UoA on ETP species. However, as noted previously in the justification for PI2.3.2 with regard to marine mammals, there is not a strategy for the UoA (FSC fishery), and this resulted in the interactions with 22 marine mammals in the 2014-2016 period. And notable this was followed by no reported interactions in the 2017-2018 period. Interestingly in the most recent observer data (2017-2018) there is the report of a whale shark being taken, and as noted previously, sets on whale sharks are supposed to be included in FOB sets, and therefore not be included in this UoA/UoC. This confusion and possible contradictions in the available data indicates to the assessment team that the information is adequate to measure trends and support a strategy to manage impacts on ETP species. Therefore all ETP catch elements of the fishery do not meet the SG80 requirements, only the sea turtles meet the SG80 requirements, while the marine mammals and sharks and rays do not.</p> <p>Additionally, the information is not adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. Therefore all ETP catch</p>		

PI 2.3.3	Relevant information is collected to support the management of UoA impacts on ETP species, including: <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 		
	elements of the fishery do not meet the SG100 level requirements.		
References	ICCAT 2018 c		
Scoring elements for marine mammals (N=5):	<i>Grampus griseus, Balaenoptera edeni, Balaenoptera physalis, Megaptera novaeangliae</i>		60
Scoring elements for sea turtles (N=5):	<i>Lepidochelys kempii, Lepidochelys olivácea, Caretta caretta, Chelonia mydas, Dermochelys coriacea</i>		80
Scoring element for sharks and rays (N=9):	<i>Carcharhinus falciformis, Carcharhinus longimanus, Isurus oxyrinchus, Sphyrna zygaena, Sphyrna lewini, Mobula japonica, Mobula mobular, Mobula tarapacana, Manta birostris</i>		60
Scoring Summary	The assessment team followed MSC FCR v2.0 7.10.7 to score PIs with different scoring elements. Table 4: Combining element scores was used to assign the overall score for this PI; All elements meet SG60; a few achieve higher performance, at or exceeding SG80, but most do not meet SG80.		
OVERALL PERFORMANCE INDICATOR SCORE:			65
CONDITION NUMBER (if relevant):			3

Evaluation Table for PI 2.4.1 – Habitats outcome

PI 2.4.1	The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Commonly encountered habitat status			
	Guidepost	The UoA is unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	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.	There is evidence 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.
	Met?	Y	Y	N
	Justification	Purse seine fishing gear used by the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery operates in the surface or epipelagic portion in deep oceanic waters in the water column in the east central and southeast Atlantic (FAO areas 34 and 47). This is the commonly encountered habitat for this fishery. The gear is suspended from floats with netting below the surface. The fishery is carried out entirely in the epipelagic ecosystem, at all times above 120m depth. While the net has a depth of 260m, due to the way of operating with the purse line (a drawstring) to close the bottom of the seine, it never operates more than 120m deep. The fishery is conducted always in waters considerably deeper (up to several thousand meters). Therefore, purse seines never come into contact with the seabed or affect vulnerable marine habitats. There is evidence that forage density, surface water temperature and currents play a key role in the distribution and movement patterns of tropical tunas (Bertignac et al., 1998,		

PI 2.4.1	The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.		
	<p>Lehodey et al., 1998). Therefore, it is very unlikely that the fishery will reduce the structure and function of the habitat to a point where there is serious or irreversible damage.</p> <p>This gear is highly unlikely to interact with the benthic habitat. There is no lost gear, and this was confirmed by the fleet manager and vessel captains on the site visit.</p> <p>Purse seine gear displaces biota from the space occupied by the gear, and it probably interferes with the movement of some organisms in the vicinity of the gear. However, these effects on pelagic habitat are likely temporary and there is no evidence of adverse impacts on the structure or functioning of either benthic or pelagic habitat.</p> <p>The UoA/UoC is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. SG80 is met.</p> <p>Evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm would be:</p> <ol style="list-style-type: none"> 1. Surveys of habitat before and after the fishery occurs that show no change in habitat structure. 2. Studies of habitat function (e.g., shelter for juvenile fish, vertical mixing that recycles nutrients) that shows no changes before and after the fishing occurs. 3. Studies that demonstrate that changes in function, such as loss of shelter for juvenile fish, do not results in harm, such as an increase in juvenile fish mortality. 4. Long term studies that show that changes in structure and function moderate and disappear over time when fishing does not occur. <p>Based on experience and logic of the assessment team, it is considered that it is highly unlikely that the fishery reduces habitat structure and function to a point where there would be serious or irreversible harm, but it is not aware of evidences as described in 1-4. Such studies are unlikely to be a priority for funding since the likelihood of serious or irreversible harm is so low and there is no evidence 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. SG100 is not met.</p>		
b	VME habitat status		
Guidepost	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
Met?	NR	NR	NR
Justification	The Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery operates in the surface portion of the deep oceanic waters in the east-central and south-east Atlantic Ocean. The gear does not come in contact with benthic habitat and it only interacts with the water column. There is no lost fishing gear. The open waters pelagic habitat is not included in the definitions of the paragraph 42, subparagraph (i)-(v) of the FAO guidelines on Vulnerable Marine Ecosystems (VMEs), as described in MSC FCR GSA3.13.3.2. Therefore, this SI is considered not relevant (NR).		
c	Minor habitat status		
Guidepost			There is evidence that the UoA is highly unlikely to reduce structure and

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.		
				function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			N
	Justification	<p>There are no identified minor habitats, as the entire fishing area are described in the justification of PI2.4.1, Sla is considered main, commonly encountered habitat.</p> <p>However, studies to gain knowledge about the impact of the fishery on the fishery on the bottom habitats' structure and function (see justification for PI2.4.1, Sla) are unlikely to be a priority for funding since the likelihood of serious or irreversible harm is so low and there is no evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered or VME habitats to a point where there would be serious or irreversible harm. SG100 is not met.</p>		
References		Bertignac et al (1998), Lehodey et al (1998)		
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guidepost	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Y	Y	N
	Justification	<p>The purse seine fishing gear used in the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery operates at the surface of deep oceanic water. The very functioning of tuna purse-seine fisheries, which use gear without reinforcements designed to catch tuna in the open ocean (usually in the surface layer of very deep water), guarantees that there will never be interactions with the seabed. The price of a tuna purse seine network can reach € 800,000, so the costs associated with damage to the craft would make the momentary contact with the seabed prohibitive. Therefore, the fishing operation itself and the gear used is a partial strategy that is expected to result in the fishery effectively not reducing the structure or functionality of the seabed habitats. There are no cases recorded by the observers or in the logbooks of damage to the fishing gear due to interactions with the seabed.</p> <p>Considering that this fishery is unlikely to impact benthic habitats, the term 'if necessary' applies here and management measures should not be required (MSC FCR Table SA8, states "the term "if necessary" is used in the management strategy PIs at SG60and SG80 for the primary species, secondary species, habitats and ecosystems components. This is to exclude the assessment of UoAs that do not impact the relevant component at these SG levels')</p>		

PI 2.4.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
	<p>The SG 60 and SG80 requirements are met.</p> <p>Table GSA8 from MSC FCR v2.0 states <i>“The use of the gear, the understanding that comes from years of peer-reviewed research about its impacts, and the specific management strategy that mandates only its use could be construed as a cohesive and strategic arrangement. This is supported by demonstrable understanding about how the use of pelagic longlines work to avoid impacting benthic habitats specifically, and some understanding about the impacts of lost gear on habitat and the relative effects of such impacts are deemed to be low risk for overall habitat health. Periodic assessments (i.e., directed research and risk assessments) are undertaken to inform management decision makers about lost-gear impacts to ensure that management strategies are working and are demonstrably avoiding serious or irreversible harm to “main” habitats and to determine whether changes need to be made to mitigate unacceptable impacts”.</i></p> <p>Although there is no strategy in place that specifically aims to manage the impacts of the fishery on habitat types, based on the comments above the SG100 is not met.</p>		
b	Management strategy evaluation		
Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.
Met?	Y	Y	N
Justification	<p>The fishery takes place in deep oceanic waters as confirmed by logbook, and VMS data for the fleet. The observer reports also confirm that this fishery does not interact directly with any benthic habitats. As stated in Sla for this PI, management measures as described under SGs 60 and 80 are not required, therefore the SG requirements are met.</p> <p>In the absence of a full strategy which has been tested, testing has not occurred, because of the likely minimal impacts of the gear on habitats. SG100 is not met</p>		
c	Management strategy implementation		
Guidepost		There is some quantitative evidence that the measures/partial strategy is being implemented successfully.	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
Met?		Y	N
Justification	<p>The fishery takes place in deep oceanic waters as confirmed by logbook, and VMS data for the fleet. The observer reports also confirm that this fishery does not interact directly with any benthic habitats. As stated in Sla of this PI, management measures as described under SG 80 are not required and therefore SG requirements are met.</p> <p>In the absence of a strategy SG100 is not met.</p>		
d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs		
Guidepost	There is qualitative evidence that the UoA complies with its	There is some quantitative evidence that the UoA complies with both its	There is clear quantitative evidence that the UoA complies with both its

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
		management requirements to protect VMEs.	management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	Y	Y	Y
	Justification	<p>The Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery operates at the surface in deep oceanic water in national and international waters of the North Atlantic ocean. Considering that the fishery is highly unlikely to impact benthic habitats, and is highly likely to have very low impact in the pelagic habitat, there is clear quantitative evidence that the UoA complies with its management requirements to protect VME. . The fishery takes place in deep oceanic waters as confirmed by logbook and VMS data for the fleet. The observer reports also confirm that this fishery does not interact directly with any benthic habitats.</p> <p>In version 2.0, for PI2.4.2 SId it is obliged to present evidence that Vulnerable Habitats are being protected by all UoAs from other fisheries certified or in evaluation that overlap with the assessed fishery. At this time there are no other fisheries that meet these characteristics, therefore it is not necessary to evaluate these cumulative impacts.</p> <p>SG60, SG80 and SG100 requirements are met.</p>		
References		-		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guidepost	<p>The types and distribution of the main habitats are broadly understood.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Some quantitative</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
			information is available and is adequate to estimate the types and distribution of the main habitats.	
	Met?	Y	Y	N
	Justification	<p>The Sant Yago unassociated purse seine yellowfin tuna fishery takes place in the epipelagic habitat. There are no habitat types present that are considered vulnerable. The current sea charts and bathymetric maps demonstrate the distribution of the pelagic habitat within the spatial range in which the fishery operates. Outside this epipelagic habitat, many areas of the Atlantic Ocean have been mapped and there is information related to the occurrence of sensitive and / or vulnerable habitats in the seabed. However, the seabed habitat is outside the spatial range of the fishery and therefore is not relevant here. There are no sensitive habitats in the pelagic ecosystem that can be damaged or impacted by the use of purse seines.</p> <p>The marine habitats in the east-central and southeast Atlantic ocean are studied by national and international organizations (e.g. IEO, CSIC, etc.). The distribution of water column types (in terms plankton, primary and secondary productivity, temperature, salinity, nutrients, stratification, currents, gyres and rings, etc.) and the nature of the sea bed is well known in large parts of the Atlantic Ocean. This information was gathered in scientific and fishing campaigns several years ago. Therefore, the distribution of most habitats is known over the range on the fishery, with particular attention to the occurrence of vulnerable habitats. It is considered that the physical impacts of the purse seine fishery in the pelagic ecosystem are very unlikely. Therefore the SG60 and 80 requirements are met.</p> <p>However, a precautionary approach to fisheries would suggest that the possibility of impacts should be investigated, and specific investigations in this regard could be justified. In the pelagic habitat in which the fishery operates subtle physical (T^a) and chemical (salinity) variations occur over time. Some of these, including temperature, turbidity and salinity are subject to seasonal variations and can be easily controlled and detected by remote sensing (e.g., satellite images). Other changes such as the movement of water (density and ocean currents driven by the wind, tidal currents, etc.) require more direct techniques for measurement. Different studies have studied historical series of physico-chemical parameters to find the relationship between the variations of these parameters and the abundance and recruitment of tropical tunas (Bertignac et al., 1998, Lehodey et al., 1998), including the long-term changes resulting from global warming (Loukos et al., 2003). Therefore, the distribution of all habitats is not known over their range, with particular attention to the occurrence of vulnerable habitats. SG100 is not met.</p>		
b	Information adequacy for assessment of impacts			
	Guidepost	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. OR If CSA is used to score PI 2.4.1 for the UoA:	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. OR If CSA is used to score PI	The physical impacts of the gear on all habitats have been quantified fully.

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.	
	Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
Met?	Y	Y	N
Justification	<p>The nature of the purse seine fishing gear means that seabed is not impacted, while impacts to the surface pelagic habitat are highly likely to be imperceptible and highly transient.</p> <p>The available data are descriptions of the purse seine fishing gear methodology, observers' data, logbooks data, and vessel monitoring system (VMS) data on where fishing occurs. Information on the impact of the fishery on habitat types comes from knowledge of the fishing methodology and logical inference that it does not alter characteristics of water column habitat. Therefore, information is adequate to allow for identification of the main impacts of the UoAs on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. SG60 and 80 are met.</p> <p>Purse seine fishing does not impact habitat. But the physical impact is not fully quantified, and is only inferred by logic and experience. Thus SG100 is not met.</p>		
c	Monitoring		
Guidpost		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.
Met?		Y	Y
Justification	<p>Data on spatial distribution of fishing continues to be collected by the VMS. Tropical tunas are inhabiting the first meters of the water column, and they are very sensitive to changes in certain parameters of this habitat (e.g. Seasurface temperature, primary production, chlorophyll concentration...). Oceanographic data on water column characteristics also continues to be collected by IEO, CSIC and many academic institutions. Observers continue to be present on Sant Yago fishing vessels and they should detect changes in the method of fishing that might increase risk to habitat. SG 80 is met.</p> <p>The Sub-committee on Ecosystems deals with many issues, including the effects of the environment on tuna populations. According to the ICCAT website (https://old.iccat.int/en/SC_ENV.htm) they use the GAO software for processing oceanographic data for fisheries research. They feed this software with: (i) In-situ data collections (Climate Analysis Section, Climate Diagnosis Center, Data reanalysis, Climate Prediction Center, Comprehensive Ocean-Atmosphere Data Set, International Research Institute for Climate Prediction, Joint Environmental Data Analysis Center); (ii) Remote sensing databases (Advanced Very High Resolution Radiometers, AVISO –altimetry, orbitographic and precise location missions, French ERS Processing and Archiving Facility, National Geophysical Data Center, Ocean Color Data from various sensors –CZCS, OCTS, SeaWifs and MODIS-Aqua); and (iii) Model outputs (ECMWF –European Centre for Medium-Range Weather Forecasting-, MERCATOR –Océanographie opérationnelle-).</p> <p>Information on sea surface temperature and chlorophyll concentration is being continuously monitored on board the fishing vessels to take decisions in real time about the fishing activity.</p>		

PI 2.4.3	Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
	Changes over time in habitat distributions are monitored. SG 100 is met.		
References	Bertignac et al (1998), Lehodey et al (1998), Loukoset al (2003)		
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.5.1 – Ecosystem outcome

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Ecosystem status			
	Guided post	The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Y	Y	N
	Justification	<p>The key elements of the central-eastern and south eastern Atlantic ecosystem include abiotic and biotic factors, such as sea surface temperature, stratification, abundance of phytoplankton, zooplankton bio volume, total fish biomass , ratio of pelagic biomass to demersal biomass, size distribution of the fish community , epipelagic trophic networks , abundance of predators and the availability of forage species, the capture or landings of all fisheries, the average trophic level of catches, etc.</p> <p>The evaluated fishery does not impact abiotic elements, while the impacts on various key elements of the ecosystem (retained species, bycatch, threatened and protected species and habitats) have already been considered separately in previous PIs relative to 'impact' ('outcome') of P2 (2.1.1, 2.2.1, 2.3.1, 2.4.1). Other aspects of the potential impacts on the biotic elements of the ecosystem are considered below, especially in relation to the impact that the UoA can cause in the relationships and the balance between them, since the normal function of an ecosystem depends to a large extent on the relative stability that the main biotic elements maintain among themselves.</p> <p>A number of key ecosystem elements might be disrupted by the fishery, including trophic relationships, size composition, biodiversity, and species distribution. The elements considered of primary importance and to be most likely to be threatened by the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery (UoA), fishery is that of trophic structure. A fishery can alter the structure and functioning of ecosystems through trophic interactions by removing forage species upon which higher trophic level species depend or through top down trophic cascades or fishing down the food web. The former mechanism is not applicable to this fishery because the fishery does not catch forage species.</p> <p>There are several scientific studies that support that fishing has caused changes in pelagic fish communities in different oceans. Ward and Myers (2005) estimated that the biomass of large predators decreased by a factor of 10 between the 1950s and the 1990s in the Tropical Pacific, while the biomass of other smaller species increased (to a lesser extent) (like the pelagic line). According to Ward and Myers of the three possible explanations (fishing, environmental variability, and sampling bias) the available evidence pointed to</p>		

<p>PI 2.5.1</p>	<p>The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.</p>
	<p>fishing as the most probable cause. Worm et al. (2005) studied the trends in diversity of tuna species and 'billfishes' in the different oceans in the last 50 years and found a loss of diversity of between 10 and 50% that linked both the fishing and the variability of ecosystems linked to climate change of cascade effects that this causes in ecosystems (top-down effects) (Baum and Worm, 2009, Myers et al 2007). The study by Worm et al (2006) concludes that the loss of marine biodiversity is increasingly damaging the oceans' ability to provide food, maintain water quality and recover from disturbances (decreasing their resilience). On the contrary, they also estimated that when biodiversity is restored through appropriate measures, resilience increases by 21% and productivity is multiplied by four. Therefore, these researchers conclude that the buffering effect of species diversity on the resilience and recovery of ecosystem services generates value that must be incorporated into future economic valuations and management decisions. The study by Worm et al (2006) suggests that the situation is still at a point where the observed trends of a generalized decrease in biodiversity can be reversed.</p> <p>In relation to the UoC, the level of catches of tuna and tuna-like species follows the recommendations of ICCAT, which according to the SCRS council ensures that exploitation of these species is sustainable according to the precautionary principle (ICCAT Res [15-12]) and the ecosystem approach (ICCAT Res [15-11]). The impact of UoA on retained species, bycatch and protected species has already been evaluated in PIs 2.1.1, 2.2.1 and 2.3.1. On the other hand, it is believed that the increasing use of FADs since the early 1990s has caused various changes in the ecosystem, as recognized by the SCRS (ICCAT 2014), namely: They have been able to produce significant changes in the composition of tuna schools not associated with FADs ('free swimming schools'). The association with FADs may also be affecting the biology (food intake, growth rate) and ecology (displacement rate, movement orientation) of bigeye and yellowfin.</p> <p>Andersen and Pedersen (2009) use a size- and trait-based model to explore how marine ecosystems might react to perturbations from different types of fishing pressure. They conclude that cascades are damped further away from the perturbed trophic level. Fishing on several trophic levels leads to a disappearance of the signature of trophic cascades. The ecosystems in which the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery (UoA) occurs are fished at all trophic levels. Furthermore, management of tuna fisheries by ICCAT and of fisheries for most high trophic level predators by the highly migratory species fishery management plan mitigate depletion of top predators, and make it highly unlikely that the underlying ecosystem structure and function will be disrupted to a point of serious or irreversible harm. Furthermore, Pershing et al. 2015 suggests that trophic cascade regime shifts are rare in open ocean ecosystems and that their likelihood increases as the residence time of water in the system increases.</p> <p>The UoA (Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery) is highly unlikely to disrupt trophic structure of the ecosystem to extreme irreversible levels, due to the scale at which the fishery operates relative the scale of species distributions impacted by the fishery. The fishery does not remove a substantial amount of high trophic level species (target, primary, secondary or ETP) relative to the overall abundance of these species, and does not impact lower trophic levels.</p> <p>Therefore, the assessment team concludes that it is highly unlikely that this UoA, the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery disrupts key elements of ecosystem structure and function to the point where there would be serious or irreversible harm. SG60 and 80 requirements are met.</p> <p>The papers by Andersen and Pedersen (2009), Branch et. al. (2010) and Persching (2015) are recent evidence that it is highly unlikely that the disrupts key elements of ecosystem structure and function to the point where there would be serious or irreversible harm. However, they are not direct evidence for the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery.</p> <p>Direct evidence from the fishery could be produced by long term (to account for natural variability) studies of the structure and function of ecosystems with and without the</p>

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
	fishery occurring, the relationship between ecosystem structure and function in order to define a harmful, the response of the ecosystem to a cessation fishing and models that integrate all available ecosystem information. Such evidence would be extremely costly, and it is unlikely to be a research priority since the likelihood of adverse impacts is so low. SG100 is not met.		
References	Andersen and Pedersen (2009), Baumand and Worm (2009), Branch et al (2010), Myers et al (2007), Pershing et al (2015) , Ward and Myers (2005), Worm et al (2005), Worm et al (2006)		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.5.2 – Ecosystem management strategy

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guidepost	There are measures in place, if necessary which take into account the potential impacts of the fishery on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan , in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.
	Met?	Y	Y	N
	Justification	The Sant Yago unassociated purse seine yellowfin tuna fishery (UOC) is managed in accordance with the regulatory framework established by ICCAT for the management of the tropical tuna species (see Pls 1.2.1, 1.2.2, and 2.1.2) as well as the other bycatch (see Pls. 2.1.2 and 2.2.2) and protected species (see PI 2.3.2). All these are key elements of the ecosystem according to the nature and scale of the fishery. This regulatory framework has Recommendations and Resolutions that incorporate management measures, access rules, scientific monitoring measures and follow - up, monitoring and inspection, all of them already described and evaluated in previous Pls. The management objectives of ICCAT are not only to guarantee the sustainability of the species with which the fishery interacts, but in accordance with Resolution [15-11] the formulation of Recommendations must be based on an ecosystem approach and always in agreement to the precautionary principle (Resolution [15-12]) .The formulation of the Multiannual Conservation and Management Program for Tropical Tunas recognizes the multi-specific nature of the tropical tuna purse seine fisheries and the need for joint stock management, as well as adopting practices to reduce discards and bycatches (Rec. [16-01]). One of the measures included in the program (and indeed their existence -and since 1999 precedes the first formulation of one Multiannual Program for yellowfin and bigeye tuna -2011) is the spatio-temporal ban the use of FADs in the Gulf of Guinea, and its objective has been to reduce fishing mortality of juvenile bigeye since its inception. Most recently, ICCAT approved Resolution [16-23] that addresses Ecosystem Based Fisheries Management and in particular the SCRS will examine the available information on the trophic ecology of pelagic ecosystems.		

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
	<p>An important element in advising the Commission on ecosystem management is the work carried out by the Ecosystem Sub-Committee (see Figure 3-8), whose objectives include including the ecosystem approach in the Fisheries managed by the Commission, as well as the oceanographic variables that affect the biology of tunas and their fisheries. The sub-Committee on Ecosystems has acknowledged the effects of the environment on tuna populations, and is working with large scale oceanographic models to better understand the relationships between the environment and tuna abundance and distribution.</p> <p>In the case of the UoA, the existence of a 100% on-board observer coverage makes it possible to quantitatively determine and verify with an external party all the captures and interactions, as well as their result, complying with the Recommendations regarding data recording .</p> <p>With regard to the requirements of the scoring guideposts, a partial strategy is a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically. In this case, the partial strategy is: manage fishing on all main primary species at a level that maintains them, or rebuilds them, to a high level of productivity; managed the fishery to prevent depletion of secondary species and not hinder their recovery if they are depleted, manage the fishery to minimize the risk of extinction of species threatened or endanger of extinction; manage the fishery minimize the impact on marine mammals, sea turtles, sea birds and protected sharks. Essential fish habitat is identified and measures are implemented, if necessary, to protect it from harm from fishing or other activities.</p> <p>Within ICCAT, there is a legal, framework, management plans and regulatory measures in place to protect virtually all aspects of ecosystems. While the partial strategy is not necessarily designed to manage the impact of the fishery on ecosystem structure and function, it should prevent irreversible harm. Based on all the above, the evaluation team considers that the assessed fishery complies with all SG60 and SG80.</p> <p>The key difference between a “partial strategy” and a “strategy” is intent. A partial strategy may not have been designed with avoiding harm to ecosystem structure and function as the objective, whereas this is presumable the objective of a strategy, where there is an understanding of how the measures work to achieve an outcome and which should be designed to manage impact on that component specifically. In this regard, there is no specific strategy for the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery designed with the intention of avoiding harm to ecosystems. SG100 is not met.</p>		
b	Management strategy evaluation		
Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved
Met?	Y	Y	N
Justification	<p>The partial strategy described in the justification of Sla for this PI uses information on primary and ETP species to minimize impacts and takes measures for the conservation of habitats and species, such as fishing ban, area closures, etc. to ensure no serious or irreversible harm to the key elements of ecosystem structure and function. There is some objective basis for confidence that the partial strategy will work. SG 80 is met.</p> <p>Although a partial strategy is in place and there is some basis of confidence, there is still</p>		

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
	some impacts that have never being tested (e.g. the impact of the gear on different types of habitats, as seabed). Thus, testing do not supports high confidence that the partial strategy will work. SG 100 is not met.		
c	Management strategy implementation		
	Guidepost	There is some evidence that the measures/partial strategy is being implemented successfully.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?	Y	N
	Justification	There is some evidence that the partial strategy is being implemented successfully as stock assessments that indicate that several species are at high levels of productivity and/or that management measures are in place so that the fishery does not hinder recovery of stocks that are not. SG80 is met. Because there is no specific strategy relative to this fishery, there is not clear evidence that the strategy is being implemented successfully and is achieving its objective, therefore the SG100 not met.	
References	Andersen and Pedersen (2009), Branch et al (2010), ICCAT 2018 c, Pershing et al (2015)		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.5.3 – Ecosystem information

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.		
Scoring Issue	SG 60	SG 80	SG 100
a	Information quality		
	Guidepost	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.
	Met?	Y	Y
	Justification	The key elements of the east-central and south-east Atlantic ecosystems where the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery (UoA) occurs, are well understood for this ecosystem. Adequate amounts of information of sufficient quality are available to broadly understand the key elements of the ecosystem. Significant quantities of regularly updated data in relation to abiotic ecosystem elements are available from a wide range of sources and entities that monitor and carry out research into environmental (physical and chemical) parameters in the east-central and southeast Atlantic Ocean. Most coastal states in the North and South Atlantic Ocean carry out at least some scientific research and /or monitoring of environmental conditions within the EEZ. A range of organizations that have interests in researching and monitoring global environmental conditions also carries out significant amounts of research in the North and South Atlantic Ocean. Information available covers all main areas of relevance in the context of understanding key abiotic and biological elements of the North and South Atlantic Ocean	

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
		<p>ecosystem. Information on these ecosystems is accessible through the Large Marine Ecosystem of the World Website (http://lme.edc.uri.edu/). The available information of direct relevance to the management of fisheries impacts through the various working groups ICCAT (e.g. Working Group Tuna Tropical, Working Group on Ecosystem) is available.</p> <p>The data coming from the on-board observer program implemented by the UoA allows to determine quantitatively and in detail (100% coverage of all sets) the impacts on other species of tunas, other fish, sharks, turtles and cetaceans that interact with the UoA. However, there is uncertainty regarding possible changes in the trophic structure of ocean ecosystems derived from the removal of large predators</p> <p>The main ecosystem functions of the species affected by the purse seine fishery of the East Atlantic Ocean are known. It is sufficient to identify the range of the species concerned and to determine information their role is as species of low trophic level key species low trophic level (key low trophic level species), dams high trophic level, forage, predators and possible roles in the transfer of energy and nutrients between diverse pelagic habitats (epipelagic, mesopelagic, bathypelagic) or between pelagic and demersal habitats. The main functions of the pelagic habitat are known and the potential impacts of the purse seine fisheries are understood.</p> <p>The main consequences of the ecosystem impacts associated with the purse seine fishery can be inferred from: i) existing information on the removal of target, retained, discarded and protected species ; ii) the information available in relation to the sensitivity or vulnerability of species and habitats to fishing interactions. Information regarding the distribution, abundance and biological / biological characteristics of many species affected by the fishery is known at an adequate level to allow inferring consequences and impacts. While the information available in relation to the biology of some species is significantly higher than for others, the general understanding of the resilience, the status and strength of many of the affected populations allows us to infer the general consequences.</p> <p>Therefore, a wide range of biological and environmental information is collected continuously by different organizations and institutions interested in the East Atlantic, including the CPCs of the zone and Guatemala. As already explained in previous PIs (see PI 1.2.3, 2.1.3, 2.2.3, 2.3.3, and 2.4.3) the information collected includes captures, discards and other interactions of the UoC (specifying its destination: alive, dead), VMS, catch-effort, information from specific scientific programs (e.g.: tuna tagging) . However, there are still deficiencies in the availability of information that allows the development and implementation of strategies for ecosystem management. For example, only recently has systematic information on interactions with ETPs been systematically collected by tropical tuna purse seine fleets. It is necessary to continue gathering information that allows for a more accurate assessment of the impacts and to formulate more effective measures to mitigate them.</p> <p>The SG60 and 80 requirements are met.</p>		
b	Investigation of UoA impacts			
	Guided post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and have been investigated in detail.
	Met?	Y	Y	N
	Justification	The main impacts of the fishery on key elements of the ecosystem are mortality of high level predators with the potential for altering the food web. The food web of the ecosystems in the areas where the fishery occurs is broadly understood and some		

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.	
		ecosystems have been investigated in detail (Sherman et. al., 2013). The SG60 and 80 requirements are met. The main interactions between the fishery and ecosystem elements are alteration of the trophic web by removing high level predators. These interactions can be inferred, but they have not been investigated comprehensively enough. The SG 100 level requirements are not met.	
c	Understanding of component functions		
	Guidepost	The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are understood.
	Met?	Y	N
	Justification	The target species, primary, secondary species function as high level predators. ETP species as pilot whales are also high level predators. ETP sea turtles feed gelatines plankton (e.g., jellyfish). The main functions of the components in the ecosystems are known. SG80 is met. However, the impacts of the fishery are not understood well enough to meet the SG 100 level.	
d	Information relevance		
	Guidepost	Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?	Y	N
	Justification	Information on the landings of catch, at sea discard rates and mortality (fate of discard and ETP species are recorded by observers and in logbooks), stock assessments for key species, trophic relationships and possible consequence outcomes are collected and available. There is 100% observer coverage of this fishery. This information then analysed in ecosystem modelling at assess the impacts of the fishery overall on ecosystem components. Therefore, adequate information is available on the impacts of the UoA on these components to allow thedome of the main consequences of the fishery (UoA) for the ecosystem to be inferred. The SG80 level requirements are met. However there is not sufficient understanding of the ecosystem interactions for all of the consequences on the ecosystem too be able to fully assess impacts of the fishery. The SG 100 level is not met.	
e	Monitoring		
	Guidepost	Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.	
	Met?	Y	N
	Justification	<p>As noted in the justification of PI2.4.3 Slc, the Sub-committee on Ecosystems deals with many issues, including the effects of the environment on tuna populations. According to the ICCAT website (https://old.iccat.int/en/SC_ENV.htm) they use the GAO software for processing oceanographic data for fisheries research. They feed this software with: (i) In-situ data collections (Climate Analysis Section, Climate Diagnosis Center, Data reanalysis , Climate Prediction Center, Comprehensive Ocean-Atmosphere Data Set, International Research Institute for Climate Prediction, Joint Environmental Data Analysis Center); (ii) Remote sensing databases (Advanced Very High Resolution Radiometers, AVISO – altimetry, orbitographic and precise location missions, French ERS Processing and Archiving Facility, National Geophysical Data Center, Ocean Color Data from various sensors –CZCS, OCTS, SeaWifs and MODIS-Aqua); and (iii) Model outputs (ECMWF – European Centre for Medium-Range Weather Forecasting-, MERCATOR –Océanographie opérationnelle-)</p> <p>A wide range of fishery, biological and environmental data continues to be collected on the impact of the fishery on the target species, retained species, bycatch species and ETP species such that change in their status that might increase the risk to the ecosystem should be detected by many different organizations with an interest in the east-central and southeast Atlantic Ocean, including Spain, other EU nations and most other coastal states that are members of ICCAT or which are co-operating non-contracting ICCAT parties. Data are collected in relation to:</p> <ul style="list-style-type: none"> • Catches of all species at ICCAT member level for different gear types and means of fishing • Data in relation to the spatial and temporal operation of the fishery (VMS) • Data in relation to catch by area • Data in relation to fishing effort • Data in relation to the biology of many vulnerable species potentially impacted by the fishery • Data in relation to levels of bycatch (in relation to fleet level operations) from observer programs <p>Data is continually being updated for most of these criteria and is available to indicate potential or actual changes in risk to ecosystem elements and components. The risk to ecosystems is that one or more of these species is depleted such that there is a trophic cascade. Therefore, adequate data continue to be collected to detect any increase in risk level. SG80 level requirement is met</p> <p>There is probably enough information to support development of a strategy, but since none has been developed specifically for the Sant Yago unassociated purse seine Atlantic yellowfin tuna fishery, the SG 100 level is not met.</p>	
References	Sherman et al (2013)		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 3.1.1 – Legal and/or customary framework

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 			
Scoring Issue	SG 60	SG 80	SG 100	
a	Compatibility of laws or standards with effective management			
	<p>Guidepost</p>	<p>There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2</p>	<p>There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.</p>	<p>There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.</p>
	<p>Met?</p>	Y	Y	Y
	<p>Justification</p>	<p>See sections 3.5.1 and 3.5.2 for a description of the regulatory framework applicable to the assessed fishery as well as the institutions and entities involved.</p> <p>UNFSA, in its Article 5 notes that coastal States and States fishing on the high seas shall adopt objectives that are also fully consistent with MSC Principles 1 and 2. Both the UNFSA and other FAO guidelines (e.g. the Code of Conduct for Responsible Fisheries, although being non-binding) require cooperation between States through international institutions where appropriate and, in the case of Atlantic tunas, ICCAT is the Institution playing this role.</p> <p>ICCAT is responsible for coordinating scientific research and formulating recommendations aimed at maintaining tuna stocks at levels consistent with MSY. To this end, the Commission sets minimum allowed weight limits for the capture and retention of tuna, TACs of various species, temporary closures, as well as regulation of gear and regimes of international and port inspection. The management objectives of ICCAT, expressed both in the Basic Texts of the Convention (Article VIII) and in subsequent Recommendations (in particular in Recommendation [11-13]) are consistent with the P1 of MSC, while the Resolution [15-11] determines that ICCAT should apply both the ecosystem approach when formulating Recommendations (so it is consistent with the P2 of MSC).</p> <p>The assessed vessels are flying a Guatemalan flag. The Guatemalan General Law for fisheries and Aquaculture establishes that fishing activities shall be managed to ensure a rational and sustainable exploitation of the marine resources and also the conservation of the marine ecosystems (Article 2), and develop the mechanisms to ensure it. Although Guatemala (as the majority of the Latin American countries) has not signed or ratified the UNFSA (http://www.un.org/depts/los/reference_files/status2010.pdf), it has been a Contracting Party of ICCAT since 2004 and has ratified the UNCLOS (Table 3-22). All the countries where the assessed fleet is operating or landing are ICCAT CPCs and have ratified the UNCLOS, although only a few have ratified the UNFSA (Table 3-22).</p> <p>SG60 and SG80 are met.</p> <p>Basic texts of the Convention are binding procedures for all CPCs. Article VII of the Basic Texts of the Convention note that: “The Commission may, on the basis of scientific evidence, make recommendations designed to maintain the populations of tuna and tuna-like fishes that may be taken in the Convention area at levels which will permit the maximum sustainable catch”. As explained in section 3.5.1, 6 months after being communicated by the Commission ICCAT Recommendations enter into force and are applicable to the CPCs, and therefore they are also binding procedures. Recommendation</p>		

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 		
	<p>11-13 describe the principles of decision making for ICCAT to ensure Article VIII is accomplished. Therefore, within ICCAT there are binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principle 1. However, in relation to the assessed fishery this Recommendation applies both to P1 (yellowfin tuna) and P2 primary species (skipjack, bigeye, swordfish, marlins, sailfish, blue shark...). Therefore, it could be considered as a binding procedure which delivers management outcomes consistent with MSC Principle 2. Further, Rec 15-07 established a work plan to examine ways to further define the management framework building on Rec 11-13, in particular to evaluate precautionary management reference points and robust HCRs through MSE. According to the plan established, the process started with the North Atlantic Albacore, and recent Rec 17-04 has finally determined precautionary biological reference points and HCRs which will guide the decision-making process for this stock. Progress made for other stocks is reported in ICCAT (2017e).</p> <p>However, there are no explicit mentioning about delivering outcomes consistent with P2 in the Basic Text of the Convention. In its respective preamble, Resolution 15-11 reflects the discussions that are taking place within the Convention Amendment Working Group to modify the Basic Text of the Convention so as to incorporate the ecosystem approach in the text, since Resolutions are not binding. Therefore, this Resolution can be understood as an interim until the modification of the Basic Text occurs. In any case, this Resolution is determining principles that ICCAT shall apply when formulating the Recommendations. This situation could raise doubts about whether there are already binding procedures between the CPCs in place that seek to achieve consistent management outcomes consistent with MSC P2. However, the assessment team considers that there is evidence that principles established in Resolution 15-11 have already been applied to fisheries managed by ICCAT. For instance, there are Recommendations on reducing incidental bycatch of seabirds in longline fisheries (Rec 07-07 and 11-09), on the bycatch of sea turtles in ICCAT fisheries (Rec 10-09 amended by Rec 13-11), many recommendations on sharks caught in association with ICCAT fisheries (e.g. Recs 95-02, 04-10, 07-06, 09-07, 10-06, 10-07, 10-08, 11-08, 12-05, 13-10, 14-06, 15-06, 16-12, 16-13, 17-08), and also Recommendations on information collection and harmonization of data on bycatch and discards in ICCAT fisheries (Rec 11-09). Since 2014 the Commission established an <i>ad hoc</i> Working Group on FADs composed of scientists, fishery managers, fishing industry administrators and other stakeholders (Recs 14-03, 15-02, and 16-02). This WG is working towards improving data collection for fisheries carried out in association with FOBs, reducing juvenile catches of bigeye and yellowfin tuna caught in FADs fishing, assessing the effects of the different types of FOBs on managed species and on pelagic ecosystems based on scientific advice and the precautionary approach, and identifying management options and common standards for FAD management (including assessing on the consequences of technological developments of FADs). Finally, ICCAT has also formed a permanent Subcommittee for the monitoring of Ecosystems that depends on the SCRS.</p> <p>Based on all the above, SG100 is met.</p>		
<p>b</p>	<p>Resolution of disputes</p>		
<p>Guidepost</p>	<p>The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.</p>	<p>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is</p>	<p>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven</p>

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 			
		<p>appropriate to the context of the UoA.</p>	<p>to be effective.</p>	
	<p>Met?</p>	<p>Y</p>	<p>Y</p>	<p>N</p>
	<p>Justification</p>	<p>Although ICCAT does not have a formal dispute resolution procedure within the Convention, annual meetings provide the opportunity to resolve disputes between CPCs informally through consultations and conciliation. There is also the possibility that technical disputes are resolved through an expert or a technical panel appointed for the occasion. A new Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers (SWGSM) was created in 2014. The importance of the work of this group was highlighted at the latest Regular Meeting of the Commission in 2017, and the Commission agreed that its work should continue.</p> <p>Ultimately, it is also possible (at least in theory) that unresolved disputes can be settled in the International Court of Justice (ICJ) or in the International Tribunal for the Law of the Sea.</p> <p>Jealsa-Rianxeira Group is member of OPAGAC, which is the institution in charge of negotiating and signing bilateral agreements with 3rd countries where its member's fleets are operating. In this case, OPAGAC has signed the agreements with those West African coastal countries where the assessed vessels are fishing. These agreements were handed to the assessment team by the client and it could be assessed that they all include a reference on how to proceed in the case of unresolved disputes. Some agreements consider that national jurisdiction will be applicable (e.g. Gabón), while others refer to an arbitration process to be agreed among both parties (eg. Ivory Coast), while finally others include all the necessary details about the arbitration process (e.g. Angola).</p> <p>Thus, SG60 is met.</p> <p>This system is considered to be transparent since allows all members to be fully informed of the issues under consideration and also ensures their participation in well-informed discussions in specific fora. Final decisions and the adoption of management recommendations can only be made in the Plenary Session at the Annual Meeting of the Commission, ensuring that everybody is informed of the decisions taken. Although the manner in which agreements are reached may not be fully disclosed, there are independent observers (such as NGOs) attending at the annual meetings, so the process can be witnessed. For instance, proceedings of the latest regular meeting of the Commission held in Marrakesh (Morocco) in November 2017 state that a total of 44 CPCs, 5 Cooperating non-CPCs and 26 observers attended the meeting (5 intergovernmental organizations - FAO, GFCM, CSR, COMHAFAT/ATLAFCO, IATTC-, 2 non-contracting parties –Bening and Cuba-, and 19 observers –including WWF, Pew, The Shark Trust, ISSF, IPNLF among others-).</p> <p>ICCAT is able to exercise sanctions, as evidenced by the sanctions imposed on Saint Vincent and the Grenadines and there is no evidence that other Parties circumvent the law (Powers and Medley 2016), with the notable exception of certain fishing companies and fishing vessels, which are included in the IUU fishing list.</p> <p>SG80 is met.</p> <p>Although unresolved disputes can be settled in the ICJ or in the International Tribunal for the Law of the Sea, this has never happened among ICCAT members. Further, the effectiveness of this option would be compromised if it were developed under the jurisdiction of a country that has not ratified the UNFSA, since it is within the framework of this Agreement that such provision is established. This is the case of Guatemala, flag country of the assessed vessels.</p>		

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 		
	<p>ICCAT also has a process established for the submission and resolution of objections by the CPCs to the adopted Recommendations. This process is detailed in Article 8.3 (a-g) -5 and allows CPCs not to adopt a Recommendation with which they do not agree. This mechanism, coupled with the fact that there is a lack of an effective arbitration procedure, has led to the use of objections to avoid fully implementing certain recommendations (Powers and Medley 2016). In the context of an international system, controversy cannot nullify the sovereign rights of a nation, but a better dispute settlement mechanism should be adopted through formal arbitration and conciliation procedures to eliminate the possibility of blockages through objections (Powers and Medley 2016).</p> <p>SG100 is not met</p>		
c	Respect for rights		
Guidepost	<p>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>
Met?	Y	Y	N
Justification	<p>ICCAT only deals with granting fishing rights to CPCs, while the way in which these rights are distributed internally within each State depends on national legislation. Guatemala's General Fisheries and Aquaculture Law states that: "<i>National flag vessels used by commercial tuna fishing license holders are subject to the quota allocations recognized to Guatemala by the IATTC or by any other RFMO that in the future will be created or of which Guatemala will become part. Allocated quotas are property of the State of Guatemala and will be handled in accordance with what is resolved in each RFMO of which Guatemala is a party</i>". The Law also adds that the State will distribute the corresponding quota to interested companies in the form of fishing licenses valid for 10 years and that the holders of those licenses must pay a monthly rate proportional to the net registered tonnage of the vessel/s. Current fishing licenses issued by DIPESCCA to the assessed vessels were checked by the assessed team.</p> <p>ICCAT Resolution 15-13 notes the criteria used for the allocation of fishing opportunities. In addition to taking into account the historical catches and interests of the CPCs, as well as criteria regarding the state of the stocks and on the level of compliance, data submission and also scientific research accomplished the CPCs, ICCAT also takes into consideration the following criteria:</p> <ul style="list-style-type: none"> ▪ The interests of artisanal, subsistence and small-scale coastal fishers ▪ The needs of the coastal fishing communities which are dependent mainly on fishing for the stocks. ▪ The needs of the coastal States of the region whose economies are overwhelmingly dependent on the exploitation of living marine resources, including those regulated by ICCAT. ▪ The socio-economic contribution of the fisheries for stocks regulated by ICCAT to 		

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework.
	<p>the developing States, especially small island developing States and developing territories from the region.</p> <ul style="list-style-type: none"> ▪ The respective dependence on the stock(s) of the coastal States, and of the other States that fish species regulated by ICCAT ▪ The economic and/or social importance of the fishery for qualifying participants whose fishing vessels have habitually participated in the fishery in the Convention area ▪ The contribution of the fisheries for the stocks regulated by ICCAT to the national food security/needs, domestic consumption, income resulting from exports, and employment of qualifying participants ▪ The contribution of the fisheries of the stocks regulated by ICCAT to the national food security / needs, domestic consumption, income from exports and employment of the candidates for qualification ▪ The right of qualified participants to engage in fishing on the high seas for the stocks to be allocated <p>Finally, Resolution 15-13 also establishes the conditions / mechanisms for applying previously established criteria.</p> <p>In the case of the yellowfin tuna, ICCAT does not allocate quotas or establishes any catch limits to the different CPCs (Rec 16-01). ICCAT management is based in establishing a scientific-based TAC which aims to ensure the sustainability of the stock. Therefore, when the West African Countries are granting access to foreign vessels by means of a bilateral agreements, it does not mean that they are doing so at the expense of the access rights of local fishermen. Further, unlike in joint ventures, catches from foreign vessels operating under fishing agreements (as is the case of the assessed fleet) are counted against the flag State, in this case Guatemala.</p> <p>However, this in the case of the bigeye tuna since catch limits have been established by ICCAT (Rec 16-01) for the main fishing CPCs (the only African country included in the list is Ghana), while ICCAT encourages all the remaining CPCs to limit their catches to 1,575t.</p> <p>In application of the criteria established in Resolution 15-13, Rec 16-01 determines that developing coastal countries are not subject to the 1,575t catch limit. For these countries catch limits will only be considered necessary when catch exceeds 3,500t in any given year. This means that the fishery-specific management system allows a greater margin of catches to coastal developing countries, thus observing the legal rights established by the custom of communities dependent on fishing. Rec 16-01 (as any ICCAT Rec) is binding for all CPCs.</p> <p>Thus, SG60 and SG80 are met.</p> <p>Rec 16-01 also states that, in those cases where catch of bigeye tuna of any developing coastal CPC exceeds 3,500t in any given year: <i>“the relevant CPC shall endeavor to adjust its fishing effort so as to be commensurate with their available fishing possibilities”</i>. Is in these cases, and for CPCs having a joint venture fleet targeting tropical tunas (or, for instance, a national large industrial fleet), when there is a need of mechanisms that formally commit to respect the legal rights established by custom of communities dependent on fishing. This mechanism is not detailed in Rec 16-01 (as seen above) and it would be for the CPCs to establish it. The assessment team has not investigated this issue at the level of every West African coastal country, and it is unlikely it is actually met.</p> <p>Mechanisms established at the Resolution 15-13 are only suggestions to the CPCs since, while the Basic Text and the Recommendations are effectively binding procedures for all</p>

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
	<p>CPCs, the Resolutions are only guidelines. Thus, criteria established by ICCAT on this issue are less binding than in other RFMOs (WCPFO) and it is not known exactly how conflicting interests between these criteria can be resolved (Powers and Medley 2016). Although ICCAT has demonstrated the intention to develop and implement criteria that allow an equitable distribution and mechanisms to achieve this objective, such mechanisms are not formal commitments (Powers and Medley 2016).</p> <p>SG100 is not met</p>	
References	<p>ICCAT Basic Texts, ICCAT (2017e), ICCAT (2018c), LGPA Guatemala, Powers and Medley (2016), UNFSA Text</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
Scoring Issue	SG 60	SG 80	SG 100	
a	Roles and responsibilities			
	Guidepost	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	Y	Y	N
Justification	<p>The Organizations and individuals involved in the management process have been identified and their functions roles and responsibilities are described in section 3.5.2.</p> <p>SG60 is met.</p> <p>The Commission carries out the objectives set forth by ICCAT with the assistance of the Secretariat. The Commission is composed of Contracting Party Delegations, and its structure covers all areas of responsibility and interaction as seen in Figure 3-27.</p> <p>Therefore, the functions, roles and responsibilities of the CPCs, as well as the collaborating non-contracting parties, are defined explicitly for all areas of responsibility and interaction, and it is the responsibility of ICCAT Secretariat that the CPCs understand their roles. Although the ability to perform its functions varies greatly among CPCs, it can be</p>			

<p>PI 3.1.2</p>	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
	<p>considered that the objectives are achieved in all areas (e.g. data reporting, the implementation of research programs, performing stock assessments and the scientific advice, MCS system). ICCAT prepares biannual reports (the latest being ICCAT, 2017⁵) published in four volumes which include the proceedings of the Commission Meetings, the reports of the associated meeting including the SCRS, the reports prepared by the Secretariat (on several issues, such as Coordination of research, financial issues, Compliance...) and also the annual reports prepared by the CPCs detailing the actions taken. These reports show that CPCs are well aware of their functions, roles and responsibilities and in general terms compliance is high (including data reporting and the economic contribution for the different activities). In particular, Guatemala fulfills its obligations to ICCAT. Guatemala presents to ICCAT an annual report of the activities implemented and effort made to improve compliance with data submission deadlines. This report is included in the Volume 3 of the biennial reports.</p> <p>At a fishery-specific level, DIPESCA is responsible for receiving, compiling, analyzing and reporting on an annual basis to the ICCAT Secretariat catch data from the assessed fleet. The logbook and the landing declaration are sent by the client to DIPESCA at the end of each fishing trip, so they can cross check them before issuing the catches certificate (this document is compulsory for importing the product into the European Union). VMS data are reported automatically. Further they also receive an annual report from the Jealsa-Rianxeira Group accounting for all final figures of processed and wet weight per species. Based on all these documents DIPESCA prepares an annual report of tuna catches from Guatemala to ICCAT. There are no other vessels flying the Guatemalan flag and targeting yellowfin tuna in the East Region of the Atlantic. They also perform an annual on-site audit of the assessed vessel in Abidjan.</p> <p>OPAGAC (on behalf of its members, including Jealsa-Rianxeira Group) has signed agreements with the West African coastal countries where the assessed vessel are fishing. These agreements were handed to the assessment team by the client and it could be assessed that functions, roles and responsibilities are explicitly defined for key areas of responsibility and interaction. A table summarizing the main obligations in relation to data reporting are summarized in Table 3-23.</p> <p>SG80 is met.</p> <p>However, the assessment team could also check that the level of detail for certain topics (e.g. catches and / or VMS reporting, observers, resolution of disputes...) varies greatly among the different agreements signed.</p> <p>As part of the agreement signed between OPAGAC and the IEO, this scientific institution was in charge of running the observer program, including report all info collected to the ICCAT Secretariat. This was in place until 2017. Since then the client is hiring a private firm (Sea Eye), which is in charge of deployment of the observers, gather and review data collected on board, and then send it to AZTI for them to do verify the implementation of the code of good practices on board (for more details on the AZTI's role see section 3.5.2). However, at the moment of preparing this report it is still not who which institution will responsible for sending now the observer data to ICCAT. A recommendation was issued in this regard (see section 6.4).</p> <p>SG1002.2.2 is not met</p>			
<p>b</p>	<p>Consultation processes</p>			
	<p>Guidep</p>	<p>The management system</p>	<p>The management system</p>	<p>The management system</p>

⁵ Biennial reports del 2016

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>		
ost	includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.	
Met?	Y	Y	N	
Justification	<p>ICCAT makes an important effort in gathering information from all the CPCs. This information is analyzed in intersessional meetings of Working Groups and Panels and it is used to develop management recommendations. In the case of international management environments, such as ICCAT fisheries, ‘local knowledge’ can be interpreted as the information, research and management experience from the different CPCs (as proposed by Powers and Medley 2016). ICCAT structure and functioning (described in section 3.5.2) ensures that local knowledge is being recorded, compiled, analyzed and integrated into fisheries advice and management. Volume 3 of the ICCAT Biennial Report includes the CPC’s reports detailing information provided and activities undertaken.</p> <p>During the meeting with the DIPESCA representatives they confirmed their regular participation in the Annual Meeting plus 2-3 other intersessional meetings and/or Working Groups meetings of Panels I (Tropical Tunas) and IV (Other species: swordfish, billfishes, small tunas). Their representation is normally comprised by the Vice-Minister of Fisheries and Aquaculture and a qualified technician.</p> <p>All nation states in those EEZs the fishery takes place are Contracting Parties (CPCs) of ICCAT (see table 3-22). Besides, all of them (Angola, Cabo Verde, Côte d’Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea Conakry, Liberia, Mauritania, Sao Tome & Principe, Senegal, Sierra Leone) with the only exception of Guinea Bissau are members of Panel 1 (on tropical tunas) (ICCAT 2017f). Further, Senegal is also member of Panel 3 (on temperate tunas, South). Finally, all the countries but Ghana, Sierra Leone and (again) Guinea Bissau are also members of Panel 4 (on other species). Panels are responsible for keeping under review the species, group of species, or geographical area under its purview, and for collecting scientific and other information relating thereto. Based on investigations from the SCRS, Panels may propose to the Commission recommendations for joint action by the CPCs.</p> <p>The meeting of the Standing Committee on Research & Statistics (SCRS) (ICCAT 2017f) held in Madrid between 2-6 October 2017 details that 23 CPCs attended to the 2017 meeting, including: Angola (7 representatives), Côte d’Ivoire (1 representative), Liberia (1 representative), Mauritania (1 representative), Sao Tomé & Príncipe (1 representative), and Senegal (3 representative). The aim of the SCRS is to develop and recommend to the Commission policies and procedures in the collection, compilation, analysis and dissemination of fishery statistics to ensure that the Commission has available at all times complete, current and equivalent statistics on fishery activities in the Convention area.</p> <p>Scientific reports from the SCRS indicate exactly what information is being used, how it is used, and justification is provided for all information that is rejected.</p> <p>SG60 and SG80 are met.</p> <p>However, it is not always clear how different sources of information are used (e.g. socio-economic data, compliance information...) when making management decisions by the Commission. Powers and Medley 2016 argue that the successive changes that occurred in</p>			

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
		<p>the determination of the area of time-space closure in the use of FADs is an example of insufficiently explained decision-making.</p> <p>Further, it can also be considered that effectively for most African countries the ‘local knowledge’ is a underrepresented entity at ICCAT as inferred from a poor catch reporting African countries, the underrepresentation of African authors of the reports, the missing African stock assessment modelers, and the difficulties to take into account the points of view from local communities of fishermen.</p> <p>SG100 is not met</p>		
c	Participation			
	Guided post		<p>The consultation process provides opportunity for all interested and affected parties to be involved.</p> <p>The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.</p>	
	Met?		Y	Y
	Justification	<p>All the CPCs have representation in the different Panels, Committees, Subcommittees and Working Groups and meet on different occasions throughout the year to evaluate, discuss and reach agreements on all relevant issues. On the other hand, the ICCAT Commission holds a general meeting every 2 years and an extraordinary meeting in alternate years. It is on these occasions (usually at the end of the year) when the Recommendations and Resolutions drafted by the Panels are presented for adoption by the Commission, so they can enter into force the following year. In the case of the assessed fishery, the competent Panel is that of Tropical Tunas. However, as detailed in Article 8.1 (b) of the Basic Text of ICCAT, the Recommendations can also be adopted by the Commission if they are proposed to the Commission by other subsidiary bodies and approved by a qualified majority of two thirds of the votes.</p> <p>Guatemalan representatives regularly participate in the Annual Meeting plus 2-3 other intersessional meetings and/or Working Groups meetings of Panels I (Tropical Tunas) and IV (Other species: swordfish, billfishes, small tunas).</p> <p>All nation states in those EEZs the fishery takes place are Contracting Parties (CPCs) of ICCAT (see table 3-22). Besides, all of them (Angola, Cabo Verde, Côte d’Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea Conakry, Liberia, Mauritania, Sao Tome & Principe, Senegal, Sierra Leone) with the only exception of Guinea Bissau are members of Panel 1 (on tropical tunas) (ICCAT 2017f). Actually, this Panel is currently being chaired by Côte d’Ivoire. Further, Senegal is also member of Panel 3 (on temperate tunas, South). Finally, all the countries but Ghana, Sierra Leone and (again) Guinea Bissau are also members of Panel 4 (on other species).</p> <p>The proceedings of the 25th Regular Meeting of the Commission held in Marrakesh (Morocco) on the 14-21 November 2017 (ICCAT 2017e) state that 44 CPCs attended to the meeting, including: Cabo Verde, Côte d’Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea Conakry, Liberia, Mauritania, Sao Tomé & Príncipe, Senegal, and Sierral Leone.</p> <p>SG80 is met.</p> <p>As explained in section 3.5.1, ICCAT is an organization open to any Government member of the United Nations. ICCAT has adopted and continues to take measures to encourage countries to be CPCs and for non-Contracting Parties to cooperate with the conservation measures adopted by the Commission. The success is reflected in the increase of the</p>		

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>	
	<p>membership in the last decades (currently 52 Contracting Parties), as well as in the high level of participation of the CPCs. It can be seen that 6 of the 14 countries where the UoA operates (see Table 3-22) have been incorporated in the last 13 years. The provision of information is an important part of the decision to grant this status. The SCRS is responsible for reviewing Cooperation requests and recommending to the Commission whether an applicant should or should not receive the Cooperating Status.</p> <p>ICCAT has facilitated the participation of interested parties and also offers training and support to countries that lack data management and scientific research capacities, which helps them participate fully and effectively in their activities.</p> <p>The recently re-structured ICCAT website includes an interactive and user-friendly timeline showing all past, current and scheduled meetings. Registration forms, information on the meeting venue, access to consultation documents and data and final reports are easily accessible.</p> <p>SG100 is met.</p>	
References	ICCAT Basic Texts, ICCAT (2017f), ICCAT (2017g), ICCAT (2017h), ICCAT (2017i), ICCAT (2017e), ICCAT (2017c), Powers and Medley (2016)	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

Evaluation Table for PI 3.1.3 – Long term objectives

PI 3.1.3	<p>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.</p>		
Scoring Issue	SG 60	SG 80	SG 100
a	Objectives		
Guided post	Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.
Met?	Y	Y	Y
Justification	<p>The assessed vessels are flying a Guatemalan flag. The Guatemalan General Law for fisheries and Aquaculture establishes that fishing activities shall be managed to ensure a rational and sustainable exploitation of the marine resources and also the conservation of the marine ecosystems (Article 2). Further, Article 7 explicitly states that: <i>“The State must widely apply the precautionary approach in the conservation, management and exploitation of hydrobiological resources in order to protect them and preserve the aquatic environment, taking into consideration the most reliable scientific data available”</i>.</p> <p>The Basic Text of the Convention, in Article VIII, states that the long-term objective of ICCAT fisheries is to maintain populations of tuna and tuna-like species within limits consistent with the MSY.</p> <p>On the other hand, recent ICCAT Resolutions note the application of both the ecosystem</p>		

<p>PI 3.1.3</p>	<p>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.</p>
	<p>approach (Resolution [15-11]) and the precautionary principle (Resolution [15-12]) when formulating Recommendations. The formulation of these Resolutions is consistent with UNFSA and the FAO Code of Conduct for Responsible Fisheries. SG60 and SG80 are met.</p> <p>Recommendation 11-13 reinforces the objective expressed in Article VIII of the ICCAT Basic texts by establishing a set of principles for making decisions based on the status of the stocks to be managed (see PI 1.2.2 for a detailed explanation of the established principles). In relation to the assessed fishery this Recommendation applies both to P1 (yellowfin tuna) and P2 primary species (skipjack, bigeye, swordfish, marlins, sailfish, blue shark).</p> <p>However, while the Basic Text and the Recommendations are effectively binding procedures for all CPCs, the Resolutions are only internal guidelines for the Commission. As already mentioned in PI3.1.1, the preambles of Resolutions [15-11] and [15-12] include the discussions that are taking place within the Working Group on Amendments to modify the Basic Text of the Convention, so as to incorporate the ecosystem approach and the precautionary principle in the Text. Therefore, these Resolutions can be understood as an interim until the modification of the Basic Text occurs. On the other hand, these Resolutions determine the principles to be applied when formulating the Recommendations (which are binding). This situation could raise doubts about whether clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are required by management policy.</p> <p>There are several ICCAT bodies and Recommendations aimed at ensuring MSC P1 and also P2-related objectives are achieved (e.g. WG on FADs, the Sub-Committee on Ecosystems and bycatch, and different Recommendations on reducing incidental bycatch of seabirds, turtles and sharks -see PI3.1.1 SI(a) for a complete list-). Therefore, it can be considered that long-term objectives that guide decision-making, consistent with MSC fisheries standard are explicit within and required by the ICCAT management policy.</p> <p>In the case of the precautionary approach, the 2016 External Review Report on the ICCAT management system (ICCAT 2016h) found that the precautionary approach was not applied in a consistent manner on all ICCAT managed stocks, and recommended that the content of Res 15-12 be transformed into an ICCAT recommendation and that the new Convention contains an explicit commitment to apply the precautionary approach. However, recent Rec 15-07 has represented an important first step in agreeing long term strategies based on precautionary approach. This Recommendation has established a work plan to examine ways to further define the management framework building on Rec 11-13, in particular to evaluate precautionary management reference points and robust HCRs through MSE. Rec 15-07 mandated the SCRS to: (i) identify different management inputs on a stock-by-stock basis for, inter alia, northern albacore, Bluefin tuna, North Atlantic swordfish and tropical tunas; (ii) advise the Commission on options for limit, target and threshold reference points and associated HCRs. Then, in light of SCRS advice the Commission shall then determine pre-agreed management actions that will be triggered to halt or reduce fishing mortality when limit or threshold reference points are breached. The SCRS will be requested to continue to developing appropriate MSE methods to test the robustness of reference points and associated HCRs. This process started with the North Atlantic Albacore, and recent Rec 17-04 has finally determined precautionary biological reference points and HCRs which will guide the decision-making process for this stock. Work on the other stocks (including Tropical Tunas) is still in progress (latest updates on Vol.2 of ICCAT 2017⁶). Based on Rec 15-07 and the evidence provided by Rec 17-04 the assessment team also considers that long-term objectives that guide decision-making, consistent with precautionary approach are explicit within and required by the management policy.</p> <p>Based on all the above, the assessment team considers that SG100 is met.</p>

⁶ Biennial 2017 vol2

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.
References	ICCAT Basic texts, ICCAT (2016h), ICCAT (2017e), ICCAT (2018c)
OVERALL PERFORMANCE INDICATOR SCORE:	
	100
CONDITION NUMBER (if relevant):	
	NA

Evaluation Table for PI 3.2.1 Fishery-specific objectives

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Objectives			
	Guided post	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.
	Met?	Y	Y	Y
	Justification	<p>In previous PIs 3.1.1 and 3.1.3 it has already been argued that management objectives of ICCAT fisheries, as formulated in Article VIII of the Basic Text, Resolutions 15-11 and 15-12, and Recommendations 11-13 and 15-07 are consistent with MSC Principles 1 and 2 and the precautionary approach. All these regulations are applicable to the assessed fishery. Therefore, SG60 is met.</p> <p>The specific-management system for the assessed fishery (unassociated purse seine fishery targeting yellowfin tuna) is comprised mainly by the multi-annual conservation and management program for tropical tunas (Rec 16-01) and also by the recent prohibition of discards of tropical tunas caught by purse seiners (Rec 17-01).</p> <p>Rec 16-01 establishes TACs for Yellowfin and Bigeye tunas based on scientific advice and precautionary approach and aimed to recover the stocks to MSY levels in a certain period (see PIs 1.1.1, 11.2, 1.2.1, 2.1.1 and 2.1.2 for more details). Further, for the bigeye tuna catch limits for the period 2016-2018 and capacity limitations are established for some CPCs. In accordance with Rec 15-07 it was established that at its 2017 meeting the SCRS shall provide performance indicators for skipjack, bigeye and yellowfin tuna with the perspective to develop MSE for tropical tunas. In this meeting (ICCAT 2017⁷) the tropical tuna species group discussed how the schedule for the development of MSE, which calls for the MSE results to be first available in 2020, relates to the current schedule of assessments for tropical tunas (2018 for bigeye, 2019 for skipjack and 2021 for yellowfin). The Committee noted that given the multi-species natures of the tropical tuna fishery, the MSE should take this into account. The Committee developed an initial schedule of activities to progress the MSE and the species rapporteurs agreed to develop a budget to be considered by the SCRS and incorporated into a comprehensive MSE budget for the SCRS. Therefore, this is still an ongoing objective which is being developed.</p>		

⁷ ICCAT 2017 Biennial report Vol 2

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
	<p>Finally, recent Rec 17-01 aims to achieve a substantial reduction in discards of tropical tunas by 2020. In order to do so, CPSs whose purse seiners are authorized to fish for bigeye and/or yellowfin and/or skipjack tuna in the Convention area must require these vessels to retain on board then land or transship to port all bigeye, skipjack and yellowfin tunas, except in some cases fully described within the Recommendation. In 2020 the SCRS has the mandate to assess the effectiveness of this Recommendation and submit recommendations to the Commission regarding potential improvements. Further, the SCRS shall also undertake work to examine the benefits according to the objectives defined above of retaining non-targeted species catches and present its recommendations to the Commission. The work should take into account all species that are usually discarded on all major gears (i.e., purse-seines, longlines and gillnets), and should look at fisheries that take place both on the high seas and in waters under national jurisdiction and the feasibility of both retaining on-board and processing of the associated landings.</p> <p>Based on the information presented above the assessment team considers that there is evidence that well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system. SG100 is met.</p>		
References	ICCAT Basic Texts, ICCAT 2018c		
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 3.2.2 – Decision-making processes

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
Scoring Issue	SG 60	SG 80	SG 100
a	Decision-making processes		
	Guided post	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.
	Met?	Y	Y
	Justification	<p>Panels are responsible for keeping under review the species, group of species, or geographic area under its view, and for collecting scientific and other information relating thereto. Based on investigations from the SCRS, Panels may propose to the Commission (during its Annual Meeting, as explained in PI 3.1.1) recommendations for joint action by the Contracting Parties. In order to do so, Panels meet at least once prior to the Annual Meeting of the Commission. In the case of the assessed fishery the competent Panel is Panel I (on tropical tunas). In addition, other supporting bodies (such as the Working Group on FADs) may also submit Recommendations for its approval to the Commission.</p> <p>Subsequently all subsidiary bodies of the Commission (STACFAD, SCRS, COC, PWG, SWGSM), Sub-Committees (e.g. on Ecosystems and bycatch) and Working Groups (e.g. on FADs) meet several times during the year according to pre-agreed work plans which are designed in accordance to the needs. For instance, the annual SCRS report (included in the Vol 2. of the ICCAT Biennial Reports) details the work plans of the species groups. The</p>	

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
	<p>Tropical Tuna work plan for 2018 (included in Appendix 12 of ICCAT 2017e) is quoted below and serves as an example of how a strategy is being design in order to fulfill gaps between the available information and the management needs: <i>“Paragraph 44 of Recommendation [16-01] requested SCRS to conduct a new stock assessment for bigeye tuna in 2018. This is consistent with the strategic research plan of the SCRS and is considered a priority because 1) the last assessment was conducted in 2015, 2) the overexploited status of the stock requires a close monitoring of the population, 3) the TAC agreed for 2016 has been overshot, 4) since the last assessment there have been significant changes to fishery historical data, and 5) new information from the AOTTP Program would be available to inform the stock assessment. The stock assessment methods used in 2015 for providing the management advice (SS3 and ASPIC) should be used, in addition to other methods available in ICCAT stock assessment software catalogue, in 2018 bigeye stock assessment; which will require substantial data preparatory work by the Secretariat and other members of the Group. Moreover, Recommendation [16-01] and the ICCAT Working Group on FADs also requested the Tropical Working Group to address several questions in 2018, such as the analysis of the current FAD moratoria detailed in Rec. [16-01], standardization of FAD fishery definition and indicators, etc. Thus, due to the large workload foreseen for 2018, the Group considered that a data preparatory meeting is necessary during the second quarter of 2018 to prepare the bigeye assessment Working Group meeting during the third quarter of 2018.”</i></p> <p>An example of how the ICCAT decision-making process is able to design a strategy to achieve fishery-specific objectives is provided by Rec 15-07 on MSE, which was already detailed in PI 3.1.1 SI (b). This Rec details a strategy which includes mandates to the SCRS and the Commission. This process started with the North Atlantic Albacore, and recent Rec 17-04 has finally determined precautionary biological reference points and HCRs which will guide the decision-making process for this stock. The Commission requests related to MSE on tropical tunas are already explicit in [Rec. 16-01]. This includes to provide performance indicators for yellowfin, skipjack and bigeye tuna with the perspective to develop management strategy evaluations for tropical tunas. At the latest meeting of the SCRS held in Madrid between 2-6 October 2017, the tropical tuna species group discussed how the schedule for the development of MSE, which calls for the MSE results to be first available in 2020, relates to the current schedule of assessments for tropical tunas (2018 for bigeye, 2019 for skipjack and 2021 for yellowfin). The Committee noted that given the multi-species nature of the tropical tuna fishery, the MSE should take this into account. The Committee developed an initial schedule of activities to progress the MSE and the species rapporteurs agreed to develop a budget to be considered by the SCRS and incorporated into a comprehensive MSE budget for the SCRS (ICCAT 2017e).</p> <p>SG60 and SG80 are met.</p>		
b	Responsiveness of decision-making processes		
Guidepost	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.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
Met?	Y	Y	N

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
Justification	<p>As explained in previous PIs, decision-making process at ICCAT integrates scientific knowledge gathered through specific research programs (e.g. AOTTP, EPBR, SMTYP, SRDCP), comprehensive fishery data provided by the CPPs (Task I and II, VMS, logbooks, observers data, and sometimes other indicators such as price...) and the results of the stock assessments performed by the SCRS. The multi-stakeholder nature of the decision-making bodies (Panels, Annual Meeting of the Committee) ensures that stakeholders' opinion is taken into consideration when making decisions. Further, according to Rec 14-13 the objective of the SWGSM is to enhance communication and foster mutual understanding between fisheries managers and scientists, by establishing a forum to exchange views and to support the development and effective implementation of management strategies.</p> <p>The tight schedule of intersessional and WGs meetings throughout the year and prior to the Panels meetings and the Annual Meeting of the Commission allows improvements to be regularly incorporated. Some examples are listed below:</p> <ul style="list-style-type: none"> ▪ Stock assessments are constantly being reviewed and improved (benchmark assessments are regularly performed), ▪ An ambitious tuna tagging project (AOTTP) has recently been launched, ▪ Increasing and more detailed obligations in relation to FAD management and observer programs have been developed and included in the Tropical Tuna fisheries management. <p>SG60 and SG80 are met.</p> <p>However, as already explained in PI1.2.3, there are limitations both due to the biological characteristics of the species and the fishing activity itself that have not yet been fully integrated into the stock assessment and therefore into the Decision-making process. Also, as explained in previous SIs some decisions may not have been sufficiently explained (e.g. the determination of the area of time-space closure in the use of FADs). Finally, the external review of ICCAT performance (ICCAT 2017⁸) noted that ICCAT Panels and Committees have a tendency to defer decision-making on measures in the interests of achieving consensus, rather than opting for a voting process, thereby unnecessarily delaying the adoption of necessary conservation and measures. The Panel in charge of the external review recommended that <i>“Chairs of the Commission, Panels, COC and PWG should be prepared, once there has been sufficient discussion, to put draft Recommendations to a vote”</i>.</p> <p>Based on the above, SG 100 is not met.</p>		
c	Use of precautionary approach		
Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
Met?		Y	
Justification	<p>Current ICCAT decision-making processes use the best available information and advice provided by the subsidiary bodies of the Commission (STACFAD, SCRS, COC, PWG and SWGSM).</p> <p>Further, Resolution 15-12 states that:</p>		

⁸ external review 2016

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
	<p>1. When making recommendations pursuant to Article VIII of the Convention, the Commission should apply a precautionary approach, in accordance with relevant international standards.</p> <p>2. In applying a precautionary approach, the Commission should inter alia:</p> <ul style="list-style-type: none"> a) use the best available scientific advice; b) exercise caution when scientific information is uncertain, unreliable or inadequate; c) determine, on the basis of the best scientific information available, stock specific reference points, in particular limit reference points, and the action to be taken if exceeded; and d) not use the absence of adequate scientific information as a reason to postpone or not to take conservation and management action in relation to the species under its mandate. <p>3. In applying a precautionary approach, the Commission should take measures to ensure that when limit reference points are approached, they will not be exceeded. In the event that they are exceeded, the Commission should without delay take action to restore the stocks to levels above the identified reference points.</p> <p>The Commission requests to the SCRS related to MSE on tropical tunas are already explicit in [Rec. 16-01]. This includes to provide performance indicators for yellowfin, skipjack and bigeye tuna with the perspective to develop management strategy evaluations for tropical tunas, in accordance with Rec 15-07.</p> <p>Despite Resolution 15-12 is not binding, the fact that precautionary reference points and robust HCRs for tropical tuna fisheries are still being developed by the SCRS and the finding stated in the 2016 external review of the ICCAT performance that the Commission has not applied in a consistent manner the precautionary approach (e.g. the management of the bigeye tuna was not addressed in an effective manner), the assessment team considers that in the case of the Yellowfin tuna precautionary is being applied in accordance with Resolution 15-12 (point 2). SG 80 is met.</p>		
d	Accountability and transparency of management system and decision-making process		
Guideline	Some information on the fishery's performance and management action is generally available on request to stakeholders.	Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
Met?	Y	Y	Y
Justification	<p>All information provided by the CPCs (including their compliance in data reporting), together with the decisions taken and their justifications are publicly available on the ICCAT website. This website has been recently improved in order to improve its user-friendliness, as pointed by the external reviewer in the latest external review (ICCAT 2017).</p> <p>The ICCAT Biennial Report is published in four volumes. Volume 1 includes the Proceedings</p>		

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
	<p>of the Commission Meetings and the reports of all the associated meetings (with the exception of the Report of the Standing Committee on Research and Statistics-SCRS). Volume 2 contains the Report of the Standing Committee on Research and Statistics (SCRS) and its appendices. Volume 3 includes the Annual Reports of the Contracting Parties of the Commission. Volume 4 includes the Secretariat’s Report on Statistics and Coordination of Research, the Secretariat’s Administrative and Financial Reports, and the Secretariat’s Reports to the ICCAT Conservation and Management Measures Compliance Committee (COC), and to the Permanent Working Group for the Improvement of ICCAT Statistics and Conservation Measures (PWG). Volumes 3 and 4 of the Biennial Report are only published in electronic format. This Report is prepared, approved and distributed in accordance with Article III, paragraph 9, and Article IV, paragraph 2-d, of the Convention, and Rule 15 of the Rules of Procedure of the Commission. The Report is available in the three official languages of the Commission: English, French and Spanish.</p> <p>Also, at the ICCAT website there are other publications available (Guidelines, Collective Volumes of Scientific Papers, Statistical Bulletin, Special Publications –including the Report of the Independent Performance Review of ICCAT, Meeting Reports and the ICCAT Manual), all stock assessments performed by the SCRS, information of the Special Research Programs, the SCRS Science Strategic Plan for 2015-2020, MCS information (e.g. Records of vessels, ICCAT IUU vessels list, observer and inspection programs...). Finally, an interactive timeline informs about all past, current and scheduled meetings, and provides access to all consultation documents and data (in the case of future meetings) and final reports (in the case of past meetings).</p> <p>However, it is not always clear how different sources of information are used (e.g. socio-economic data, compliance information...) when making management decisions by the Commission, as stated in PI 3.1.1 SI(b) and PI 3.1.2 SI(b). For instance, Powers and Medley 2016 argue that the successive changes that occurred in the determination of the area of time-space closure in the use of FADs is an example of insufficiently explained decision-making.</p> <p>As a result of the latest Independent performance review of ICCAT, an <i>ad hoc</i> WG to follow up on the recommendations contained in the review report was created through Rec 16-20. Reports of this WG are available at the Biennial Report vol 1.</p> <p>Despite the manner in which agreements are reached may not always be fully disclosed. Based on the information presented above the assessment team considers that SG60, SG80 and SG100 are met</p>		
e	Approach to disputes		
Guideline	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
Met?	Y	Y	N
Justification	At a National level, Regulation 223-2005 determines that disputes arising as a result of the application of the current Regulation will be solve by the Ministry of Agriculture after receiving a technical report to be prepared by Unipisca (the competent authority in the application of the Fisheries Law and the management of the marine resources). According		

PI 3.2.2	<p>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</p>
	<p>to the Dipesca representatives interviewed during the site visit no conflicts have arisen.</p> <p>So far, despite the COC has warned CPCs because of failing to submit data on their fishing activities (e.g. in the latest COC annual report Brazil requested the Committee to delay applicability to Brazil of the retention prohibition under Rec 11-15 to enable it to submit Brazil’s Task I data to ICCAT, justifying the delay due to the economic and institutional instability experienced in the past year in this CPC), there have been no cases of repeated violations of the ICCAT Recommendations by the CPCs (see PI3.1.1).</p> <p>SG60 is met.</p> <p>There are also no pending legal disputes, since until now CPCs have not used international law to resolve disputes. It can therefore be considered that by implementing the existing mechanisms (multi-stakeholder Panels and Committees, and the recent Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers (SWGSM) ICCAT have been proactive in avoiding disputes. Recently, the management system has demonstrated its ability to comply in a timely fashion with decisions adopted by the Commission (even before any judicial decision had been taken): Brazil has managed to report to the ICCAT Secretariat reviewed and updated Task I catch data in time (by April 2018) to avoid the applicability of the retention prohibition as established in rec 11-15. This data has already been assessed and accepted by the ICCAT Secretariat and they were presented to the latest SCRS meeting held in Madrid between 1-5 October 2018.</p> <p>SG80 is met.</p> <p>However, it would be useful to have a better mechanisms for the resolution of legal disputes to avoid the possibility of a CPC using the objection process to not comply with a certain Recommendation with which it does not agree (see PI3.1.1 for more details). In 2006/07, Libya and Turkey objected to the recovery plan for the Bluefin tuna in the Mediterranean, arguing that the allocation of quotas was unfair: the dispute remains unsolved (Powers and Medley 2016). UNFSA has recommended that RFMOs seek to impose limits on behaviors subsequent to the decision of a CPC to circumvent comply with a particular Recommendation, so that conservation objectives are not undermined (Powers and Medley 2016). To do so, they recommend to implement clear processes for the resolution of disputes and a description of alternative measures to be implemented in the interim (Powers and Medley 2016 and references therein cited). This is aligned with the recommendation made by the external reviewers to ICCAT during the latest external review of the ICCAT performance (ICCAT 2016h): <i>“The Panel recommends that ICCAT urges its CPCs to reach agreement on the inclusion of compulsory dispute settlement procedures entailing binding decisions in the Amended ICCAT Convention, which also devote attention to provisional arrangements of a practical nature pending the establishment of a dispute.”</i></p> <p>Based on all the above, SG100 is not met.</p>
References	ICCAT 2016h, ICCAT 2017e, ICCAT 2018c, Powers and Medley (2016)
OVERALL PERFORMANCE INDICATOR SCORE:	85
CONDITION NUMBER (if relevant):	NA

Evaluation Table for PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guidepost	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Y	Y	N
	Justification	<p>Most of the RFMOs managing tuna and tuna-like species use their vessel registers to establish ‘positive lists’ (Powers and Medley 2016). ICCAT was the first RFMO to adopt such a measure, by establishing a record of large-scale fishing vessels authorized to operate within its area of competence. This record is based on information submitted by CPCs. Importantly, vessels not entered into the record are deemed to be unauthorized to fish for, retain on board, transship or land tuna and tuna-like species. Parties to ICCAT are required to take a number of measures, among them prohibiting the transshipment and landing of tuna and tuna-like species by large-scale fishing vessels that are not entered into its record.</p> <p>As established by the Recommendation 11-18 and the Resolution 14-11 the ICCAT Secretariat ensures publicity of the IUU vessels list adopted by ICCAT at its annual meeting by placing it on the ICCAT web site. This list is updated and coordinated with other IUU vessel lists from other RFMOs. At the moment of preparing this report a total of 102 vessels are included in that IUU list (including all RFMOs).</p> <p>Recommendation 16-01 determines that CPCs shall issue specific authorizations to vessels 20 meters LOA or greater flying their flag allowing them to fish for bigeye and/or yellowfin and/or skipjack tunas in the Convention area, and to vessels flying their flag used for any kind of support of this fishing activity. The list of authorized vessels for tropical tunas is communicated to the Executive Secretary before July 1 of each year. This list is updated and available on the ICCAT website (https://www.iccat.int/en/vesselsrecord.asp).</p> <p>ICCAT Recommendation [12-07] urges CPCs to establish a port inspection system and establishes the minimum standards that guide inspectors as they monitor landings and transshipments, monitor compliance with ICCAT management measures, including fees, and collect data and other information. Subsequently Recommendation [14-08] endorses the previous Recommendation establishing a special fund to finance the implementation of the system.</p> <p>Recommendation [14-09] establishes that vessels exceeding 24m length overall shall get installed a VMS on board, and also that each CPC shall ensure that its vessels 20 meters LOA or greater record their catch in accordance with the requirements in Recommendation 03-13. In the case of the assessed vessels logbook and VMS data are reported to DIPESCA in Guatemala and the nation States where the vessels are operating under fishing agreements. Logbook data are sent by the client to DIPESCA at the end of each fishing trip. The logbook and the landing declaration are sent by the client to DIPESCA at the end of each fishing trip, so they can cross check them before issuing the catches certificate (this document is compulsory for importing the product into the European Union). Further they also receive an annual report from the Jealsa-Rianxeira Group accounting for all final figures of processed and wet weight per species. Based on all these documents DIPESCA prepares an annual report of tuna catches from Guatemala to the</p>		

<p>PI 3.2.3</p>	<p>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</p>
	<p>ICCAT Secretariat in June.</p> <p>They also send two inspector once a year to Abidjan to perform an on-site inspection of the vessels (they inspect several issues, including fishing gear, different records –logbooks, fish hold plans,etc.- and also safety issues). The report prepared by the DIPESCA inspectors as a result of the latest inspection performed in Abidjan before the site visit was handed to the assessment team for its assessment.</p> <p>Recommendation 16-01 determines that each CPC shall take appropriate action to ensure that all vessels flying its flag, including support vessels, when engaged in fishing activities during the area/time closure to FADs, have an observer on board in accordance with Annex 5 and report the information collected by the observers each year by 31 July to the ICCAT Secretariat and to SCRS. CPCs shall observe the observer coverage stipulated in Recommendation 16-14 (a minimum of 5% in number of sets or fishing trips for purse seiners), although purse-seiners are encouraged to increase it in accordance to 2016 SCRS recommendations (minimum level of 20%). However, in the case of the assessed vessels they have implemented an observer program on board since 2012 with a 100% coverage in number of fishing trips. Until February 2017, this program was coordinated by the IEO, under an agreement signed between OPAGAC and the IEO. Once this agreement was finalized the client signed a contract with a private company Sea Eye based in Côte d'Ivoire (working under the supervision of AZTI) to continue carrying scientific observers on board (see section 3.5.2). These observers' record and report detailed information on fishing operations, catch (volume and size composition of tuna species) and bycatch species composition (number of individuals and estimated weights).</p> <p>The ICCAT Conservation and Management Measures Compliance Committee (COC) reviews all aspects of compliance with ICCAT conservation and management measures in the ICCAT Convention Area, with particular reference to compliance with such measures by ICCAT Contracting Parties. The COC annual report is included in Volume I of the ICCAT Biennial Report, including: i) the degree of compliance of each CPC regarding catch data reporting (Task I and II) to the SCRS, and (if needed) the response/explanation and actions taken by the CPC; ii) quota overages and balance; iii) adjusted quotas and their temporary terms. Also, the ICCAT Secretariat prepares an annual report for the COC (included in Volume 4 of the ICCAT Biennial Reports) which provides guidance on how to report on implementation of measures in the future, to obtain a more complete picture. Further, at a client's level the vessels are being audited by AENOR (as part of the verification of compliance with the standard UNE1956006:2016 and by MRAG as part of the compliance with the requirements established in the ISSF PVR Register). Also, Jealsa Rianxeira Group is being annually audited by MRAG for the compliance with the comprehensive ISSF conservation measures (see section 3.2.5 for more details on the PVR register and ISSF conservation measures). Many of these requirements are related to the RFMOs requirements in terms of IUU, vessel registration, catch reporting etc. The assessed vessels are part of the Jealsa Group and at the same time suppliers of the Jealsa processing plants, so they are directly and indirectly being audited. Further, since most of the major tuna traders are participating companies in ISSF they are bound to accomplished with the ISSF conversation measures, supporting the RFMOs (ICCAT being one of them) to ensure that their findings and the data underlying them are as accurate and complete as possible. For instance, ISSF conservation measure 2.2. Requires the ISSF participating companies to submit every quarter very detailed information on all their purchases to the RFMO scientific bodies (see PI1.2.3 SI (a) for more details).</p> <p>So far, the implemented MCS system detailed above has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</p> <p>SG60 and SG80 are met.</p> <p>The Agreement on Port State Measures (PSMA) (in force since June 2016) is the first binding international agreement to specifically target illegal, unreported and unregulated (IUU) fishing. Its objective is to prevent, deter and eliminate IUU fishing by preventing vessels engaged in IUU fishing from using ports and landing their catches. In this way, the</p>

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	<p>PSMA reduces the incentive of such vessels to continue to operate while it also blocks fishery products derived from IUU fishing from reaching national and international markets. The provisions of the PSMA apply to fishing vessels seeking entry into a designated port of a State which is different to their flag State. This binding Agreement establishes minimum measures of the port States. The application of the measures established in the Agreement allows progress in the harmonization between port States and therefore facilitates regional and international cooperation in preventing the arrival of IUU fishing to national and international markets. The unloading ports used by the assessed vessels are Abidjan (Ivory Coast), Dakar (Senegal) and Pobra do Caramiñal (Spain-EU). In Table 3-22 it is shown that both Senegal and the EU are signatories of the PSMA, but this is not the case of Ivory Coast and this is, by far, the main landing port of the assessed vessels according to information collected during the site visit. The latest external review of the ICCAT performance (ICCAT 2016⁹) recommended ICCAT to encourage its CPCs to become Contracting Parties of the PSMA, and also to amend Rec 12-07 to ensure more consistency with the PSMA.</p> <p>In the latest external review of the ICCAT performance (ICCAT 2016¹⁰) it was pointed out that although Flag State duties are adequately reflected in current ICCAT recommendations, the external reviewers had no view as to whether such responsibilities are being executed correctly, as it does not have information at its disposal in ICCAT to form a judgement.</p> <p>Several recommendations are made in relation to the COC objectives and activities in order to improve the capacity to assess detect and deter non-compliance and follow-up on infringements:</p> <ul style="list-style-type: none"> ▪ The COC should identify key compliance priorities across the range of different fisheries, and program its work accordingly. Identification of non-respect of reporting requirements or incomplete reporting by CPCs should be entrusted to the ICCAT secretariat and its report submitted to COC in advance of the Annual Meeting. ▪ Independent information from the fisheries, through inspections at sea and in port, and through effective observer programs, should be made available to the COC, in order for the COC to conduct an effective compliance assessment. ▪ The key task of the COC should be to make a qualitative assessment as to the degree to which the measures in the individual fisheries contained in the ICCAT recommendations, are being respected by the vessels of the Parties ▪ In the view of the external reviewers, the COC will be unable to exercise such a function until it obtains information from independent sources, such as, a joint inspection scheme and effective regional observer programs. <p>Based on the above, SG100 is not met.</p>		
b	Sanctions		
Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
Met?	Y	Y	N

⁹ ICCAt external review

¹⁰ 2016 external review

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
Justification	<p>Article 81 of the General Fisheries and Aquaculture Law of Guatemala [Decreto 80-2002] details the sanctioning regime. Sanctions vary between 10,000 and 20,000 US\$, and in the case of a third infringement the fishing license can be withdrawn for a period varying between 3 and 6 months. According to the Dipesca representatives interviewed during the site visit no sanctions have ever been raised against the assessed fleet.</p> <p>In practice, the most important sanctions that RFMOs can apply are the inclusion in the IUU vessel list, the adjustment of fishing quotas, the application of trade restrictive measures and the retention prohibition. ICCAT has adopted recommendations enabling these type of sanctions to be taken against individual States if necessary.</p> <p>Mechanisms for adjusting quotas in case of overage (or underage) of an annual catch limit are determined in several fishery-specific Recommendations. In the case of Rec 16-01 there are mechanisms determined for the bigeye tuna. Rec 01-12 determines that any temporary quota adjustments shall be done only under authorization by the Commission.</p> <p>Rec 06-13 determines the procedures to impose trade restrictive measures by the Commission. This Recommendation also notes that this type of measures should be implemented only as a last resort, where other measures have proven unsuccessful. It also notes they should be adopted and implemented in accordance with international law, including principles, rights and obligations established in the World Trade Organization Agreements, and be implemented in a fair, transparent and non-discriminatory manner.</p> <p>Recommendation 11-15 notes that CPCs that do not report Task I data, including zero catches, for one or more species for a given year, in accordance with SCRS data reporting requirements, shall be prohibited from retaining such species as of the year following the lack or incomplete reporting until such data have been received by the ICCAT Secretariat.</p> <p>Recent Recommendation 16-17 has addressed the need to provide detailed guidelines for an ICCAT schedule of actions to be applied when determining non-compliance and appropriate actions to address non-compliance with ICCAT conservation and management measures. The guidelines are structure in 3 successive steps to be followed:</p> <ul style="list-style-type: none"> ▪ Step 1: Determination of category of non-compliance(s) ▪ Step 2: Determination of the severity of non-compliance(s) ▪ Step 3: Application of actions to address compliance failures, where warranted <p>According to the report prepared by the ICCAT Secretariat to the COC (ICCAT 2017d), following the 2014 Compliance Committee meeting, the Secretariat followed the instructions of the Chair of the Compliance Committee to determine whether or not actions needed to be taken under Rec. 11-15. Retention prohibitions on certain species remain in force for Barbados, the Philippines, and Vanuatu, while they were lifted for Angola, Côte d'Ivoire, South Africa, and St. Vincent and Grenadines by the end of year 2015 following the submissions of missing data or confirmation of zero catch had been received by these four CPCs</p> <p>As decided at the 24th Regular meeting of the Commission, a prohibition letter was sent to Mauritania and to Nicaragua. Since the Secretariat has still not received Task I data of 2014 or confirmation of zero catch: these two CPCs shall continue to be prohibited from retaining ICCAT fisheries, including sharks species caught in association with ICCAT fisheries from 2016 until data have been received at the Secretariat.</p> <p>The list of ICCAT CPCs who have not reported Task I information for 2015 (positive catches, zero catches, or, "no" fishing activity) until 15 October 2016, using the standard Task I data reporting process, were Honduras, Mauritania, Nicaragua, Sierra Leone, Vanuatu and Bolivia (Cooperating Party). In addition, some clarification is also required for some European Union member states (EU-Denmark, EU-Estonia, EU-Germany, EU-Latvia, EU-Lithuania and EU-Sweden) with some historical Task I catches in the last decade.</p> <p>According to Tropical Tuna Species Group intersessional meeting held in September 2017 in Madrid (ICCAT 2017e), the Committee was informed that in the latest years (2014-2016)</p>

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	<p>catches from a major fishery for tropical tunas (Brazil) in the western Atlantic have not been provided. As a result Recommendation 11-15 should have been triggered. However, Brazil requested the Committee to delay applicability to Brazil of the retention prohibition under Rec. 11-15 to enable it to submit Brazil’s Task I data to ICCAT, justifying the delay due to the economic and institutional instability experienced in the past year in this CPC. In its intervention, Brazil specifically committed to submit a comprehensive revision to its Task I data covering the last five years by March 31, 2018, after which point the retention prohibition would be activated if Brazil had not submitted its Task I data. The justification and commitment presented by Brazil were enough to receive the endorsement from the Compliance Committee for this derogation (ICCAT 2017i).</p> <p>Also, there are examples of temporary adjustments of quotas which has been successfully applied, as in the case of the reduction of bigeye quota applied to China-Taipei in 2005 and also to the EU for exceeding its catch limit for two management periods. Moreover, ICCAT has recently implemented a ban on imports from Bolivia and Georgia (none of them is a CPC).</p> <p>Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence SG60 and SG80 are met</p> <p>ISSF consider that the application of the IUU list by ICCAT has not been effective, unlike the case of CCAMLR (Powers and Medley 2016).</p> <p>Also, there are cases showing that ICCAT sanctions do not provide effective deterrence, as is the case of several infractions related to Mediterranean Bluefin tuna (Powers and Medley 2016). Further, these authors consider that sanctions appear to be applied among countries consistent with their involvement in ICCAT. The most serious sanctions have been applied to countries and fishing entities which are not members of ICCAT. Sanctions applied to CPCs have generally been weak.</p> <p>Finally, as explained in previous SI the latest external review of ICCAT performance (ICCAT 2016h) detected constrains in the COC functioning in order to detect and deter non-compliance (see previous SI).</p> <p>SG100 is not met.</p>		
c	Compliance		
Guided post	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
Met?	Y	Y	N
Justification	<p>The MCS system described in SI(a) and the results shown in the annual COC report provide evidence that fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. The Standard SCRS catalogues on Statistics (Task I and Task II) of the 13 major ICCAT species, included in Volume 4 of the 2016 ICCAT Biennial Report (ICCAT 2017d) confirm that the level of reporting on Task I and Task II for tropical tunas is high for those CPCs that contribute the most to total catches.</p> <p>Guatemala in particular has been fully reporting Task I and Task II (catch-effort and catch-at-size) for the 3 tropical tunas species since at least 2005. This is consistent with the fact</p>		

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	<p>that the assessed vessels have a 100% observer coverage since 2012. These observers are using ICCAT forms and sampling protocols, and all information recorded is reported to the ICCAT Secretariat so it can be used by the SCRS.</p> <p>At the client’s level the results of the audits performed to ensure compliance with the standard UNE1956006:2016 and in particular with the PVR register and the ISSF conservation measures by AENOR and in particular MRAG provide evidence that the assessed vessels (and also the processing plants where most of the tuna caught by the UoA is being processed) are complying with the management system and also providing information of importance to the effective management of the fishery (detailed logbooks and observer data from the vessels, quarter data submission to the RFMO scientific bodies of all purchases as required by ISSF conservation measure 2.2).</p> <p>SG60 and SG80 are met.</p> <p>The latest Secretariat’s report to the COC express concerns about lack of reporting and sufficiency of reporting (ICCAT 2017i). In the COC Report one CPC also raised concerns about fishing activities taking place in certain areas of the Convention (particularly the Caribbean Sea) by non-CPCs who do not recognize the rules of ICCAT.</p> <p>As explained in PI 2.1.1, IUU fishing affecting tropical tunas has been estimated by the SCRS by comparing monitored landings in West African ports and cannery data against catches reported to ICCAT. Estimates of undeclared catches of these purse seiners have increased since 2006 and could have exceeded 20,000 t for the three main species of tropical tuna. The Committee expressed the need for the CPCs and the canning industry in the region to collaborate to estimate and communicate these catches to ICCAT.</p> <p>Also, as pointed out by the external reviewers (ICCAT 2016h) the COC has constrains in its capacity to assess to which degree the measures in the individual fisheries are being respected by the vessels of the Parties.</p> <p>Based on all the above, SG100 is not met.</p>		
d	Systematic non-compliance		
Guided post		There is no evidence of systematic non-compliance.	
Met?		Y	
Justification	<p>Despite the undeclared catches in the Region and the constrains of the COC in relation to follow-up infringements, no evidence of systematic compliance has been identified.</p> <p>SG80 is met</p>		
References	ICCAT (2016h), ICCAT (2017e), ICCAT (2017i), , ICCAT (2017e), ICCAT (2018c)		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>			
Scoring Issue	SG 60	SG 80	SG 100	
a	Evaluation coverage			
	Guidepost	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system	There are mechanisms in place to evaluate all parts of the fishery-specific management system.
	Met?	Y	Y	Y
	Justification	<p>ICCAT has mechanisms to evaluate all parts of the management system. This is demonstrated by the various Panels, Committees, Subcommittees and Working Groups that meet regularly and communicate their findings (including non-compliances and opportunities for improvement) to the Commission. The exhaustive biennial report published in 4 volumes compiles all proceedings and reports prepared annually by the different bodies. The evaluation of data collected from the monitoring, control and surveillance of the fishery, as well as specific scientific studies, together with the information collected in the consultation processes, constitute the basis of ICCAT management process. This process allows respond to both wider management issues of stock wide and specific CPCs concerns (and even concerns raised by observers such as non-CPCs and NGOs since they are allowed participate in the annual meeting of the Commission).</p> <p>The Conservation and Management Measures Compliance Committee (COC) reviews all aspects of compliance with ICCAT conservation and management measures in the ICCAT Convention Area, with particular reference to compliance with such measures by ICCAT Contracting Parties. While the Permanent Working Group for the Improvement of ICCAT Statistics and Conservation Measures (PWG) obtains, compiles and reviews all available information on the fishing activities of non-Contracting Parties, for species under the purview of ICCAT, including details on the type, flag and name of vessels and reported or estimated catches by species and area.</p> <p>Finally, the Commission may decide to proceed with an external review of its performance and entrust this task to external expert reviewers, as it was the case in 2007 and 2015 (see SI (b)). The 2016 External Performance Review was based on the terms of reference that had been developed after several discussion sessions in the United Nations, FAO and in other meetings of RFMOs. The 2016 TOR permitted the Performance Review Panel to undertake an extensive review of ICCAT’s performance against its objectives in the period 2008 to 2016; a particularly active period for ICCAT. The Panel Report notably reviews ICCAT’s Basic Texts as well as the most recent version of the draft Amended ICCAT Convention; the status of the stocks and the scientific process; the development and implementation of conservation and management measures; compliance with those measures; and flag State and port State duties. The Report also reviews whether, and to what extent, the recommendations of the 2008 Panel were addressed by ICCAT. The chapters of the report are entitled: (1) Intro; (2) Conservation and Management (stock by stock); (3) Monitoring, Control and Surveillance; (4) Compliance and Enforcement; (5) Governance; (6) Science; (7) Comparison with other RFMOs; (8) Financial and Administrative issues. As can be noted in reading this report, ICCAT is congratulated for making significant progress since the first performance review, particularly as it had adopted appropriate measures to strengthen and improve management of the species under its competency. The independent panel also recognized that ICCAT is a leading RFMO. Last, but not least, the report highlights what still remains to be done. Accordingly, ICCAT recently agreed to evaluate and address the recommendations made in the Second</p>		

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>			
	<p>Performance Review, and adopted a Resolution [16-20] which establishes an Ad Hoc Working Group to follow up on the recommendations contained in the review report. On the negative side the 2016 external review report noted that ICCAT has not addressed in an effective manner the management of the tropical tuna (bigeye).</p> <p>SG60, SG80 and SG100 are met.</p>			
b	Internal and/or external review			
	<p>Guidepost</p>	<p>The fishery-specific management system is subject to occasional internal review.</p>	<p>The fishery-specific management system is subject to regular internal and occasional external review.</p>	<p>The fishery-specific management system is subject to regular internal and external review.</p>
	<p>Met?</p>	<p>Y</p>	<p>Y</p>	<p>N</p>
	<p>Justification</p>	<p>The multi-annual program for the conservation and management of Tropical Tunas has been subject of regular internal reviews since its inception in 2011 (at that time skipjack tuna was not included). A review of successive Recommendations 13-01, 14-01 (this was the first one including skipjack tuna), 15-01, and 16 -01 provides an insight on how different elements of the harvest strategy have been incorporated or refined (detailed data collection for FOB sets, FAD management plans, requirements for the observer program, mandates for the SCRS, see sections 3.3.8 and 3.5.1 for more details). This reviewing process is an ongoing process, for instance the SCRS has a mandate on developing a MSE for this fishery in accordance to Rec 15-07. Also, in the final provisions of Rec [16-01] it is noted that the SCRS shall address to the extent possible the Recommendations made by the FAD Working Group in 2016 and for the remaining ones develop a work plan to be presented to the Commission at its 2017 Annual Meeting. Recommendation 17-01 on prohibition on discards of tropical tunas caught by purse seiners is also the result of a regular process of revision of the management system for tropical tunas.</p> <p>SG60 is met.</p> <p>In previous paragraphs it was already explained that the fishery-specific management system is subject to regular reviews. The multi-annual program for tropical tunas has been reviewed four times since its inception in 2011 and significant improvements have been included in the management of the ICCAT fisheries targeting tropical tunas in general, and to purse seiners in particular. These reviews are the result of many different bodies and stakeholders (Tropical Tuna Species Group of the SCRS, ad hoc WG on FADs, SWGSM, PWG, COC, Sub-Committee on Ecosystems and By-catch, PWG...), however they cannot be considered external since they are all within ICCAT.</p> <p>Resolution 11-17 on best available science noted that CPCs undertake to “strengthen peer review mechanisms within the SCRS by participation of outside experts (e.g., from other RFMOs or from academia) in the SCRS activities, particularly for stock assessments”. And also stated that “The next independent performance review of ICCAT should include an assessment of the functioning of the SCRS and its working groups through a total quality management process, including an evaluation of the potential role of external reviews”.</p> <p>In recent years there have been several initiatives in accordance with Rec 11-17:</p> <ul style="list-style-type: none"> ▪ At the Third Joint Tuna RFMOs meeting (the ‘Kobe process’) it was recognized that Management Strategy Evaluation (MSE) needs to be widely applied in order to implement the Precautionary Approach for tuna fisheries management. Therefore a Joint MSE Technical Working Group was created to work electronically initially. The TWG had its first official meeting in Madrid from 1-3 November 2016. The TWG has previously reviewed the Kobe Advice Framework and the objectives of 		

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>
	<p>the meeting were to: (i) review current MSE practice; (ii) discuss progress on MSE; (iii) identify future actions focusing on areas of collaboration.</p> <ul style="list-style-type: none"> ▪ Joint Meeting of tuna RFMOs on the Implementation of the Ecosystem Approach to Fisheries Management, initiated by ICCAT and supported by the Common Oceans/ABNJ Tuna Project, which brought together scientists from the five t-RFMOs and national experts. The goals of the latter meeting were to (1) establish a sustained dialogue across t-RFMOs on the issues of EAF and its implementation, (2) understand common challenges in its implementation and (3) identify case specific solutions. A number of recommendations to the Commission were made as regards different issues covered during the meeting. ▪ A First Joint Tuna RFMO FAD Working Group meeting was held in 2016. Within these tasks are the development of a work plan to address research, data collection and analysis of FAD fisheries information, review and adoption of FAD related technical and legal definitions. To facilitate and accelerate the progress toward meeting SCRS and Commission objectives concerning the recommendations of the joint t-RFMO FAD meeting and the ICCAT FAD Working Group, the Coordinator of the Tropical Species suggested forming a "study group" to review and prioritize the recommendations, and prepare a work plan which would be presented to the Tropical Tuna Species Group and the SCRS in 2018. The study group would be open to interested stakeholders. It was also noted the importance of integrating not only the Tropical Tunas Species Group, but also the rapporteur of the Sharks Species Group, and the Conveners of the Sub-Committee on Ecosystems as important research and a new information have been presented from non-target species that interact with FAD fisheries. The study group would meet intersessional via remote communications (e.g. webinars, video conferencing). As mentioned above, in the final provisions of Rec [16-01] it is noted that the SCRS shall address to the extent possible the Recommendations made by the FAD Working Group. ▪ At the 2007 annual meeting, the Commission decided to proceed with the first external review of its performance, published in 2009 (ICCAT, 2009). At the 2015 annual meeting in Malta, ICCAT decided to address a new external review which was published in 2016 (ICCAT, 2016h). The team was coordinated by Mr. John Spencer (former head of delegation of the European Union in tuna RFMOs and other species) as an expert in fisheries management, and also included Mr. Jean-Jacques Maguire (an independent scientist with considerable experience in providing scientific advice and member of the 2008 Panel as a scientific expert) and Dr. Erik J. Molenaar (NILOS, University of Utrecht & JCLOS, UiT University of the Arctic of Norway) as a legal expert. <p>Based on the above the assessment team considers that the fishery-specific management system is subject to regular internal and occasional external review. SG80 is met.</p> <p>Despite recent efforts it cannot be argued that external reviews of the fishery-specific management system are regular. Therefore, SG100 is not met.</p>
References	ICCAT 2009, ICCAT 2016h, ICCAT 2018c
OVERALL PERFORMANCE INDICATOR SCORE:	
	90
CONDITION NUMBER (if relevant):	
	NA

APPENDIX 1.3. CONDITIONS

Condition 1

Performance Indicator	<p>PI 1.1.1 -Target species status (Yellowfin tuna): The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</p> <p>SI(b) The stock is at or fluctuating around a level consistent with MSY</p>
Score	70
Rationale	It is difficult to determine whether the stock is fluctuating around the level consistent with MSY, as so many different stock assessment methods are used. The general trend, however, indicates that the stock was estimated to be below the MSY level since 2001 and is now recovering towards the MSY level (ICCAT, 2006). However, the stock is not yet at a level consistent with MSY. SG80 is not met.
Condition	By the end of the certification period the target stock shall be at or fluctuating around its target reference point (B_{MSY}).
Milestones	<p>Considering that the SCRS has scheduled the next yellowfin stock assessment for 2021, it is likely that stock status will have been updated by the end of the certification period.</p> <ol style="list-style-type: none"> 1) Between the first and third surveillance audits, the client will present the CAB with evidence that data updates are carried out each year within the assessment body (led by the tropical tuna species group within the SCRS), and will provide proof that changes in the fishery, including shifts in relative abundance are monitored on a regular basis. 2) By the fourth surveillance audit/ re-certification, it is required that the client presents evidence that the yellowfin stock has fully recovered to target MSY levels. <p>These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score. By the fourth surveillance audit/ re-certification, the required minimum score is 80.</p>
Client action plan	<p>The client is promoting the development and implementation of stock management measures by ICCAT through the following channels:</p> <p>Participation in ISSF: since 2010 information has been sent to the representatives of the EU and Spain in the annual meetings of ICCAT alerting them of the management needs, such as:</p> <ul style="list-style-type: none"> • implementation of management measures specific to each tuna population accord with the scientific recommendations, • allocation of catch limits of YF by fishing gear and / or flag, • strengthening fisheries management to ensure compliance with catch limits. • request better management of FADs through compliance with requirements on non-entangling FADs and promote the use of biodegradable FADs, as well as address immediately the gaps that exist in the reporting of data from FADs. • strengthen monitoring and control systems such as ship monitoring systems (VMS). • Increase the coverage of observers on large-scale longline vessels and purse seiners to support data collection. <p>Starting on October 2018, the Company will send these demands in addition to the representatives of the EU and the Spanish Fisheries Authorities, as well as the representatives of the Government of Guatemala in those ICCAT meetings.</p> <p>Participation in OPAGAC: the company will continue with the collaboration through their partners (OPAGAC and ISSF), regarding management needs within ICCAT making them available to the representatives of the EU and Spain at ICCAT meetings.</p> <p>In the coming years, the Company will continue transmitting to the representatives of the Government of Guatemala at the ICCAT meetings (as of October 2018), the recommendations agreed upon in OPAGAC.</p>

	<p>Therefore, from Sant Yago Tuna Fisheries, N.V. and the Jealsa-Rianxeira group:</p> <ul style="list-style-type: none"> • Will continue to collaborate with our representatives in the ICCAT meetings (ISSF, OPAGAC) to transfer the MSC certification requirements related to Yellowfin stock status and the need for HCRs, so that they can ensure compliance with the plan. Work already established by the SCRS in this regard. • Will continue collaborating with the scientific teams of the ICCAT, providing them with information on both catches and sales to contribute to a better collection of data. • Will continue to have on-board observers who report information to AZTI and they prepare the reports that Dipasca sends to ICCAT. • Will continue to report the position of our vessels (VMS) to the Spanish fishing authorities as well as the state of the flag and the coastal states of which we have licenses, to promote transparency and information gathering. <p>The Company will report annually to BV all the actions carried out.</p>
<p>Consultation condition on</p>	<p>The SCRS Science Strategic Plan 2015-2020 set as a main goal the evaluation of precautionary management reference points and robust harvest control rules (HCRs) through management strategy evaluations (MSE). As a result, Rec 15-07 provided guidelines on the development of Harvest Control Rules and of Management Strategy Evaluation for each stock, inter alia, northern albacore, Bluefin tuna, North Atlantic swordfish, and tropical tunas. The SCRS initiated this commitment with northern albacore, through Recommendation 17-04, which sets out an explicit HCR for Albacore Tuna with pre-determined management responses to the status of the stock.</p> <p>The Commission requests to the SCRS related to MSE on tropical tunas are already explicit in [Rec. 16-01]. This includes to provide performance indicators for yellowfin, skipjack and bigeye tuna with the perspective to develop management strategy evaluations for tropical tunas. At the latest meeting of the SCRS held in Madrid between 2-6 October 2017, the tropical tuna species group discussed how the schedule for the development of MSE, which calls for the MSE results to be first available in 2020, relates to the current schedule of assessments for tropical tunas (2018 for bigeye, 2019 for skipjack and 2021 for yellowfin). The Committee noted that given the multi-species nature of the tropical tuna fishery, the MSE should take this into account. The Committee developed an initial schedule of activities to progress the MSE and the species rapporteurs agreed to develop a budget to be considered by the SCRS and incorporated into a comprehensive MSE budget for the SCRS (ICCAT 2017e).</p> <p>The track record therefore indicates that the on-going activities of the SCRS following the Commission mandate are already consistent with the achievement of this Condition. Further, it demonstrates that necessary progress to achieve conditions does not require any of the following: (i) extra investment of time or money of the SCRS or the Commission; (ii) changes to management arrangements or regulations; (iii) re-arrangements of research priorities by the SCRS or the Commission.</p> <p>Therefore, despite the condition is relying upon the involvement, funding and resources of the Commission, the CAB considers it achievable by the client and realistic in the period specified.</p>

Condition 2

<p>Performance Indicator</p>	<p>PI 1.2.2. -There are well defined and effective harvest control rules (HCRs) in place</p> <p>SI (a) Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.</p> <p>SI(c) Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</p>
<p>Score</p>	<p>65</p>
<p>Rationale</p>	<p>With the overage of catch in 2016, it is clear that the TAC is not monitored and the</p>

	<p>appropriate enforcement is not in place. There is no explicit allocation of yellowfin catch to ICCAT CPCs that would both reduce the likelihood of overages (by increasing accountability), and facilitate a strategy to respond in terms of subsequent catch restrictions. An full MSE has not been done for YFT, therefore well-defined HCRs are not in place that would ensure that the exploitation rate is reduced as the PRI is approached, therefore SG80 is not been met for SI(a).</p> <p>Available evidence clearly shows that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCR. However, there is no formula in place that would reduce the exploitation rate if the TAC was exceeded. Even though ICCAT has extensive experience in the implementation of TACs and limits on effort, and CPCs have previously proven the ability to implement catch limits and fishing effort, in this case there is no evidence that ICCAT reacted timeously to the overage. ICCAT Rec 2016-01 states that the Commission shall review the relevant conservation and management measures if the total catch exceeds the TAC for yellowfin tuna, but this has not as yet happened, therefore SG80 is not met for SI(c).</p>
Condition	<p>By the end of the certification period the fishery shall (i) have well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, and (ii) shall provide available evidence indicating that the tools in use are appropriate and effective in keeping the stock fluctuating around a target level consistent with (or above) MSY</p>
Milestones	<p>Recognizing that ICCAT is the body responsible for the development and implementation of control rules, to address the condition the assessment team requires the client to work with DIPESCA and with other appropriate groups to strongly encourage ICCAT to develop and implement control rules for Atlantic Yellowfin stock.</p> <ol style="list-style-type: none"> 1) At the first annual audit and at each subsequent surveillance audit until the adoption of control rules, the fishery client will submit evidence that it is working actively through DIPESCA and with other appropriate groups to promote the adoption by ICCAT of well-defined harvest control rules as well as to promote the development or adaptation of appropriate tools for Atlantic Yellowfin Tuna. This includes a summary of the actions taken by the client, the Guatemalan government, and other members of ICCAT to achieve this outcome. 2) Prior to recertification, the SG80 scoring requirements must be met in full for both scoring issues: (a) ICCAT must adopt explicit harvest control rules for the Atlantic Yellowfin Tuna stock, and, (c) ICCAT must have evidence that the tools are appropriate and effective in achieving the exploitation levels required under the harvest control rules for the Atlantic Yellowfin Tuna stock. The client will submit evidence that this is the case. At this point, the fishery should score at least 80 for PI 1.2.2. <p>On an annual basis, milestones would be the following:</p> <p><u>Year 1</u>: Discussions shall be held during 2019 ICCAT plenary sessions to adopt reference points for Atlantic yellowfin tuna</p> <p><u>Year 2</u>: MSE shall be started on the Atlantic Yellowfin tuna in 2020</p> <p><u>Year 3</u>: A set of harvest control rules shall be discussed during the 2021 plenary sessions and submitted to the Commission.</p> <p><u>Year 4</u>: The adopted set of HCRs will be incorporated into the fisheries management system in 2022.</p> <p>The two parts of this condition are strictly linked, even though the technical issues differ, a fully functioning harvest control rule requires appropriate tools to implement it. Thus, concurrent progress is expected so that this condition and milestones can be met. These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score for the complete indicator. By the fourth annual audit the required minimum score is 80 for PI 1.2.2.</p>
Client action plan	<p>The client is promoting the development and implementation of stock management measures by ICCAT through the following channels:</p> <p>Participation in ISSF: since 2010 information has been sent to the representatives of</p>

	<p>the EU and Spain in the annual meetings of ICCAT alerting them of the management needs, such as:</p> <ul style="list-style-type: none"> • implementation of management measures specific to each tuna population accord with the scientific recommendations, • allocation of catch limits of YF by fishing gear and / or flag, • strengthening fisheries management to ensure compliance with catch limits. • request better management of FADs through compliance with requirements on non-entangling FADs and promote the use of biodegradable FADs, as well as address immediately the gaps that exist in the reporting of data from FADs. • strengthen monitoring and control systems such as ship monitoring systems (VMS). • Increase the coverage of observers on large-scale longline vessels and purse seiners to support data collection. <p>Starting on October 2018, the Company will send these demands in addition to the representatives of the EU and the Spanish Fisheries Authorities, as well as the representatives of the Government of Guatemala in those ICCAT meetings.</p> <p>Participation in OPAGAC: the company will continue with the collaboration through their partners (OPAGAC and ISSF), regarding management needs within ICCAT making them available to the representatives of the EU and Spain at ICCAT meetings.</p> <p>In the coming years, the Company will continue transmitting to the representatives of the Government of Guatemala at the ICCAT meetings (as of October 2018), the recommendations agreed upon in OPAGAC.</p> <p>Therefore, from Sant Yago Tuna Fisheries, N.V. and the Jealsa-Rianxeira group:</p> <ul style="list-style-type: none"> • Will continue to collaborate with our representatives in the ICCAT meetings (ISSF, OPAGAC) to transfer the MSC certification requirements related to Yellowfin stock status and the need for HCRs, so that they can ensure compliance with the plan. Work already established by the SCRS in this regard. • Will continue collaborating with the scientific teams of the ICCAT, providing them with information on both catches and sales to contribute to a better collection of data. • Will continue to have on-board observers who report information to AZTI and they prepare the reports that Dipesca sends to ICCAT. • Will continue to report the position of our vessels (VMS) to the Spanish fishing authorities as well as the state of the flag and the coastal states of which we have licenses, to promote transparency and information gathering. <p>The Company will report annually to BV all the actions carried out.</p>
<p>Consultation condition on</p>	<p>The SCRS Science Strategic Plan 2015-2020 set as a main goal the evaluation of precautionary management reference points and robust harvest control rules (HCRs) through management strategy evaluations (MSE). As a result, Rec 15-07 provided guidelines on the development of Harvest Control Rules and of Management Strategy Evaluation for each stock, inter alia, northern albacore, Bluefin tuna, North Atlantic swordfish, and tropical tunas. The SCRS initiated this commitment with northern albacore, through Recommendation 17-04, which sets out an explicit HCR for Albacore Tuna with pre-determined management responses to the status of the stock.</p> <p>The Commission requests to the SCRS related to MSE on tropical tunas are already explicit in [Rec. 16-01]. This includes to provide performance indicators for yellowfin, skipjack and bigeye tuna with the perspective to develop management strategy evaluations for tropical tunas. At the latest meeting of the SCRS held in Madrid between 2-6 October 2017, the tropical tuna species group discussed how the schedule for the development of MSE, which calls for the MSE results to be first available in 2020, relates to the current schedule of assessments for tropical tunas (2018 for bigeye, 2019 for skipjack and 2021 for yellowfin). The Committee noted that given the multi-species nature of the tropical tuna fishery, the MSE should take this into account. The Committee developed an initial schedule of activities to progress the</p>

	<p>MSE and the species rapporteurs agreed to develop a budget to be considered by the SCRS and incorporated into a comprehensive MSE budget for the SCRS (ICCAT 2017).</p> <p>The track record therefore indicates that the on-going activities of the SCRS following the Commission mandate are already consistent with the achievement of this Condition. Further, it demonstrates that necessary progress to achieve conditions does not require any of the following: (i) extra investment of time or money of the SCRS or the Commission; (ii) changes to management arrangements or regulations; (iii) re-arrangements of research priorities by the SCRS or the Commission.</p> <p>Therefore, despite the condition is relying upon the involvement, funding and resources of the Commission, the CAB considers it achievable by the client and realistic in the period specified.</p>
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Condition 3

Performance Indicator	<p>PI 2.3.1 The UoA meets national and international requirements for the protection of ETP species. The UoA does not hinder recovery of ETP species</p> <p>SI(b) Direct effects, element: marine mammals</p>
Score	75
Rationale	<p>For the element marine mammals: In scoring Issue b the SG80 requires that the known direct effects of the UoA are highly likely to not hinder recovery of ETP species, in this case marine mammals and in particular large whales. The fishery does not meet the SG80 requirements because the interactions with whales, in particular large whales are avoidable by not setting on them. The fishery needs to address this issue, as 22 large whales were reported captured in FSC sets between 2014 and 2018 according to data collected by observers on board the UoC.</p>
Condition	<p>By the end of the certification period, the fishery must demonstrate that the direct effects of the UoA not hinder recovery of marine mammals, especially large whales.</p>
Milestones	<p>Year 1: The client provides evidence to the CAB that a company policy to address this issue has been developed.</p> <p>Year 2: The client provides evidence to the CAB that a company policy that prohibits setting a purse seine near or on whales, so as to reduce the capture of whales to near zero, has been adopted</p> <p>Year 3: The client shall demonstrate, based on observer data, that the whales are not being set on or captured, and if being captured accidentally revise the fishing tactics so as to reduce the capture to near zero. SG 80 would be met at this stage.</p>
Client action plan	<p>In order to achieve less or no interaction with whales, the Company will take the following steps:</p> <ul style="list-style-type: none"> • Ask AZTI about the implications in the data report to ICCAT of modifying our FAD-FREE protocol to consider whale sets as FADs (September 2018). • Once AZTI has confirmed that the data report to ICCAT would not be affected by the modification referred to in the previous point, it would proceed to: (i) modify our protocol and inform Sea Eye so that it can conveniently instruct its observers; (ii) the company would inform the coordinator of employers and captains of the company. • The coordinator will give clear instructions to the skippers and captains about how to proceed according to the new protocol and communicate to the crew of each vessel. (October 2018) • From October 2018 onwards, all sets in which there is interaction of whales will be considered sets on FADs and therefore will be outside the UoA of the MSC certification. <p>According to information from the fishing master, in 95% of the cases where there is a whale associated with tuna, this is perfectly visible, therefore, if we tighten our protocol we will avoid interaction with whales almost 100%</p> <p>An exhaustive analysis of fishing logbooks will be done at the end of each trip to check the level of interaction and see if it is necessary to implement more stringent measures</p>

	(October 2018). The Company will cross-check the information of the logbooks with the data of the observers for a greater security of the effectiveness of the measure. (Since October 2018 and every time we receive the reports). The Company will report annually to BV all the actions carried out, including the interactions reported by the observers.
Consultation condition	on FCR 7.11.3 is not applicable to this condition since actions considered to achieve it rely exclusively on the client's means

Condition 4

Performance Indicator	<p>PI 2.3.2. The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p> <p>SI(b) Management strategy in place (alternative) SI(c) Management strategy evaluation SI(d) Management strategy implementation</p>
Score	75
Rationale	<p>SI (b) The SG80 requirement states that There must be a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species, in this case for marine mammals, in particular large whales. However, as evidenced by the 22 interactions with large whales in the 2014-2017 observer data, the UoA does have an interaction problem that in total could hinder the recovery of large whales, in particular, and these interactions are most likely the result of whale sets that are intentional. So, while there are some measures in place, with regard to marine mammals, there is no strategy, because if there was, whale sets would be prohibited.</p> <p>SI(c) The SG80 requirement states that there must be an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved. With regard to marine mammals, as noted previously, the capture of 24 marine mammals, including 22 large whales, some of which are endangered, that could have been avoided, point out the lack of a strategy to reduce impacts of ETP marine mammals.</p> <p>SI (d) The SG80 requirement states that here must be some evidence that the measures/strategy is being implemented successfully. The fact that there were 22 large whales captured on the 2014-2017 period, and none in the 2017-2018 period suggests that the decision to set on or near large whales is purposely made, and can be easily remedied.</p>
Condition	By the end of the certification period, the fishery must develop, implement, and evaluate a strategy that ensure the UoA does not hinder recovery of marine mammals, in particular large whales
Milestones	<p>Year 1: The client shall provide the CAB with evidence that alternative options for a strategy to reduce interactions with large whales has been evaluated.</p> <p>Year 2: The client provide evidence that a strategy to reduce interactions with large whales has been implemented</p> <p>Year 3: The client shall provide the CAB with evidence that the success of that strategy to reduce interactions with large whales has been evaluated SG80 would be met at this stage.</p>
Client action plan	In order to achieve less or no interaction with whales, the Company will take the following steps:

	<ul style="list-style-type: none"> • Ask AZTI about the implications in the data report to ICCAT of modifying our FAD-FREE protocol to consider whale sets as FADs (September 2018). • Once AZTI has confirmed that the data report to ICCAT would not be affected by the modification referred to in the previous point, it would proceed to: (i) modify our protocol and inform Sea Eye so that it can conveniently instruct its observers; (ii) the company would inform the coordinator of employers and captains of the company. • The coordinator will give clear instructions to the skippers and captains about how to proceed according to the new protocol and communicate to the crew of each vessel. (October 2018) • From October 2018 onwards, all sets in which there is interaction of whales will be considered sets on FADs and therefore will be outside the UoA of the MSC certification. <p>According to information from the fishing master, in 95% of the cases where there is a whale associated with tuna, this is perfectly visible, therefore, if we tighten our protocol we will avoid interaction with whales almost 100%</p> <p>An exhaustive analysis of fishing logbooks will be done at the end of each trip to check the level of interaction and see if it is necessary to implement more stringent measures (October 2018).</p> <p>The Company will cross-check the information of the logbooks with the data of the observers for a greater security of the effectiveness of the measure. (Since October 2018 and every time we receive the reports).</p> <p>The Company will report annually to BV all the actions carried out, including the interactions reported by the observers.</p>
Consultation on condition	FCR 7.11.3 is not applicable to this condition since actions considered to achieve it rely exclusively on the client's means

Condition 5

Performance Indicator	<p>PI 2.3.3 Relevant information is collected to support the management of UoA impacts on ETP species, including:</p> <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and <p>Information to determine the outcome status of ETP species.</p> <p>SI(b) Information adequacy for a management strategy</p>
Score	65
Rationale	The SG80 requirements for SI (b) state that the information must be adequate to measure trends and support a strategy to manage impacts on ETP species. As noted previously in the justification for PI2.3.2 with regard to marine mammals, there is not a strategy for the UoA (FSC fishery), and this resulted in the interactions with 24 marine mammals (22 large whales) in the 2014-2016 period. And notable this was followed by no reported interactions in the 2017-2018 period. Interestingly in the most recent observer data (2017-2018) there is the report of a whale shark being taken, and as noted previously, sets on whale sharks are supposed to be included in FOB sets, and therefore not be included in this UoA/UoC. This confusion and possible contradictions in the available data indicates to the assessment team that the information is adequate to measure trends and support a strategy to manage impacts on ETP species, especially with respect marine mammals and sharks and rays.
Condition	By the end of the certification period, the fishery must develop an improved system for the collection and verification of observer data so that this information can be used to both develop a management strategy for ETP species, and to assess the effectiveness of the management strategy, and provide information to determine the outcome status of ETP species (in particular marine mammals and sharks)
Milestones	Year 1: The client shall provide the CAB with evidence that all historical observer data

	<p>for the last five years have been critically evaluated, and corrections made as required. Develop systems and guidelines for the collection, verification and presentation of all observer data in formats compatible with MSC catch analysis requirements for primary, secondary and ETP species (in particular marine mammals and sharks). Years 2-3: provide observer catch data to assessment team at annual surveillances in formats compatible with MSC catch analysis requirements for primary, secondary and ETP species (in particular marine mammals and sharks). SG80 would be met after third surveillance audit.</p>
Client action plan	<p>The Company will request the IEO (September 2018) to send the data collected during the period they were collaborating in a format so that the Company can process them within the same database that we use with the current observers (Sea Eye), in this way with all the grouped information we can get to a greater detail in the analysis and take appropriate measures to minimize the impact on non-target species such as sharks, turtles or rays.</p> <p>We will urge the observers of Sea Eye on the need to register adequately and at all times the interactions with the non-target species (October 2018)</p> <p>We will insist our employers and captains in the need to strictly and exhaustively apply the measures described by ISSF in their guide of good practices for the release of non-target species, in this way we will also minimize the impact on ETP species (October 2018)</p> <p>With the information collected in the fishing journals, the Company will analyse the interactions with ETP species to, if necessary, carry out measures aimed at minimizing the impact of our activity on them (from October 2018 and at the end of each tide)</p> <p>The Company will report annually to BV all the actions carried out.</p>
Consultation on condition	<p>FCR 7.11.3 is not applicable to this condition since actions considered to achieve it rely exclusively on the client's means</p>

Appendix 2. PEER REVIEW REPORTS

Fishery Assessment Details	
Fishery	SANT YAGO TF UNASSOCIATED PURSE SEINE ATLANTIC YELLOWFIN TUNA FISHERY
Peer Review College contact details	Dan Hoggarth
Peer Review Due Date	16/10/2018

PEER REVIEWER –A-

Summary of Peer Reviewer Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes and No	CAB Response
<p><u>Justification:</u></p> <p>My reservations concern mostly the form of the report, which I find poorly structured in places, with repetitions and confusion in scoring SI rationales. I agree with most of its conclusions apart from points of details. For Principle 1, the scoring and conditions have been harmonized with the only other fishery targeting YFT currently MSC certified, which confirms the scores. For Principle 2, my concerns come again from the wording of some PIs and SIs rationales, leading to 3 conditions, when I think that only 2 are justified. For Principle 3, again, a clearer systematic structure along the main jurisdictions involved (ICCAT, Flag state, Port states) would greatly improve the readability of the report. Scores will need to be recomputed once corrections have been made, but I do not think it would change the overall conclusion of the report.</p>		<p>Some modifications have been done in order to provide some clarifications were the PR-B considered it was needed. In response to a comment from the reviewer, PI2.4.2. SI(c) was rescored from 80 to 100, and therefore overall PI score moved from 80 to 85. No other change of score was considered necessary.</p> <p>The assessment team still considers it appropriate to establish a condition on 2.3.1 after reviewing peer reviewers comments (see response to PI2.3.1 for more details), although more information and considerations were added to the rationale provided for that PI.</p>

<p><i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i> <i>[Reference: FCR 7.11.1 and sub-clauses]</i></p>	<p>Yes</p>	<p>CAB Response</p>
<p><u>Justification:</u></p> <p>Five conditions are raised, two relate to the target stock and three relate to the fishery's impacts on marine mammals.</p> <p>Regarding the target species (YFT) stock status (1.1.1) and Harvest Control Rules (HCRs, 1.2.2), the conditions are clearly written. They have been harmonized with the US Longline fishery recent scope extension (MRAG Americas, 2018), which improve the scope for appropriate outcome within the specified time frame.</p> <p>Regarding the fishery's impacts on ETP species (marine mammals) outcome (2.3.1) Condition 3, as mentioned below, I feel that the scoring should be revise and the condition removed. Regarding precautionary management measures (2.3.2) and information (2.3.3), I find both to be justified and likely to achieve would achieve SG80 outcome within the certification cycle.</p>		<p>The assessment team still considers appropriate to establish a condition on 2.3.1 after reviewing peer reviewers comments (see response to PI2.3.1 for more details), although more information and considerations were added to the rationale provided for that PI.</p>

If included:

<p><i>Do you think the client action plan is sufficient to close the conditions raised?</i> <i>[Reference FCR 7.11.2-7.11.3 and sub-clauses]</i></p>	<p>Yes</p>	<p>CAB Response</p>
<p><u>Justification:</u></p> <p>Regarding the two conditions on YFT status (1.1.1) and Harvest Control Rules (1.2.2), the actions proposed through industry-NGO partners (ISSF and OPAGAC) to influence the Guatemala, EU, Spain and other states policies within ICCAT, and to collect information and collaborate with scientists will be very important. It is difficult to be certain of the time taken by an RFMO such as ICCAT, but similarly to the peer reviewer of the US LL fishery YFT extension report, I am reasonably confident that these conditions may be closed within the certification period.</p> <p>Regarding the conditions on P2.3 (ETP-marine mammals), they concern actions by each of the two vessels in this fishery. I am confident that the actions could be put in place by the 3rd annual surveillance audit as proposed.</p>		<p>No response from the CAB is needed</p>

Table 4 For reports using one of the default assessment trees:

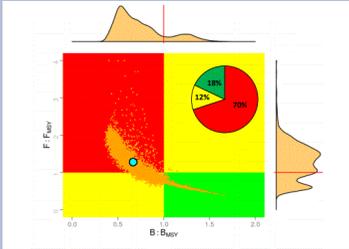
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1	Yes	No	<p>The UoA is very small but seemingly determined. It would also benefit from the support of the US LL MSC certified fishery at ICCAT</p> <p>A full analysis of the reason for the 2017 TAC overshoot and close scrutiny would be needed at each annual surveillance audit</p>	<p>“Likely” corresponds to the 70th percentile and “Highly likely” to the 80th (SA2.2.1.2), and the PRI is taken to be 0.5Bmsy. The Kobe Plot illustration used and information in the rationale for the next PI mention “a 68% probability that the stock would be above (B)msy in 2017”. For SI(a), we are asked to assume “that the estimates are approximately normally distributed (Medley, 2017)”, even though the distribution given alongside the Kobe plot for B/Bmsy is bimodal.</p> <p>The rationale needs to be clarified to show why it is “highly likely” that the current biomass is >0.5Bmsy as required to meet SG80.</p>	<p>It there is a 68% probability that the stock would be above the BMSY. According to Figure 3.7, none of the trajectories with 75th percentile show to be even close to 0.5BMSY. Further, management advice was based on the median (10th-90th percentiles) from the joint distribution of age-structured and production model bootstraps. Relative biomass $B_{2014}/BMSY=0.95$ (0.71-1.36), which indicates that there is only a 10% chance that the B2014 is below 0.71, which is well above 0.5BMSY, hence it is highly likely that the stock is above PRI at least with an 80% probability, therefore SG80 is reached</p> <p>The assessment team agrees with the reviewer that there is a bimodality, but given that the distribution alongside the Kobe plot shows that the probabilities on the right of the MSY level decreases according to the normality assumption, the reasoning by (Medley & Gascoigne, 2017) is valid.</p> <p>A clarification was added to the rational in the PRDR report.</p> <p>Even if the assumption of a normal distribution is not defensible, the fact that there is only a 10%</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					<p>chance that $B_{2014}/B_{MSY} < 0.71$, implies that there is even a less than 10% probability that the stock is below the PRI therefore supporting the score of SG80 ("highly likely" at the 80th).</p> <p>We agree that the reason for the 2017 overshoot should be investigated and we consider this to be one of the activities that is performed regularly at each surveillance audit.</p>
1.1.2	Yes	No	NA	SI(a): The stock projections used would need revising after the nearly 20% TAC overshoot of 2016. At the last assessment, the biomass was $< B_{msy}$ and the TAC was overshoot by a margin that may not allow rebuilding, for SI(b) it does not seem SG 80 is met.	<p>Considering the Joint Probability that $B > B_{MSY}$ catches of 130 000t over a few years would still rebuild the stock towards its MSY, albeit slower; to 72% by 2019. The maximum sustainable yield is estimated at 132 000t, which is around the overage of 2016.</p> <p>These scores were harmonised with the MSC FRD_Pelagic YFT_ALB scope extension.</p>
1.2.1	Yes	No	NA	SI(b): there is no reference for an evaluation, SG100 does not appear to be met. In addition, the TAC set is a key element of the Harvest Strategy. If it was overshoot in 2016, how can SG80 be met? The rationale needs to be more precise. Given the very low catch rate of 'unwanted'	SA2.4.1 states that "evaluated" at SG100 is to mean 'tested for robustness to uncertainty appropriate to the scale and intensity of the UoC'. Probabilistic projections of different catch levels (including a TAC of 110,000 t) have been conducted through simulation. The harvest strategy itself is not fully developed (for example it

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				target species, SI(f) probably should not be scored (GSA3.5.3).	<p>lacks pre-agreement on how to react to stock changes, which is addressed in PI 1.2.2), but in its present form it has been fully evaluated.</p> <p>Yes, the TAC has been overshot in 2016, but it is still below the MSY level. Also, considering that the average catch over the last 10 years was 106 000t and has only been overshot once during this time it would not be reasonable to deduce that the harvest strategy is not achieving its objective. We would only be able to come to that conclusion after the next stock assessment. At this stage, the overall health of the stock increased by 10% between 2010 and 2014. Even with a catch of approximately 128 000t, the probabilities indicate that there will be some growth in the stock.</p> <p>I do believe the SG 100 should remain, especially because it was harmonised with the MSC FRD_Pelagic YFT_ALB scope extension.</p> <p>We disagree with the comment regarding SI(f) because: (i) MSC does not establish a threshold of a minimum % of unwanted catches to dismiss this SI, and; (ii) the unwanted catches of tunas in purse seine fisheries is a relevant issue which has motivated the recent Rec 17-01 and also an internal policy adopted by the client.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.2	Yes	No	<p>The UoA is very small but seemingly determined.</p> <p>A full analysis of the reason for the 2017 TAC overshoot and close scrutiny would be needed at each annual surveillance audit</p>	<p>SI(b): the rationale seems to contradict previous information about "a major source of scientific uncertainty" linked to the two index clusters mentioned for 1.1.1 SI(a). How the HCR are likely to be robust to these needs some clear explanation.</p>	<p>SI(b) was scored 80</p> <p>The stock assessment scientists are fully aware of these somewhat contradictory CPUE series, hence the wide range of different models and sensitivities. This, however, is the reality with a lot of fisheries assessments, but there are ways to deal with these issues, which was done in their assessment approach.</p> <p>In this case, the major source of uncertainty was indeed dealt with by using different model approaches and conducting the analysis using both index clusters; also testing additional sensitivities. The probabilities of the consequences of various TAC's are based on the combinations of these results, as was explained in 1.1.1SI(a). It has also been shown that the stock improved by 10% over four years under this HCR, which by implication should be enough proof that the HCR is likely to be robust to the main uncertainties.</p>
1.2.3	Yes	No	NA	The last paragraph of the rationale for SI(a) relates to SI(b).	We agree with the reviewer, so the paragraph was deleted.
1.2.4	Yes	Yes	NA		No response from the CAB is needed

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.1	No	No	NA	<p>SI(a) - Scoring element <u>Bigeye tuna</u>: For this PI, "Highly likely" corresponds to 80% as for PI1.1.1 (SA2.2.1.2). Given the recent TAC overshoots and the stock biomass showing no definite evidence of recovery (1 run out of 3), it would be good to refer to the latest Bigeye tuna stock assessment report (2015), https://www.iccat.int/Documents/SCRS/DetRep/BET_ASS_ENG.pdf that presents the various model runs.</p> <p>As for the target species, it may be a stretch to assume anything is "highly likely" for the bigeye current biomass to be above PRI, as required to meet SG80.</p> <p>SI(b) <u>Minor species</u> - p.116 there is a confusion in text between "highly likely – 80%" and "high degree of uncertainty – 90% from SA3.2.3). For the species with estimated B/Bmsy ratio lower interval boundary close to 0.5 (Albacore stock S and Swordfish stock S) it could be best to use the second part of the SG100 to ascertain whether "If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species"</p>	<p>Response to SI(a).</p> <p>BV was guided by the latest assessment for the scoring of this issue and for this assessment the 2014 relative biomass was estimated using the combined results of non-equilibrium and statistical integrated assessment models. The numbers in brackets indicate 10 and 90% percentiles</p> <p>Relative Biomass (B_{2014}/B_{MSY}) = 0.67 (0.48-1.20)</p> <p>These are 90 percentiles, so we are sure that we can assume that at 80 percentile the biomass will be above $0.5B_{MSY}$, therefore it is indeed highly likely that BET is above the PRI.</p> <p>We are in agreement that the overshoot might hinder the recovery, but we are evaluating the status relative to the PRI, and considering the latest result, there is nothing to indicate that there is a 20% probability that the stock is below the PRI.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					 <p>Combined Kobe phase plot of non-equilibrium production model and integrated stock assessment model.</p> <p>Response to SI(b).</p> <p>The percentage in number was correctly stated (90%), the confusion pointed by the reviewer between 'highly likely' and 'high degree of certainty' was restricted to the text and it has been corrected.</p> <p>The assessment team has considered the comment made by the reviewer in relation to the South Atlantic albacore stock. The lowest range of the CI for B2015/BMSY is 0.52, but is an 80%CI, while MSC ask for 90% for a high degree of certainty. Therefore, the second part of the</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					<p>justification has been used for this stock. The score remains the same but modifications have been done in the rationale provided.</p> <p>In the case of the South Atlantic swordfish, the lowest range for B2015/BMSY is 0.53, but is a 95% CI. Therefore, the high degree of certainty is ensured. No changes to the rationale provided in the PRDR.</p>
2.1.2	Yes	No	NA	<p>For all SIs, the rationales need to be structured a bit more clearly between main and minor, and also systematically by stock element.</p> <p>SI(b)- It is not clear why information for the target species is given in the rational to support the SG60 being met.</p> <p>For <u>Bigeye</u> is SG80 really met for SI(c)? New measures discussed in the 2017 updated management advice need a mention.</p>	<p>Modifications have been done to the rationale of SI(a) and SI(a) in order to make more clear the segregation between the different subcomponents (main/minor) and elements (stocks). However, the team considers that there is no need to further clarifications regarding all the other SIs.</p> <p>The recovery of the Atlantic yellowfin tuna and also the East Atlantic and Mediterranean Bluefin tuna are used in SI(b)SG60 to provide examples that ICCAT has proven its capacity to manage to manage in tuna stocks sustainably.</p> <p>In relation to BET meeting SI(c) it is important to underline that this is P2 and therefore what is being assessed is whether the strategy <u>for the UoA</u></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					is being implemented. The rationale is focused on the implementation on the strategy for the UoA. Whether BET is above PRI has already been scored in SI(a).
2.1.3	Yes	Yes	NA		No response from the CAB is needed
2.2.1	Yes	Yes	NA		No response from the CAB is needed
2.2.2	Yes	No	NA	SI(c) – the rationale describes data collection instead of bycatch management measures. The specificity of free school sets should be mentioned if SG100 is to be met.	The assessment team disagrees with the reviewer's remark. SI(c) is about assessing whether there is evidence that the strategy for the UoA is being implemented. The fact that catch data is being collected is part of that evidence, but the rationale as presented in the PRDR analyses other evidence which are not restricted to data collection (e.g. annual report on small tunas prepared by the SCRS provide evidence that scientific monitoring is being done based on the data collected, AZTI annual assessment and declaration of conformities issued provide evidence that good practices on board (data collection, training, release maneuvers...)). The UoA is restricted to the FSC sets, FOB are

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					excluded. This has been made clear in several sections of the report. There is no need to refer the specificity of the FSC sets to score this SI. The assessment considers there is no need to modify the rationale provided at the PRDR
2.2.3	Yes	Yes	NA		No response from the CAB is needed
2.3.1	No	No	No, the condition relates to 2.3.2 (b) and 2.3.3 (b)	This PI is concerned with outcome, but the rationale regards information and management. SI(b)- The stock status and productivity of the species impacted need to be reviewed to clarify the scores for each element (sharks and rays, turtles, marine mammals), esp. for marine mammals, which may meet SG80.	The assessment team recognizes that this is an outcome PI, and has identified both the species and number of individuals taken by the UoA/UoC based on observer data in SIb. In all cases, the numbers of individuals taken are very small. In most cases, the stock status of the species taken is not known with any precision. The SIb justification has been revised to provide estimates of stock abundance for all species, where available, and to explicitly indicate that the stock abundance is unknown where there is no information available. The team believes that the impacts of this practice on whales in the eastern Atlantic do not meet the SG80 requirement for SIb: Known direct effects of the UoA are highly likely to not hinder recovery of ETP species. The SIb justification has been revised to better support the scoring. References to ICCAT

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					recommendations for management measures have been deleted.
2.3.2	Yes	Yes/No	Yes	Measures described under 2.3.1(b) should be indicated here. The rationale for SI(b) needs clarification in order to relate more clearly to the SG requirement, the condition is clearly written.	The measures mentioned in 2.3.1 SIb were deleted, however these measures were already described in the 2.3.2 SIb justification. The SIb justification was revised to more clearly relate to the SG requirement
2.3.3	Yes	Yes/No	Yes	Information available to support the strategy is mixed up with measures that belong to 2.3.2. The rationale for SI(b) needs clarification in order to relate more clearly to the SG requirement, the condition is clearly written.	The justification for 2.3.3 SIb has been revised to more clearly relate to the SG requirement .
2.4.1	Yes	No	NA	Evidence to score this PI should be the fishing areas, gear type and operations and habitats depths concerned, for similar tropical purse seine fisheries, SI(a) SG100 is met, SI(b) is not relevant and SI(c) SG100 is met.	The assessment team disagrees with PR comments regarding the scoring of 2.4.1. For SIa, the team does not agree that there is evidence 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. The team agrees that this is most likely the case, but we do not find the evidence to support the SG100 score. For SIb, the VME scoring issue, the assessment team agrees that the fishery does not interact with VME habitats. We have revised the

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					scoring to Not relevant. For SIc, the assessment team disagrees with the PR comment. The SG100 must be scored, and the team does not believe that there is evidence that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm. Therefore the SG100 is not met.
2.4.2	Yes	No	NA	The type of fishing gear and natural operation of the fleet mean that, although there is no specific strategy so SI(a) SG100 is not met, I would argue that all other SIs meet SG100	The assessment team disagrees with the PR comments on the SG100 scoring of SIs b and c, while score for SI c was revised. For SI b, there is no testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA, therefore only the SG80 is met. For SI c, there is not clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a), therefore the SG100 is not met. The scoring of SI d has been revised to 100, and justification has also been revised.. Overall the PI have been rescored.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.3	Yes	Yes	NA	The last paragraph of 2.4.3 SI(c) rationale relates to ecosystem and should be under 2.5.3	The assessment team agrees with PRA that the evidence in the last paragraph of PI2.4.3 SIc is important to the justification of PI2.5.3 SIe, however we also believe that it is also relevant to the justification for the SG100 score of PI2.4.3 SIc, so we have decided that it remain in this PI also.
2.5.1	Yes	Yes	NA		No response from the CAB is needed
2.5.2	Yes	Yes	NA		No response from the CAB is needed
2.5.3	Yes	Yes	NA	Some of the relevant information is given in the rationale for 2.4.3	The justification for SIe has been revised to include to paragraph from SIc of PI2.4.3.
3.1.1	Yes	Yes	NA		No response from the CAB is needed
3.1.2	Yes	Yes	NA	Typo: SI(a) SG80 is not met instead of SG100	The typo error has been corrected
3.1.3	Yes	Yes	NA		No response from the CAB is needed

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.1	Yes	Yes/No	NA	The Flag state commitment to ICCAT fishery-specific objectives needs a mention.	All ICCAT CPC (Guatemala being one of them) are bound to comply with ICCAT Recommendations. This has already been explained in detail section 3.5 of the PRDR. The assessment team does not consider necessary to repeat this fact. Relevant Guatemalan regulation for the assessed fishery are listed in section 3.5.1, but none of them are relevant for this SI.
3.2.2	Yes	Yes/No	NA	The Flag state and other stakeholders involved in the decision-making processes of ICCAT need a mention. Points in the rationale for SI(d) seem to alternate between SG100 is met and not met, even though SG100 is most likely met. SI(e) The Flag state dispute resolution mechanisms need a mention.	SI(d) . Precisely because there are some pros and cons, the assessment team included the following consideration to finish the rationale: "Despite the manner in which agreements are reached may not always be fully disclosed. Based on the information presented above the assessment team considers that SG60, SG80 and SG100 are met". Despite the limitations we consider that SG100 is met. SI(e) . A mention to the dispute resolution mechanism established in the Regulation from Guatemala has been included.
3.2.3	Yes	Yes	NA	The Flag state MCS system needs a mention also in SI(a) and (b).	The SI(a) rationale provided in the PRDR already included a description of the Flag state MSC system: "In the case of the assessed vessels logbook and VMS data are reported to DIPESCA in Guatemala. Logbook data are sent by the client to

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					<p><i>DIPESCA at the end of each fishing trip. Each year DIPESCA compile and analyse all annual data (including a crosscheck between logbook and VMS data) before reporting them to the ICCAT Secretariat in June. They also send two inspectors once a year to Abidjan to perform an on-site inspection of the vessels (they inspect several issues, including fishing gear, different records – logbooks, fish hold plans, etc.- and also safety issues). The report prepared by the DIPESCA inspectors as a result of the latest inspection performed in Abidjan before the site visit was handed to the assessment team for its assessment". The assessment team considers this to be a sufficient account, so no further modification of the rationale will be made. A mention detailing the sanctioning regime included in the Fisheries Law of Guatemala has been included in the rationales for SI(b)</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.4	Yes	Yes	NA	The Flag state Evaluation provisions need a mention, even though the score may remain the same.	The Flag state provisions in this respect are limited to the Guatemalan participation in the annual meeting of the Commission and the intersessional meetings of Panels I and IV (as stated in PI3.1.2SI(c)). The assessment team does not consider necessary to modify the rationale provided in the PRDR.

General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary) can be added below and on additional pages

There are quite a few typing errors, the report would benefit from an English spell-check.

CAB Response: The report has been revised to correct typing and grammatical errors.

PEER REVIEWER –B-

Summary of Peer Reviewer Opinion

<p><i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i></p>	<p>Yes/No No</p>	<p>CAB Response</p>
<p><u>Justification:</u></p> <p>Controversy</p> <p>The report supplies the following facts, that the total catch of just two Guatemalan ships in question is more or less equal the combined catch of at least ten African countries in whose EEZs the ships catch a major share of their catch. MSC does not explicitly address allocation issues but the standard for sustainability is sensitive to controversy and the sale of fishing licenses to foreign fleets are widely seen as enriching government officials and dispossessing West African fishing communities. An overwhelming proportion of the resource is extracted by and sold to the Global North. Other sources of controversy include setting on whales and employing unsustainable fishing practices albeit the client promised to reform.</p> <p>Data, Monitoring, Assessment, Management and Stakeholders</p> <p>Further, the proportion of the resource that is extracted by small scale African fisheries is likely undercounted by ICCAT - the international body that co-manages the resource. Since fisheries-dependent data are often the main source of information in stock assessments, ICCAT’s stock assessments should be treated with more caution than in the report; various studies warn of large uncertainties that have not yet been accounted for in ICCAT’s stock assessments. With respect to yellowfin, there are many data issues and instances of model disagreement. In such cases, reliability of stock assessment should be judged as low.</p> <p>Looking at the time series corresponding to African catches used in ICCAT stock assessment there are many blanks, many repeated numbers, and many sudden large and unexplained changes from one year to the next – all of these indicate issues with reporting as well as a lack of cooperation between ICCAT and scientists, managers and other stakeholders in Africa.</p> <p>According to ICCAT’s 2016 stock assessment data (Yellowfin catch, Table 4) in 2015:</p> <p>Morocco caught 72t, Mauritania – none, Senegal – 1888t, Gambia – none,</p>		<p>Controversy</p> <p>As the reviewer points out MSC does not explicitly address allocation/distribution of resources in relation to socio-economic parameters. So much so, that all figures related to the amount of money to be paid were crossed out from each of the bilateral fishing agreements before the assessment team could assess them. Those issues were not assessed, and under no circumstances could it have been otherwise. Neither the CAB could have requested access to that information nor the client would have to provide it. To our understanding this issue is out of the scope of the MSC fishery assessments, at least in the terms stated here by the reviewer. Of course, there are some P3-related SIs which are dealing with relevant issues such as the legal and customary framework, the consultation, roles and responsibilities, the decision-making processes... all those SIs have been thoughtfully assessed (the rationales for some of them have been modified to provide responses to some of the reviewer comments). For instance, the CAB refers to the response provided to PI3.1.1.SI(c) ‘Respects for rights’ since it may be useful here.</p> <p>The ‘issue of setting on whales and employing unsustainable fishing practices’ is not further developed anywhere throughout the reviewer report. Since the reference to these matters has not been further developed by the reviewer, the CAB cannot offer a more detailed answer either (apart from what it has already been presented and assessed in the PRDR).</p> <p><u>Data, Monitoring, Assessment, Management and Stakeholders</u></p> <p>Despite the level of report from some of the Western African countries may need to be improved in some cases, the situation shall be judged in a wider context since these are highly migratory stocks which are being fished by many different fleets in many different countries on both sides of the North and South Atlantic. As explained in the CAB responses to PI1.2.3, 3.1.2 and 3.2.3 in any of these extremely large fisheries you would have some inaccuracy in reporting, especially from the smaller countries and fisheries, but these uncertainties are known and can be treated as such in the modelling approach and also taken into consideration when designing and adopting management measures.</p> <p>There are about a 100 flags that have either been fishing in the past or currently fishing for YFT and most of those taking large amounts are reporting their catches and also catch-effort indices (the compliance on reporting</p>

Cape Verde – 5665t (estimated, the reported value is blank)
 Guinea-Bissau – none,
 Guinea – none,
 Sierra Leone – none,
 Liberia – none,
 Ivory Coast – 2776t,
 Ghana – 15950t
 Togo – none,
 Benin – none,
 Nigeria – none,
 Cameroon – none,
 Sao Tome – 301t,
 Equatorial Guinea – 1896t (estimated, the reported value is blank)
 Gabon – none,
 Congo – none,
 DRC – none,
 Angola – 244t (estimated, the reported value is blank),
 Namibia – 7t (estimated, the reported value is blank),
 SA – 709t (estimated, the reported value is blank).

By comparison, ICCAT reports foreign vessels catching 80829t of yellowfin tuna in 2015, a sizable proportion of which is taken within the African EEZs.

All of the African countries above have coastal communities relying on fisheries in the Atlantic. For example, Nigeria with a population of nearly 200 million, considers yellowfin as not only traditional but also a commercial species. Yet according to ICCAT, the entire history of Nigerian yellowfin catches is: 12t in 2010, 3t in 2011, and 1t in 2012; Nigeria appears to have caught nothing in previous or subsequent years.

Small scale fishermen are known to capture yellowfin, bigeye and skipjack tunas using vessels as small as canoes. Given the current and growing number of such fishermen in the African countries mentioned above, the total removals are underestimated by ICCAT and this represents a large unknown in estimating population trends and reference points as well as managing the stock.

Not just data, but knowledge from Africa is missing in the international management system: African scientists are rarely referenced within ICCAT's research, scientists from sub-Saharan Africa are nearly absent from the modelling groups and rarely co-author stock assessments.

Repeating the pattern of marginalisation, the voices of stakeholders from Africa were not represented in the report. The CAB did not follow the MSC guidelines on stakeholder engagement making insufficient effort to engage the stakeholders from Africa who could be meaningfully informative about P3; because they had not been involved in the preparation of the report, according to the MSC rules they would now be prevented from raising objections, which is unfair.

ICCAT has many challenges in co-managing stocks present in African EEZs, the TAC for Yellowfin has

Task I and Task II data can be easily assessed using the ICCAT Secretariat reports included in the biennial reports), so relatively speaking the reporting is not as severe as made out by the reviewer. For instance, in the latest annual report prepared by Gabon to ICCAT they clearly state that "*Tuna fishing activities are carried out only by vessels flying foreign flags fishing under a fishing agreement*" (in ICCAT 2017c). According to the assessment team, the weight given by the reviewer to the gap on the data coming from African fisheries is overrated, and in any case it does not undermine the validity of the results from the stock assessment performed by the SCRS, the effectiveness of the ICCAT data reporting system (PI 3.1.2) or the fishery-specific MCS system assessed in PI 3.2.3 (see below the different CAB responses to the comments of the reviewer on the scoring of the different PIs for more details).

In relation to the claim that knowledge from Africa is missing in the international management system and that no African scientists participated in the YFT stock assessment:

- Appendix 2 of the Report of the 2016 ICCAT YFT tuna stock assessment meeting details the list of participants. The following scientists from the West Africa coastal countries participated: Justin Monin Amandè (Ivory Coast), Sylvia Sefakor Awo Ayivi (Angola), Cheikh Baye (Mauritania), and Olavio Anibal (Sao Tomé & Príncipe).

- Another example of the participation of African scientists can be found at the report from the meeting of the Standing Committee on Research & Statistics (SCRS) (ICCAT 2017f) held in Madrid between 2-6 October 2017. This report details that 23 CPCs attended to the 2017 meeting, including: Angola (7 representatives), Côte d'Ivoire (1 representative), Liberia (1 representative), Mauritania (1 representative), Sao Tomé & Príncipe (1 representative), and Senegal (3 representative). The aim of the SCRS is to develop and recommend to the Commission policies and procedures in the collection, compilation, analysis and dissemination of fishery statistics to ensure that the Commission has available at all times complete, current and equivalent statistics on fishery activities in the Convention area.

It is indeed true that sub-saharan African scientists are scarce compare to those from European Union, EEUU or Japan, but they do exist and participate in the SCRS meetings and Working Groups (as demonstrated above). Dr. Monin Justin Amandè has been cited in the report, and he belongs to the Centre de Recherches Océanologiques (CRO) based in Abidjan (Ivory Coast). Dr. Amandè is also the rapporteur for the Skipjack tuna section in the 2017 SCRS report. The CRO, and Dr. Amandè in particular has also been in charge of training the Sea Eye observers.

The CAB elaborated a comprehensive list of stakeholders which included relevant tuna fishers representatives, Guatemalan and Spanish fishing

recently been exceeded and area-time closure was found not to be impactful, the overall observer coverage is very low and when it exists, the quality of the data and consistency of reporting are wanting.

As a neat illustration of issues with data reporting, Guatemalan catch (2015) mentioned in this report (4733t) is significantly higher than the corresponding value used in the ICCAT stock assessment that (3590t).

Considerations regarding **controversy** on their own should prevent this fishery from receiving the MSC certification at this time, but a precautionary and practical approach to the management system would result in scores too low to pass the assessment.

More details in the specific comments on the scoring are below.

authorities, ICCAT Secretariat, the SCRS, the ICCAT tropical tunas panel, the ICCAT COC, scientific bodies and observer agency (AZTI, IEO, Sea Eye) and different NGOs (NAMMCO, ISSF, Greenpeace, Birdlife International, Oceana, Bloom, World Wise Foods). The reviewer is right pointing that the African countries were not contacted directly (although they are represented at ICCAT, which was included in the list). However, these CPCs are reporting to ICCAT on an annual basis on the tuna fisheries happening in their waters, and all those reports are public through the ICCAT website and they had been consulted during the assessment. Also, the proceeding from the annual meeting of the Commission and all the related meetings are available at the ICCAT website. In summary, there is plenty of documentation that allows the assessment team to get to know concerns from these African countries in relation to this fishery.

There is no doubt that the recent catch overate of tropical tunas and the difficulties to assess whether the area-time closure to FADs in the Gulf of Guinee is working are two of the challenges to be faced by ICCAT when managing tropical tunas fisheries (there are many others). But ICCAT has the means to do it, its structure involves a multi-stakeholder process which is continuously monitoring, evaluating and improving relevant issues such as data reporting, stock assessments and management measures adopted. In the assessment team's opinion (and after having assessed the fishery against the MSC standard), the existing problems, limitations and challenges do not invalidate ICCAT's management of this fishery (and also the high level of reporting and transparency demonstrated by the client's fleet).

In relation to this matter, it is striking that the reviewer does not provide any evidence to support his/her judgment on the coverage of observers and the quality of the information collected as part of these observer programs.

The assessed vessels, and also the whole Spanish fleet of tuna purse seiners, and all the purse-seine and longline fleets of companies participating in ISSF have a 100% observer coverage (human or electronic). Further, the aforementioned fleets: (i) are recording extra information to comply with the requirements of good practices of the ISSF (PVR Register and ISSF Conservation measures) and the AENOR standard (in the case of the Spanish fleet); (ii) observers coverage and information is being checked vessel by vessel by a third party as part of the audits to ensure compliance with these standards (MRAG America reviews compliance with the requirements of the PVR Register, and AZTI supervises compliance with the requirements of the AENOR standard). To our understanding observer data collected on board the assessed vessels is comprehensive and of good quality (although it is likely to be improved in certain aspects as reflected in the Conditions relating to P2). Observer data has been widely used throughout this assessment, in particular in

relation to P2, and it is significant to verify that just a single comment regarding P2 (on BET stock status, PI2.1.1) was made by this reviewer.

The reviewer raises that catches of YFT from the two vessels in 2015 are significantly higher than those used by ICCAT at the stock assessment, and therefore this is considered as “as a neat illustration of issues with data reporting”. However, there is a reasonable explanation for the difference, which only 11% and not 32% as it will be demonstrated in the next two bullets below:

1) The reviewer forgot to mention a decisive detail: in that stock assessment report catches for 2015 were estimated for all those CPCs which did not reported catches for 2015 prior to the meeting (held in June 2016). In those cases the 2015 were estimated as an average of the last 3 years. This is clearly stated at the heading of Table 4 of the report of the 2016 ICCAT yellowfin tuna stock assessment meeting (ICCAT 2016b), where catches of YFT from 1950-2015 for many different countries are presented. It is also very easy to identify that Guatemala is one of the many countries for which catches for 2015 were estimated (they are shaded in yellow in the table). The final YFT catches reported by Guatemala in 2015 can be found in table 8 of ICCAT 2017d. A total of 5,200t of YFT were reported by Guatemala that year, while the figure shown in this report is 4,733t. Therefore, catches shown in table 3-4 are 11% lower than those reported by Guatemala in 2015 (and not 32% higher as claimed by the reviewer).

2) Catches shown in **table 3-4** of the current report are based on the logbooks from the two assessed vessels (as indicated in the heading of the table and in the text). However, since catches at the logbooks are estimated, DIPESCA compares between different sources of information when preparing the annual report to the ICCAT Secretariat (more details on this issue are described in section 3.1.2 of the report). The different sources of information are: logbooks, landing declarations, and annual report prepared by the Jealsa-Rianxeira Group accounting for all final figures of processed and wet weight per species (this last source of information was not mentioned in the PRDR, so it has been included now). It is based on all these documents that DIPESCA prepares an annual report of tuna catches from Guatemala to ICCAT. The assessment acknowledges that this was fully explained in the PRDR and modifications have been done in different background sections (3.1.2, 3.5.2 and 3.5.5) and scoring tables (PI3.1.2 and 3.2.3) to provide the necessary details on this relevant issue.

Further, it is important to underline that all participating companies in ISSF are being quarterly reporting all their tuna purchases to the competent RFMO scientific bodies (ISSF conservation measure 2.2). In the case of the assessed fishery this allows the ICCAT Secretariat to use data sent by all these companies to crosscheck data sent by the CPCs if needed. This is important because catches recorded in the logbooks and during the

offloading operations to reefers and/or containers are providing estimated weights, while weight recorded at the entrance of the processing plants and the productions figures allow to obtain a more accurate picture. The SCRS has used this data in the past to crosscheck Task I data in conflicting situations, for instance it was used to check and improve catch data from Ghana (Victor Restrepo –ISSF-, pers. comm). Many of the most important processors, traders, importers, transporters, marketers and others involved in the tuna industry worldwide are participating companies in ISSF, therefore the impact of this measure is expected to be considerable. However, ISSF is currently working on improving standardisation of data reported by the different companies to facilitate the task of the ICCAT Secretariat (the body in charge of receiving all data). Since Jealsa-Rianxeira joined ISSF in 2012, they have been reporting these data since then (and compliance has been audited since then –audit reports are available at the ISSF website and also at the Jealsa website). Therefore, the ICCAT Secretariat has all the necessary information to crosscheck the information sent by Guatemala against the data reported by the processing plants that purchased those catches. In the case of Guatemala this crosscheck is very easy to be performed since: (i) there are no other vessels flying the flag from Guatemala and targeting tropical tunas within the ICCAT management area; (ii) the entire catch of these vessels is purchased by the Jealsa-Rianxeira Group.

Finally, it is very significant that the reviewer decides to conclude this summary stating that: *“Considerations regarding **controversy** ON THEIR OWN should prevent this fishery from receiving the MSC certification at this time (...).”* As explained above, the considerations expressed by the reviewer under the ‘Controversy’ title are based solely on questioning (from a socio-economic point of view) the distribution of resources between the Global North and the African countries. Beyond that the reviewer (in this particular section) does not try to substantiate other considerations. However, as explained above, those socio-economic considerations are beyond the scope of the MSC-fishery standard (actually they cannot be assessed using this standard). **We are clearly surprised that the reviewer can express such a severe and definitive conclusion based on judgments which are clearly out of the scope of the MSC-fishery standard.** The assessment team profoundly disagrees with the final consideration expressed by the reviewer in relation to preventing this fishery to get the MSC certificate. Some rationales and also section 3.2.5 (from the background part of the report) have been modified in order to provide more insight on certain issues raised by the client, but none of the scores have been reviewed.

More details in the CAB responses provided to the specific peer reviewer comments on the scoring are below.

<p>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</p> <p>[Reference: FCR 7.11.1 and sub-clauses]</p>	<p>Yes/No</p> <p>Yes</p>	<p>CAB Response</p>
<p><u>Justification:</u></p> <p>Condition 1 basically requires that the next stock assessment shows convincingly that the stock is around MSY, since the client only controls a small share of the catch there is not much the client can do in practice to influence the state of the stock.</p> <p>Condition 2 requires MSE, limit reference points to be defined and HCR to be adopted and effectively implemented. Again, other than advocacy there is little a client can do about this.</p> <p>Condition 3 is a promise of no more setting on whales, starting now (October 2018) and a less harmful use of FADs. This is entirely within the client's remit however next to impossible to verify compliance.</p> <p>Condition 4 is more or less the same as Condition 3.</p> <p>Condition 5 is about improving reliability and detail of observer data. This condition could in theory be tightened to introduce additional evidence such as photographs or live video, however it is almost impossible to eliminate a possibility that interactions with mammals might be misreported.</p>		<p>Conditions 1 & 2</p> <p>We agree with the reviewer in relation to Condition 1 and 2. However, the CAB has presented a more detailed analysis of the situation and its potential implications in Appendix 1.3 of the PRDR (Tables for Conditions 1 & 2, under 'Consultation on condition'). The conclusion of that analysis is presented below: " (...) <i>The track record therefore indicates that the on-going activities of the SCRS following the Commission mandate are already consistent with the achievement of this Condition. Further, it demonstrates that necessary progress to achieve conditions does not require any of the following: (i) extra investment of time or money of the SCRS or the Commission; (ii) changes to management arrangements or regulations; (iii) re-arrangements of research priorities by the SCRS or the Commission.</i></p> <p><i>Therefore, despite the condition is relying upon the involvement, funding and resources of the Commission, the CAB considers it achievable by the client and realistic in the period specified".</i></p> <p>Conditions 3 & 4</p> <p>There is no mention of a less harmful use of FADs in any of conditions since sets on FADs are not included in the UoA.</p> <p>The reviewer declares that it would be impossible to verify compliance with the milestones established for these two conditions. WE totally disagree with this conclusion and we believe is by no means substantiated. It is easy to understand that since the assessed vessels have a 100% observer coverage it will not be difficult at all to verify if the client fulfils the commitments acquired. Again, we remind that these vessels are included in the ISSF PVR register (one of the requirements is to have a 100% observer coverage). MRAG is auditing the vessels to check compliance with the PVR requirements (and also the Jealsa-Rianxeira Group for compliance with ISSF Conservation Measures, being one of them to ensure that companies are not purchasing tuna from vessels which do not have 100% observer coverage). Also, AZTI (as part of the audit for compliance with the AENOR standard) verifies on an annual basis observer data from these two vessels to ensure that the code of good practices is being implemented (also 100% observer coverage is among the requirements). Finally, if the fishery gets the MSC certificate progress towards closing the conditions will be audited on a year basis as part of the surveillance audits...having all this in mind, we ask ourselves what reasons the reviewer can have to determine (without giving any further explanation) that: <i>"This is entirely within the client's remit however next to impossible to verify</i></p>

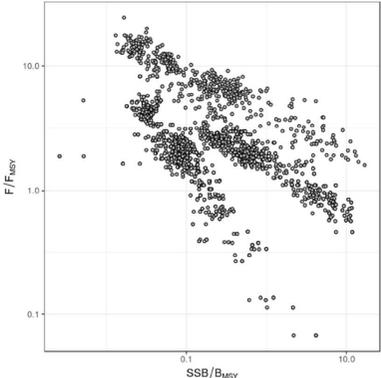
	<p><i>compliance</i>".</p> <p>Condition 5</p> <p>Observers are already being taking pictures and videos of the releasing manoeuvres of turtles, sharks and cetaceans. However, it seems that the reviewer did not grasp this condition since it is aimed at reviewing the historical series of observer data in order to ensure consistency despite the recent change in the company running the observer programme.</p> <p>Again, the final comment made by the reviewer: "it is almost impossible to eliminate a possibility that interactions with mammals might be misreported". It is disparaging the work of the observers on board the assessed vessels, the existing standards, and the potential assessment done CABs in future surveillance audits if the fishery gets certified.</p>
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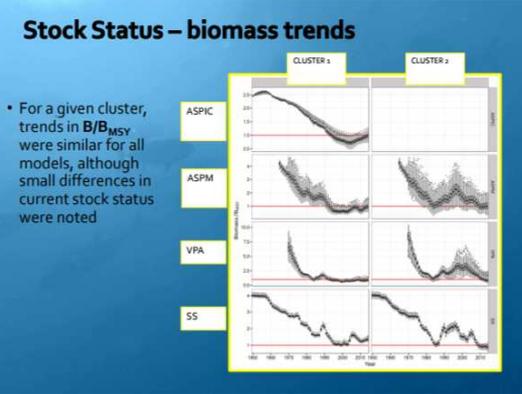
If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i> <i>[Reference FCR 7.11.2-7.11.3 and sub-clauses]</i>	Yes/No Yes	CAB Response
<p><u>Justification:</u></p> <p>There is little the client can do about the stock in general or its management system other than advocacy at ICCAT's meetings. Other promises are reasonable but it will be difficult to verify if they had been kept.</p>		<p>We basically agree with the reviewer in relation to Conditions 1&2.</p> <p>On the other hand, the following comment made by the reviewer is not clear and it is by no means substantiated: "<i>Other promises are reasonable but it will be difficult to verify if they had been kept</i>". Although is not clear, it seems that he/she is referring to the client action plan included as part of the Condition 3, 4 and 5. If that is the case, then we make the same considerations as above (see CAB response for Conditions 3 & 4 in previous table).</p>

Table 5 For reports using one of the default assessment trees:

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
1.1.1	No	No	Yes	<p>The certifier concluded that 'It is highly likely that the stock is above the PRI' which implies that issue a is met at SG 80 however this does not take into account all available information and this conclusion is based on aggregated results from conflicting models, taking ICCAT's report at face value, despite the known issues surrounding stock assessments. Given the disagreements between the different assessment models and known issues with the data this is overoptimistic, issue a should only get 60. For instance, imputation studies have shown that the probability that this stock is below PRI (50% of B_MSY) is much higher than assumed in the report, see the figure reproduced below from a 2017 study by Thomas Carruthers, Laurence Kell, and Carlos Palma, titled Accounting for uncertainty due to data processing in virtual population analysis using Bayesian multiple imputation, in the Canadian Journal of Fisheries and Aquatic Sciences. The study is</p>	<p>The assessor is indeed guided by the assessment reports issued by the competent RFMO as it has been done in all MSC fishery assessments of highly migratory species, and by doing it this way CABs ensure that they are considering all the available information and the aggregated results, since RFMOs are the only organizations capable to compile and assess all the necessary information in these complex fisheries contexts."</p> <p>The stock assessment reports provide a detailed account of how the stock assessments are performed: information considered, models used, uncertainties considered and how they have been taken into account. It is not just the final results that are taken into account. There is an insight in the process, and this is actually assessed as part of the P11.2.3 (information used) and 1.2.4 (adequacy of the stock assessment).</p> <p>The certifier is taking the assessment at face value as this is the information that was prepared by the scientific committee by stock assessment experts. It is not the assessment teams place to second guess</p>

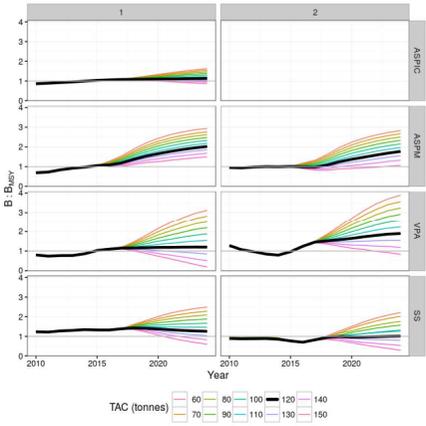
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>based on the same stock assessment model as ICCAT but accounts for the sources of uncertainty that ICCAT's stock assessment ignored.</p> <p style="text-align: center;">Canadian Journal of Fisheries and Aquatic Sciences</p>  <p style="text-align: center;">Figure 6. Plot of spawning stock biomass and fishing mortality rate relative to MSY levels (B/B_{MSY}, F/F_{MSY} respectively) for Atlantic yellowfin tuna.</p>	<p>the work that was done by a qualified team.</p> <p>The rationale and conclusion is based on the results of various models; testing uncertainty in the CPUE by using two index clusters and testing various sensitivities. The assessment team does not agree with the peer reviewer's statement that there are disagreements between the different model results, except for the expected, hence the reason for using different model approaches. According to the public information, there is no known <u>serious</u> issue with the data, except for the normal issue with conducting a stock assessment, hence there is no evidence that the results are overoptimistic. The assessors are guided by available information, in this case, publications prepared by the Standing Committee on Research and Statistics of ICCAT. It is indeed very normal to have different results by using different model approaches and assumptions. Judging visually the slide below indicates that there are NOT severe disagreements between the different models.</p>

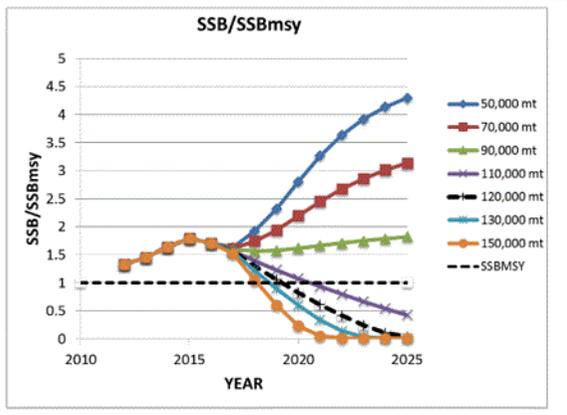
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					<p>Stock Status – biomass trends</p>  <p>• For a given cluster, trends in B/B_{MSY} were similar for all models, although small differences in current stock status were noted</p> <p>The study the reviewer refers to is only dealing with the VPA model approach, which is one of the four approaches used for fisheries management, therefore it is unrealistic to use this information alone to score this PI.</p> <p>Also, for the VPA study, it is obvious that the more sensitivities are included in an assessment the wider the confidence intervals are likely to be.</p> <p>Some of the statements made by the reviewer are not supported with relevant documentation and CABs <u>do not</u> use personal interpretation and</p>

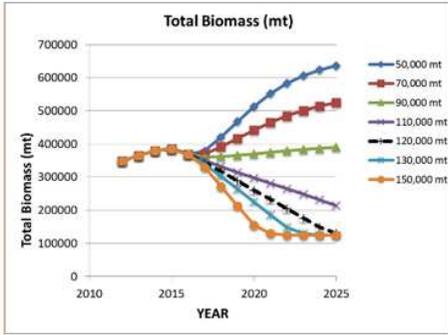
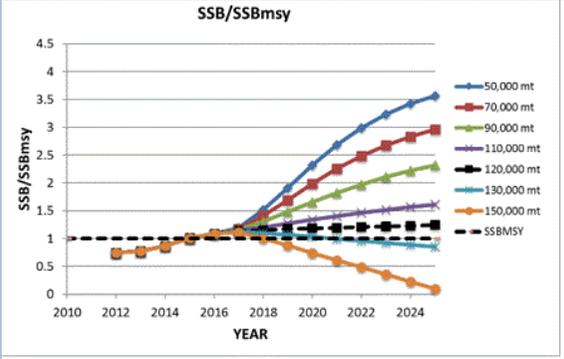
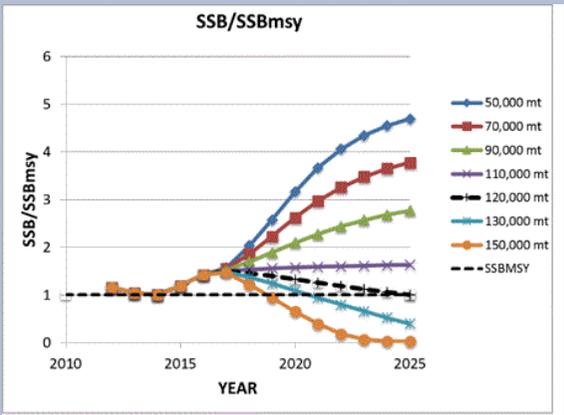
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					<p>assumptions as justification for scoring a particular PI.</p> <p>This stock was estimated to be at $0.95B_{MSY}$.</p> <p>Management advice was based on the median (10th-90th percentiles) from the joint distribution of age-structured and production model bootstraps.</p> <p>Relative biomass $B_{2014}/B_{MSY}=0.95$ (0.71-1.36)</p> <p>There is only a 10% probability that the stock is below $0.7B_{MSY}$, therefore considering the normality on the left side of the probability curve depicted alongside the Kobe plot we can safely assume the same for $0.5B_{MSY}$, which makes it highly likely that the stock is above the PRI.</p> <p>In addition, this PI was harmonised with the MSC FRD_Pelagic YFT_ALB scope extension and the ISSF publication by Medley and Gascoigne (2017) was also taken into consideration. We believe that our score is based on solid research and references and therefore it is justified to be at SG80.</p> <p>The only reason this PI did not reach SG100 is because 95% confidence intervals are not available from the stock assessments results and therefore we have nothing to base it on. .</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
1.1.2	No	No	NA	<p>The certifier is being overoptimistic selectively relying on projections that ICCAT themselves say are doubtful: both TAC and other FAD related conservation measures that ICCAT has in place have been shown to be ineffectual, 2016 stock assessment. There are concerns over increases in catchability (especially on juveniles) due to FADs and other changes in fishing methods, these impacts are expected to worsen due to continued expansion and innovation, with the deleterious consequences for the reliability of the CPUE standardization procedures and hence stock assessments and management. Further, ICCAT's data used in stock assessment may significantly underestimate the catches not just for African fisheries but for EU and other foreign fleets (SCRS/2018/136; Miguel Herrera and José Carlos Báez). All this makes stock rebuilding uncertain.</p> <p>Issue a is met at SG 100 only if using ICCAT's report without known caveats, whereas even ICCAT in 2017 cautioned: 'As the</p>	<p>The certifier is using the results that ICCAT uses as management advise. As with most assessments there will be uncertainties, therefore a range of models are used using different assumption and testing various sensitivities. The fact that there are concerns about various input parameters is not only the norm in most stock assessment, but that is why probabilities are included in the results and the certifiers have to evaluate the assessment results and not second guess the assessment.</p> <p>Further, the assessor does not consider whether there are problems with the input data (especially unsubstantiated claims), certainly not under this PI. The assessment team is guided by the information provided by the scientific body and as I mentioned before, the stock assessment models are there to guide us with scoring, just like they are used to provide management advice. The assessors are aware that there are certain problems and uncertainties involved in most stock assessment. There is no perfect stock assessment.</p> <p>The assessors have no evidence to revise the score for SI(a) down. It is assumed that the "known" caveats are included in the advice, which is normally</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>actual 2016 catches exceeded the values assumed for projections and the TAC, the percentages above (and in YFT-Table 2), are likely to be optimistic.' Issue a should be revised down.</p> <p>For issue b, the report uses Kobe matrices from 2011 vs 2016 as evidence of stock rebuilding to support the conclusion that SG80 is met, yet the latest ICCAT assessment has half of the models estimating that the stock had actually declined between 2010 and 2014 so there is hardly convincing evidence of a successful rebuilding strategy from previous years of management and so SG80 is not met:</p>	<p>the case with management advice. The reviewer does not support his/her reasoning with sufficient justification that can be supported by references and hence a lot of these comments are invalid.</p> <p>Again for issue b, the results used for management advice in ICCAT have been used, which included confidence intervals. The graph depicted here is not very useful as it has no confidence intervals, neither can one just read off this graph to come to a conclusion. This is even less convincing evidence that the strategy is not working.</p> <p>The reviewer is clearly not following the final and overall results of the stock assessments and management advice as these arguments and the reasonings are mostly unsubstantiated, hence not valid.</p> <p>The stock is slightly overfished and overfishing is not occurring as it was clearly set out in the rational. Probabilistic projection under various TAC scenarios were tested and used for management advice, therefore the reviewers comments are completely unfounded and biased.</p> <p>The assessment team has in various places</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p style="text-align: right;">EXECUTIVE SUMMARY YFT</p>  <p>YFT-Figure 11. Median B/B_{MSY} (2010 – 2024) for projections of constant TACs of 60,000 to 150,000 t. SS, VPA and ASPM projections applied an assumed catch of 110,337 (2015 estimate with carry-overs) to 2015 and 2016, prior to the application of the constant TACs of 60,000 to 150,000 t in 2017-2024. Due to a software constraint, ASPM projections applied constant TACs beginning in 2015.</p> <p>In general, the report claims that the average value being close to MSY state is strong evidence of the stock being rebuilt but having two contradictory historical trends one showing that a stock has declined from 2010 and the other showing that it has rebound cannot amount to</p>	<p>acknowledged that there was an overage in 2016, and the MSC assessment was penalised for it elsewhere.</p> <p>The assessors have read the new VPA assessment paper, as suggested by the reviewer, and the scenario of the here depicted figure (Biomass vs Ref point) actually estimated the current stock status to be $1.5B_{MSY}$, which would mean that the stock is under exploited and needs to be fished down for optimum utilisation. The reviewer seems to be unfamiliar with stock assessments. Indeed if the scenario below was to be taken as the only outcome, the rebuilding PI would have not been scored at all, as according to this, the stock is away above the MSY level and been so for the last few years.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>'strong evidence'.</p> <p>There have not been other simulations yet (e.g. MSE) showing that the strategy is working, and stock projections are also not unanimous about the future trend even if the current TAC will be implemented which is far from assured given the lack of controls in the fishery.</p> <p>Under the current TAC (110000t, purple trajectory in the figure below) revised stock projections show a decline in biomass, and these results have not yet factored in the higher than expected catches of 2016.</p>	 <p>All the other scenarios (See below) show an increase in biomass under the current TAC.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>SCRS/2016/207 </p> <p>     </p>  <p>The aggregated results that are used to inform the scoring were based on a report that contained a modelling error in the VPA analysis, it has since been corrected in the paper from which the graph above is reproduced: 'During the 2016 ICCAT yellowfin tuna stock assessment workshop, the group noted a diagnostic problem pertaining to the VPA. In certain years,</p>	 

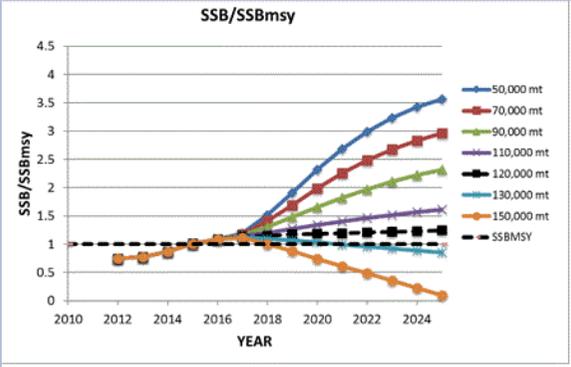
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>deterministic and median estimates were not located near the center of their 80% confidence intervals, indicating a significant skew in estimates of one or more parameters (e.g. F, SSB, SSBmsy and Fmsy) during those years. This behavior was corrected, and revised runs were included in the report of the assessment. Regrettably, after publication of the report the group discovered an error. Examination revealed that an earlier, untested version of VPA-2BOX was inadvertently used for the revised models, resulting in aberrant estimates of spawning biomass, total biomass etcetera.'</p> <p>Further, given the evidence that ICCAT's current measures such as TAC and area closures suffer implementation problems, a conclusion 'that it is highly likely that they will be able to rebuild the stock within the specified timeframe' cannot be supported.</p> <p>P1.1.2 should be 60.</p>	<p>Actually in none of these figures the VPA results show that the stock is currently overfished</p> <p>In addition, advice for YFT in ICCAT, is not based on the VPA results alone, but all converged model results are included. The results on which management advice is based are presented in a combined form, all models being weighted equally, which is the norm if no alternative information is available.</p> <p>The assessors have evaluated all the literature that is freely available and considering that there was already a 78% probability that the stock is above MSY in 2018, there is absolutely no evidence to support that the shortest practicable rebuilding timeframe is not specified which does not exceed one generation time for the stock, as it is supposed to be rebuilt already according to all the information available, therefore the assessors do not agree with the SG60 score, but the score should remain at SG100.</p> <p>Also, the fact that the reviewer chose the only scenario which shows that the stock will go down under the current TAC, reflects the biased with which the reviewer is interpreting the results.</p>

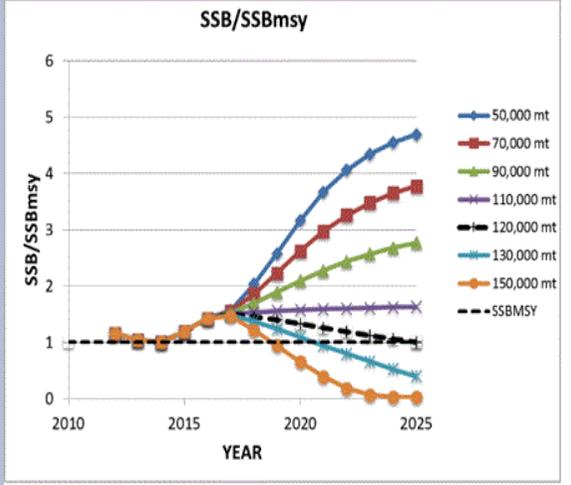
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					The reviewer states that the fact that the “given evidence that ICCAT’s current measures such as TAC and area closures suffer implementation problems” should influence the score, but this should not be considered under this PI. Also, area closures are not part of any modelling approach, therefore using this as evidence for the stock to be unable to rebuild just does not make any sense.
1.2.1	No	No	NA	There is evidence that the measures are ineffective. TAC is not implemented or enforced, assessment is conflicted, monitoring problematic, space time closure in the Gulf of Guinea is seen as a failure, overall observer coverage is low, small scale fisheries and IUU fishing far from under control: ‘...catch controls, while intended to ensure that overall fishing mortalities are not exceeded, have failed to maintain catches at the desired level because some ICCAT CPCs have exceed targets on a regular basis or were not covered by the measures.’ (SCRS/2018/116; Rishi Sharma and Miguel Herrera). There are calls for	There is evidence that the TAC was overshoot in 2016, but there is certainly no evidence that measures are ineffective, as the stock has grown by 10% from 2010 to 2014. The reviewer claims that “based on the facts that the data are incomplete, conflicted and biased, that the models disagree about whether the current TAC is capable of rebuilding the stock to PI 1.1.1”, which is however not substantiated and can therefore not be used as reasoning for a lower score, especially for a score that is lower than SG60 and therefore failing this fishery. Failing a fishery where most of the elements required, (although not perfect) in terms of data collection, scientific monitoring and management advice, as well as where the

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>alternative harvest strategies, such as effort controls, precisely because the current ones have been shown to be lacking in efficacy.</p> <p>Issue a at SG 60 requires that 'The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80' based on the facts that the data are incomplete, conflicted and biased, that the models disagree about whether the current TAC is capable of rebuilding the stock to PI 1.1.1 SG80, and even if it were the case that the current TAC would rebuild the stock, ICCAT's ability to ensure that no more than 110000t are caught is in doubt, so SG 60 is likely not met.</p> <p>Given uncertainty resulting from conflicting models in the quoted stock assessment report regarding whether the stock was driven up or down by the past measures it is difficult to assert that 'The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards</p>	<p>estimated biomass is close to the biomass at MSY is not aligned with MSC principles.</p> <p>The reviewer is clearly stressing the shortcomings and failures of the ICCAT management. However, that is not the only side of the story. It is important to remind that this scoring is based on public documentation, including peer-reviewed scientific report, and that it has been harmonised with the US North Atlantic swordfish fishery, which has recently extended the scope to include also yellowfin and albacore. The reviewers of that assessment agreed with the scores as so does the other reviewer of this assessment.</p> <p>The average catches for yellowfin over the last 10 years (including 2016) are 106 000 tonnes, therefore the statement that ICCATs inability to ensure an overage is a bit too early to judge as this happened only one year, certainly no reason to downgrade the fishery at this stage, but of course this issue needs to be flagged.</p> <p>The reviewer is completely ignoring the formal ICCAT results, which clearly indicate a growth of 10% in the stock from 2010 to 2014. Second guessing the scientific committee is completely</p>

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				<p>achieving stock management objectives reflected in PI 1.1.1 SG80.' So, it is even more difficult in my opinion to argue that the SG80 is met, which the report considers to be the case.</p> <p>For issue b, the report argues that 'The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.' meeting an SG100. Using the same evidence and reasoning as above (data quality and quantity, conflicting modelling projections using the current HCR of constant TAC, and poor implementation of management measures) it is doubtful that even SG 60, 'The harvest strategy is likely to work based on prior experience or plausible argument.', is warranted.</p>	<p>uncalled for, as it is a group of highly qualified scientists that have come up with these results.</p> <p>In relation to SI(b)Our scores is based on the facts summarised below:</p> <p>Stock assessments for yellowfin for the re-evaluation of management performance are every 4-5 years. However, recommendations on the multi-annual conservation and management programme for tropical tunas are evaluated annually. For yellowfin tuna a TAC of 110 000 tonnes per annum is set for the fishery since 2012 (Rec 15-01, (ICCAT, 2015a)). Since then the YFT resource has been recovering towards the MSY level.</p> <p>The management quantities estimated in the 2011 YFT stock assessment (ICCAT, 2012) were the following:</p> <p>$B_{2010}/B_{MSY}=0.85(0.61-1.12)$</p> <p>$F_{2010}/F_{MSY}=0.87(0.68-1.4)$</p> <p>The latest stock assessment of YFT was performed in 2016 (ICCAT, 2016b) and estimated the state of the resource in 2014.</p>

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					<p>$B_{2014}/B_{MSY}=0.95$ (0.71-1.36)</p> <p>$F_{2014}/F_{MSY}=0.77$ (0.53-1.05)</p> <p>The overall health of the stock increased by approximately 10%; the stock status increased by 10% and the fishing pressure decreased by that amount. This indicates that the strategy is likely to work (SG60 is met), and evidence exists that the harvest strategy is achieving its objectives, therefore SG80 is achieved. Further, probabilistic projections have been modelled to test the harvest strategy (A TAC of 110 000t), therefore the performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives. The improvement of the stock size and the lower fishing mortality show that, once the biomass is at MSY level, this harvest strategy is clearly able to maintain stocks at target levels. SG 100 is met.</p>
1.2.2	No	No	Yes	I disagree with the conclusion of the CAB that the rule TAC = 110 000 tonnes is robust to the main uncertainties (issue b, score 80): for instance VPA projections with 110 000 tonnes show both biomass and SSB	<p>Please note that this fishery was already penalised for not having a well defined HCR in place under PI 1.2.2 (a) with a score of SG 60.</p> <p>As mentioned above the reviewer is interpreting</p>

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				<p>declining (see the figure in PI 1.1.2 from SCRS/2016/207) and in the main stock assessment report (SS model) we find this note: 'in a projection context, depending on the cluster used, catches greater than 110-120 Kt (Cluster 2) would keep the stock below SSB_MSY -- and that is from a scenario that assumed a much lower catch for 2016 than was recorded subsequently, so updated, it is likely to be even more pessimistic regarding the robustness of the current TAC (2016 stock assessment).</p> <p>Further, the MSC guidance for scoring this issue asks to consider the following: 'In scoring issue (b), teams must assess how well the HCRs are likely to function when the unexpected happens in the future. The scoring guideposts reflect the degree of confidence there is in the HCR performance in relation to risks, caused by both known and unknown factors. Known factors include observation and process errors which are often accounted for in stock assessments. Unknown factors may include unpredictable effects from climate,</p>	<p>the stock assessment results wrongly and then limits the arguments on these wrongly interpreted VPA results. Also, the reviewer seems to have a difficulty to understand that the stock assessment tests the TAC against the main uncertainties, hence the probabilistic projections.</p> <p>Below find a repeat of the VPA figures that the reviewer bases his/her arguments on.</p> 

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>environmental or anthropogenic non-fishery related factors, which could, for example, lead to periods of low recruitment or growth, high natural mortality or migration. These and other changes to the population dynamics may not have been fully accounted for in the stock assessment or projections. Another important reason why there may be limited confidence in a HCR is where it has not been fully agreed by stakeholders, and it is uncertain whether the fishing community will comply with the HCR. This last issue is important to ensure HCRs are not only theoretical rules on paper, but are actually applied in practice.'</p> <p>The team has not presented evidence that the HCR was tested with respect to uncertainties mentioned in the guidance. The team writes: 'It [the HCR] was tested considering various sensitivities.' but does not elaborate. The presumed HCR, the TAC 110000t will cause the stock to decline below MSY level according to both SS and VPA models under the base case scenarios. Further sensitivity tests would likely reveal</p>	<p>SSB/SSBmsy</p>  <p>Also, note here the underexploited current biomass level.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response																																													
				<p>greater risks.</p> <p>Finally, the TAC is not partitioned into quotas for all of the stakeholders and hence the lack of implementation is likely to remain an issue for the foreseeable future.</p> <p>Therefore, issue b 'The HCRs are likely to be robust to the main uncertainties' should not be considered as met.</p>	<p>CAB Response</p> <div> <table border="1"> <caption>Estimated data from SSB/SSBmsy graph</caption> <thead> <tr> <th>Year</th> <th>50,000 mt</th> <th>70,000 mt</th> <th>90,000 mt</th> <th>110,000 mt</th> <th>120,000 mt</th> <th>130,000 mt</th> <th>150,000 mt</th> <th>SSBMSY</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td>1.3</td> <td>1.3</td> <td>1.3</td> <td>1.3</td> <td>1.3</td> <td>1.3</td> <td>1.3</td> <td>1.0</td> </tr> <tr> <td>2015</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.0</td> </tr> <tr> <td>2020</td> <td>3.0</td> <td>2.5</td> <td>1.8</td> <td>1.5</td> <td>1.2</td> <td>1.0</td> <td>0.7</td> <td>1.0</td> </tr> <tr> <td>2025</td> <td>4.3</td> <td>3.2</td> <td>1.8</td> <td>1.0</td> <td>0.5</td> <td>0.3</td> <td>0.2</td> <td>1.0</td> </tr> </tbody> </table> </div> <p>Please note the estimated current stock status in the above figure.</p> <p>The statement by the reviewer below is simply not true.</p> <p>“The presumed HCR, the TAC 110000t will cause the stock to decline below MSY level according to both SS and VPA models under the base case scenarios.”</p> <p>The reviewer simply does not consider any optimistic scenarios and that is not how stock assessment or fisheries management works. The CAB has justified a</p>	Year	50,000 mt	70,000 mt	90,000 mt	110,000 mt	120,000 mt	130,000 mt	150,000 mt	SSBMSY	2010	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.0	2015	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.0	2020	3.0	2.5	1.8	1.5	1.2	1.0	0.7	1.0	2025	4.3	3.2	1.8	1.0	0.5	0.3	0.2	1.0
Year	50,000 mt	70,000 mt	90,000 mt	110,000 mt	120,000 mt	130,000 mt	150,000 mt	SSBMSY																																										
2010	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.0																																										
2015	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.0																																										
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					score at SG80, but not SG100, which is on the conservative side.
1.2.3	No	No	NA	<p>PI 1.1.1 got a score of 70 largely because of the problems with inputs according to the report, so for consistency P.1.2.3 issue a should not meet SG80 guidepost because SA2.6.2 MSC guidance states:</p> <p>'Teams shall interpret "sufficient information" at the SG80 level to mean that all information required to implement the harvest strategy is available at a quality and quantity necessary to demonstrate achievement of the SG80 outcome PI 1.1.1.'</p> <p>On issues b and c the MSC guidance reads:</p> <p>'Scoring issue (b) relates to fishery removals specifically by those vessels covered under the unit of assessment which need to be regularly monitored and have a level of accuracy and coverage consistent with the harvest control rule.</p> <p>The reference to 'other' fishery removals in</p>	<p>The score of 70 for PI 1.1.1, is not due to the problems of input, but output in the case of PI 1.1.1 a. The assessment results are not presenting 95% confidence intervals, only the 90%, therefore SG100 could not be scored, simply because the output information was not available. SG 80 was however met.</p> <p>With PI 1.1.1 b, the score SG 80 was not achieved due to the fact that the stock is not around the MSY level and not because of the problems of inputs, as the reviewer deceptively claims.</p> <p>A modification to the rationales of SI(a) & SI (b) was done in order to account for the commitment adopted by the participating companies in ISSF towards providing the competent RFMOs scientific bodies (in this case the SCRS) detailed information on their tuna purchases (ISSF conservation measure 2.2). In the case of the assessed fishery this allows the ICCAT Secretariat to use data sent by all these companies to crosscheck data sent by the CPCs if</p>

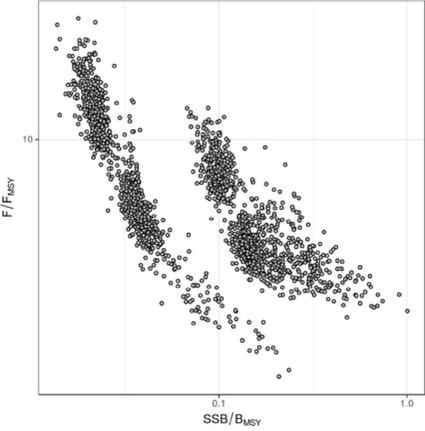
Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>scoring issue (c) relates to vessels outside or not covered by the unit of assessment. These require good information but not necessarily to the same level of accuracy or coverage as that covered by the second scoring issue.'</p> <p>CPUE indices are divided into two clusters because of uncertainty and they give contradictory information with respect to the current HCR and its future effects. Also, given that even the catch from the two Guatemalan flag carrying vessels being assessed was misreported to ICCAT (e.g. the Guatemalan catch (2015) mentioned in this report as 4733t is significantly higher than the corresponding value used in the ICCAT stock assessment that is 3590t) and that the data on the African catches is largely missing, issues b and c are not met at the SG 80 level.</p> <p>According to ICCAT's 2016 stock assessment data (Yellowfin catch, Table 4) in 2015: Morocco caught 72t, Mauritania – none,</p>	<p>needed. This is important because catches recorded in the logbooks and during the offloading operations to reefers and/or containers are providing estimated weights, while weight recorded at the entrance of the processing plants and the productions figures allow to obtain a more accurate picture. This is also ensuring that ICCAT can cross-check catches reported by the CPCs against the data provided by the processors and distributors.</p> <p>There is certainly sufficient relevant information related to stock structure, stock productivity, fleet composition and other data to use four different stock assessment models and to test various assumptions and to indices clusters, all of these together to support a harvest strategy as was illustrated in the justifications of the SG80 score.</p> <p>The fishery was indeed penalised for some of the inconsistencies in the data, therefore the score was not SG100.</p> <p>The point of the inconsistencies in the CPUE index clusters has been discussed elsewhere above, but it is certainly not unusual to have inconsistencies in some data, that is what stock assesment models are for; to test these inconsistencies to evaluate the</p>

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				<p>Senegal – 1888t, Gambia – none, Cape Verde – 5665t (estimated, the reported value is blank) Guinea-Bissau – none, Guinea – none, Sierra Leone – none, Liberia – none, Ivory Coast – 2776t, Ghana – 15950t Togo – none, Benin – none, Nigeria – none, Cameroon – none, Sao Tome – 301t, Equatorial Guinea – 1896t (estimated, the reported value is blank) Gabon – none, Congo – none, DRC – none, Angola – 244t (estimated, the reported value is blank), Namibia – 7t (estimated, the reported value is blank), SA – 709t (estimated, the reported value is</p>	<p>sensitivity to the results and eventual fisheries management.</p> <p>As was described in the text the stock abundance and removals are regularly monitored. The uncertainties in the data are known as the reviewer indicated in his/her reasoning, therefore they can be treated as such in the modeling approach. In any of these extremely large fisheries you would have some inaccuracy in reporting, especially from the smaller countries and fisheries, but these problems are known.</p> <p>I am unclear about what the reviewer is trying to argue by listing the catches of these flags, some of these are not even on the ICCAT database viz. Mauritanita, Senegal, Gambia, Guinea-Bissau, Guinea etc. There are about a 100 flags that have either been fishing in the past or currently fishing for YFT and most of those taking large amounts are reporting their catches, so relatively speaking the reporting is not as severe as made out by the reviewer. For instance, in the latest annual report prepared by Gabon to ICCAT they clearly state that “<i>Tuna fishing activities are carried out only by vessels flying foreign flags fishing under a fishing agreement</i>” (in ICCAT</p>

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				<p>blank).</p> <p>In addition, other research suggests problems with both effort and catch data, for example:</p> <p><i>'...in the Atlantic Ocean the catches of yellowfin and bigeye tunas seem to be also underestimated, although in this case underestimation of both large and small fish seem to be responsible for this. [...] estimate catches may be subject to large bias which, if confirmed, could have consequences on the statistics, stock assessments, management advice, and management measures adopted by ICCAT and IOTC.'</i> (SCRS/2018/136; Miguel Herrera and José Carlos Báez).</p>	<p>2017c). To our understanding this information can warrant the downscoring of issues b and c to SG60, as issue b is already penalised by not reaching SG100.</p> <p>The UoA has a 100% observer coverage, therefore their removals are certainly known at this stage. As explained in the CAB response to the "Summary of the Peer Reviewer Opinion" the difference alleged by the reviewer between the YFT catches reported in 2015 by the two vessels and the data reported by Guatemala to ICCAT is not such.</p> <p>This also agrees with the harmonisation that has been done extensively, therefore the scores should remain as is.</p>
1.2.4	No	No	NA	<p>Issue c SG 80 asks that the major sources of uncertainty are identified and taken into account in stock assessment.</p> <p>Major sources of uncertainty that have been identified have not yet been taken into account and thus the SG80 is not met</p>	<p>A stock assessment model is a tool that collates all the available data and with the guidance of some assumption is using the CPUE index to make sense out of all the given information.</p> <p>In this case four different model approaches have been used, with two different CPUE index clusters</p>

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				<p>for issue c. These unaccounted for major sources of uncertainty include: missing data and uncertain catches, data processing, CPUE standardisation and the ability of this methodology to keep up with the changes in fishing methods (FADs and reallocation of longline effort), unresolved uncertainty about growth resulting in conflict with data, especially the absence of larger fish, uncertainty about plausibility of different models and indices (currently the same weighting is assigned), and climate change.</p> <p>The report also considers that issue d is met at SG100 ('The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.') As mentioned earlier, the 2016 assessment missed a serious modelling error in its VPA so even on the level of 'do the models work correctly' it can't be said to have met SG 100 standard.</p> <p>Further, there are major sources of uncertainty which have not yet been</p>	<p>and these uncertainties have been taking into account.</p> <p>The reviewer should read the assessment paper, which shows that alone for the ASPM model 17 different sensitivities were evaluated using both the index clusters. These assessments are repeated every four years and new sensitivities would be evaluated. Data and CPUE indices are regularly updated and improved.</p> <p>Of course more sensitivity tests can always be done, but for this assessment they used four different models, alternative hypotheses (different CPUEs) and investigated numerous biological assumption; for example, different values of natural mortality and steepness. Further, different CAA matrices were tested. The results are presented in a probabilistic way, as shown by the Kobe plot. Management advice is based on the median (10th-90th percentiles) from the joint distribution of age-structured and production model bootstraps. Projections under different catch strategies are presented in a probability matrix.</p>

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				<p>explored, let alone rigorously; or when some, for example, the data processing, have been explored these results are not yet included in the stock assessment or the uncertainty accounted for in the decision-making.</p>	<p>The reviewer should take into consideration that the different uncertainties in a model not necessarily make a huge difference to the end result.</p> <p>The updated VPA model showed more optimistic results than the first assessment and anyway this argument can't be used as a justification to down score this issue.</p> <p>The certifier is unable to see what kind of assessment the reviewer would expect to be done in order to qualify at an SG100 level. From experience it can be said that under the circumstances and considering resources, this assessment is thorough and deserves the highest score. It is definitely above the standard.</p>

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2.1.1	No	No	NA	<p>Canadian Journal of Fisheries and Aquatic Sciences</p>  <p>Figure 5. Plot of spawning stock biomass and fishing mortality rate relative to MSY levels (B/B_{MSY}, F/F_{MSY} respectively) for Atlantic bigeye tuna.</p> <p>When the uncertainties in the data processing, are accounted for the risk that Atlantic bigeye tuna is below PRI rises, see Figure 5 from this paper reproduced above which shows a high probability of being below 10% SSB_{MSY}, and hence the</p>	<p>The figure depicted by the reviewer is using only the VPA analyses, even though ICCAT bases its advice on several modelling approaches, not including the VPA results.</p> <p>Please note this comment from the BET assessment 2015</p> <p><i>“Although VPA models also account for changes in selectivity, given that VPA results were uncertain in regards to absolute size of the stock and showed convergence problems, the VPA model results were not used to develop the management advice.”</i></p> <p>It is completely biased to use the VPA results as the only approach to assess the status of the fishery as it was clearly found to not be suitable for management advice.</p> <p>The assessment team was guided by the latest ICCAT assessment for the scoring of this issue and for this assessment the 2014 relative biomass was estimated using the combined results of non-equilibrium and statistical integrated assessment models. The numbers in brackets indicate 10 and 90% percentiles</p>

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				<p>respective scoring element might not be met at SG80 or even SG60.</p> <p>From this scientific study it is evident that 'likely' is not met for bigeye, as there is greater than 30% (the MSC cut off point for 'likely') that the species is below the PRI defined as 50% of SSB at MSY level.</p> <p>'Expected' in the definition for the guidepost is also in doubt, according to the most recent projections (SCRS-2018-162) even TAC as low as 35000t will only result in 1 in 4 chances (25%) that the SSB will be rebuilt to the level of MSY, so recovery and rebuilding of bigeye cannot be expected.</p> <p>Referring to: 'Main primary species are likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI. the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding'</p>	<p>Relative Biomass (B_{2014}/B_{MSY}) = 0.67 (0.48-1.20)</p> <p>These are 90 percentiles, so be assuming a normal distribution, it can be deduced that at the 80 percentile (which would be much narrower, indicating a value higher than 0.48) the biomass will be above $0.5B_{MSY}$, therefore it is indeed highly likely that BET is above the PRI.</p>

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2.1.2	Yes	Yes	NA		No response from the CAB is needed
2.1.3	Yes	Yes	NA		No response from the CAB is needed
2.2.1	Yes	Yes	NA		No response from the CAB is needed
2.2.2	Yes	Yes	NA		No response from the CAB is needed
2.2.3	Yes	Yes	NA		No response from the CAB is needed
2.3.1	Yes	Yes	Yes		No response from the CAB is needed
2.3.2	Yes	Yes	Yes		No response from the CAB is needed
2.3.3	Yes	Yes	Yes		No response from the CAB is needed
2.4.1	Yes	Yes	NA		No response from the CAB is needed
2.4.2	Yes	Yes	NA		No response from the CAB is needed
2.4.3	Yes	Yes	NA		No response from the CAB is needed

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
2.5.1	Yes	Yes	NA		No response from the CAB is needed
2.5.2	Yes	Yes	NA		No response from the CAB is needed
2.5.3	Yes	Yes	NA		No response from the CAB is needed

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
3.1.1	No	No	NA	<p>Issue a at SG80 requires that there is 'effective cooperation', it is not met.</p> <p>According to the MSC guidance on this issue:</p> <p>'SA4.3.2.3 Cooperation shall at least deliver the intent of UNFSA Article 10 paragraphs relating to: </p> <ul style="list-style-type: none"> a. The collection and sharing of scientific data, b. The scientific assessment of stock status, and c. Development of scientific advice ' <p>There is evidence of a lack of effective cooperation between the nation states in those EEZs the fishery takes place and the international management body, ICCAT. This evidence includes, the predominance</p>	<p>SI(a)</p> <p>All nation states in those EEZs the fishery takes place are Contracting Parties (CPCs) of ICCAT (see table 3-22). Besides, all of them (Angola, Cabo Verde, Côte d'Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea Conakry, Liberia, Mauritania, Sao Tome & Principe, Senegal, Sierra Leone) with the only exception of Guinea Bissau are members of Panel 1 (on tropical tunas) (ICCAT 2017f). Actually, this Panel is currently being chaired by Côte d'Ivoire.</p> <p>Further, Senegal is also member of Panel 3 (on temperate tunas, South) a panel which is currently being chaired by South Africa. Finally, all the countries but Ghana, Sierra Leone and (again) Guinea Bissau are also members of Panel 4 (on other species). As explained in the reports, Panels are responsible for keeping under review the species, group of species, or geographical area under its purview, and for collecting scientific and other information relating thereto. Based on investigations from the SCRS, Panels may propose to the Commission recommendations for joint action by the CPCs.</p>

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				<p>of missing data and signs of misreporting (such as identical numbers supplied over several years), the lack of scientists from sub-Saharan Africa as active participants in stock assessments or scientific advice.</p> <p>Issue b is likely not met at SG80.</p> <p>It cannot be determined if Issue b is met at SG80, as the team was not in a position to properly assess this issue because it did not follow the MSC guidance that calls for considering the stakeholders in their local contexts, the team only looked at the international level which is not sufficient, as the guidance asks:</p> <p>'To minimise the likelihood of subjectivity, assessment teams should include participants and/or interviewees from a wide variety of stakeholder types and from stakeholders operating outside the UoA. Fishers may be able to draw up charts or use other visual or non-textual means to help explain or demonstrate the process for resolving conflicts in the UoA.</p>	<p>The proceedings of the 25th Regular Meeting of the Commission held in Marrakesh (Morocco) on the 14-21 November 2017 (ICCAT 2017e) state that 44 CPCs attended to the meeting, including: Cabo Verde, Côte d'Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea Conakry, Liberia, Mauritania, Sao Tomé & Príncipe, Senegal, and Sierral Leone. As explained in the report, all decisions are adopted at this forum.</p> <p>Appendix 2 of the Report of the 2016 ICCAT YFT tuna stock assessment meeting details the list of participants. The following scientists from the West Africa coastal countries participated: Justin Monin Amandè (Ivory Coast), Sylvia Sefakor Awo Ayivi (Angola), Cheikh Baye (Mauritania), and Olavio Anibal (Sao Tomé & Príncipe).</p> <p>Another example of the participation of scientist from West Africa coastal countries can be found at the report from the meeting of the Standing Committee on Research & Statistics (SCRS) (ICCAT 2017f) held in Madrid between 2-6 October 2017. This report details that 23 CPCs attended to the 2017 meeting, including: Angola (7 representatives), Côte d'Ivoire (1 representative), Liberia (1 representative), Mauritania (1 representative), Sao Tomé & Príncipe</p>

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				<p>The level of transparency and effectiveness of the systems can be determined by:</p> <ul style="list-style-type: none"> Information on the proportion of stakeholders that are aware of the existence of any dispute resolution arrangements; The history and stories of how disputes have been dealt with in the past; Ascertaining whether the presence or absence of unresolved disputes can be considered significant indicators of the existence and/or effectiveness of dispute resolution mechanisms. <p>Evidence of consistency with this requirement can be determined by using field observations and structured interviews with fishers and fishing community leaders to ascertain the following:</p> <ul style="list-style-type: none"> The extent to which fishery participants are aware of established rights; Responses in the past within the UoA to disputes over established rights; 	<p>(1 representative), and Senegal (3 representative).</p> <p>The aim of the SCRS is to develop and recommend to the Commission policies and procedures in the collection, compilation, analysis and dissemination of fishery statistics to ensure that the Commission has available at all times complete, current and equivalent statistics on fishery activities in the Convention area. It is indeed true that sub-saharan African scientists are scarce compare to those from European Union, EEUU or Japan, but they do exist and participate in the SCRS meetings and Working Groups (as demonstrated above)., Dr. Monin Justin Amandè has been cited in the report, and he belongs to the Centre de Recherches Océanologiques (CRO) based in Abidjan (Ivory Coast). Dr. Amandè is also the rapporteur for the Skipjack tuna section in the 2017 SCRS report. The CRO, and Dr. Amandè in particular has also been in charge of training the Sea Eye observers.</p> <p>The fact that the level of catch reporting is unequal among countries is normal when it comes to an RFOs managing stocks shared by dozens of countries on both sides of the North and South Atlantic. These drawbacks are taken into account when carrying out</p>

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				<ul style="list-style-type: none"> Accepted norms and practice across the UoA that is supportive of such established rights.' <p>There is evidence from the sociological studies of West African fisheries communities that this issue is not met at SG80. For example, a study of local fishermen and women documents widespread non-compliance with laws and regulations, declining fish stocks, conflict with industrial, predominantly foreign fleets (conflicts mentioned include damaged gear, intrusion and direct competition, causing overfishing, pollution from discards, displacement from traditional occupations in fisheries processing, etc) most relevantly these interviews document the lack of access to legal representation or other dispute mechanisms. There are repeated stories of rights violations, of a lack of consultation with the stakeholders on a local level in the decision making process and the lack of awareness of established rights.</p>	<p>stock assessments. Similarly, the fact that the scientific capacity of the West African countries is lower than desired does not invalidate the stock assessments or the work carried out by the SCRS and ICCAT. The claims of the Peer reviewer regarding this SI are not sufficiently documented for the assessment team to consider that they should modify their score since SA4.3.2.3 is clearly accomplished.</p> <p>SI(b)</p> <p>This SI serves to assess the mechanisms for dispute resolution available within the management system. The assessment team still considers that the rationale provided at the scoring table in the PRDR provides a thoughtful response to this SI.</p> <p>All the countries involved: (i) signatory countries of ICCAT, UNCLOS and other international agreements; (ii) participate at different ICCAT meetings (annual meeting, SCRS, panels 1, 3, 4); (iii) have existing bilateral fishing agreements. Therefore, the assessment team considers that it is adequate to assess the level of transparency and effectiveness of the systems based on reviewing the existing regulations, documents and information.</p>

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				<p>Issue c, SG60 is specifically concerned with the local people dependent on the fisheries for livelihood or food, it is likely that it is not met; the report is missing essential perspective on the indigenous people's rights and the system of customary laws (making the information insufficient to justify the scored given).</p> <p>It is far from certain that: "The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2'.</p> <p>The management system currently secures that the benefits of the resource flow primarily to the Global North, traditional users of the resource lose not only access to food, suffer the externalities such as pollution from discards and damaged gear, but also are deprived of livelihood. The latter is a gender issue. Women are traditionally employed in fish processing</p>	<p>ICCAT biennial reports provide the proceeding of the Commission meetings and the reports of all associated meetings (such as the report from the Conservation and Management Measure Compliance Committee). Further, a specific volume (ICCAT 2017h) is issued with all the annual reports prepared by the different CPCs (the 2017 reports from Angola, Ivory Coast, Equatorial Guinea, Gabon, Ghana, Liberia, Mauritania, Senegal and Sao Tomé & Príncipe can be consulted). Any concern from the nation states where the fishing is taking place in relation to tuna fisheries it would definitely arise within the ICCAT framework, so it could be traced and the effectiveness of the dispute resolution mechanisms could also be assessed.</p> <p>Although the guidance quoted by the PR-B mention that field observations and structured interviews with fishers and fishing community leaders can be used for scoring this SI, the assessment team consider this is not the case of the assessed fishery (it would be completely impracticable due to the scale of this type of fisheries, and it is also unnecessary because of all stated above). To the knowledge of the assessment team no dispute has been arised by the nation states where the fishery take places.</p>

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				<p>and their incomes are now threatened by the businesses associated with exporting fish from Africa.</p> <p>There are many inconsistencies between the pre-colonial systems of managing access to marine resources and the laws of the nation-states that are often based on European models. The report mentions only legal mechanisms related to the state institutions and does not address a parallel system of customary laws that are often the ones that govern communities. The private agreements between Jealsa-Rianxeira Group and respective governments may be seen as invalid by the stakeholders in many coastal communities affected, depending on local contexts. The extent of the state law can be limited in Africa, and traditional system of governance are those that often apply -- and it is with these structures of power that agreements over shared resources <i>also</i> need to be negotiated and the mechanisms for resolving conflicts agreed. This has not been the case.</p>	<p>It is important to note that, in the case of the yellowfin tuna, ICCAT does not allocate quotas or establishes any catch limits to the different CPCs. ICCAT establishes a TAC to ensure the sustainability of the stock (for all users). Therefore, when the West African Countries are granting access to foreign vessels by means of a bilateral agreement, it does not mean that they are doing so at the expense of the access rights of local fishermen (see below CAB response to SI(c) for more details on this issue).</p> <p>Having said this, the publication referred by the PR-B (Voices from African Artisanal Fisheries edited by Caopa and Rejoprao) accounts in fact for the concerns of the artisanal fishermen in different African countries, mainly West African Countries (such as Senegal, Mauritania, Guinea-Bissau, and Ghana). These concern are summarised as follows: (i) "accesing the fisheries resources"; (ii) "incursions from industrial trawlers in their fishing zones"; (iii) "the coastal pollution"; (iv) "the lack of policy-makers interest for their sector". It is interesting to note that the word 'tuna' or 'purse-seiner' does not appear even once in the entire paper. As example, we will review below the case of Senegal.</p>

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				<p>The relevant MSC guidance on the issue of indigenous people's rights is below, since indigenous people are stakeholders in this fishery their perspectives need to be taken into account, it is so far missing from the report, and thus the support for the given scores is insufficient:</p> <p>SA4.3.5 For scoring issue (c), the team shall not make their own judgements or unilateral decisions about whether or not custom or national treaties relating to aboriginal or indigenous people have conferred rights upon any particular group or individual.</p> <p>SA4.3.5.1 The use of the term "treaties", in relation to scoring issue (c), shall not include international treaties or treaties between states or nations, and is limited, in this context to national treaties</p>	<p>The main concerns raised by the Senegalese fishermen are related to the use of destructive fishing techniques on behalf the artisanal fishermen (small mesh size and/or prohibited nets and even dynamite), the shortcoming in the governance and the surveillance at a National level which translates by a largely uncontrolled growth of the number of pirogues. The paper also states that, in order to address this situation, the "Senegalese administration wants to regulate the access to the fisheries through the implementation of the artisanal fishing permit", although "many fishermen simply refuse to abide by this decree". On the other side, when it comes to the industrial fishing sector, "both the Directorate of Marine Fisheries and the Directorate of Fisheries Protection and Surveillance look happy: 'The incursions in forbidden fishing zones are rare because we are monitoring the vessels with the VMS tracking system. Each industrial vessel having a permit in Senegal is compelled to have on board an ARGOS transmitter giving its position every hour. Once it gets into a forbidden fishing zone, we can see it automatically. If it happens to turn off the tracking system, we can also see it', explains (...)". According to the paper, concerns raised over foreign</p>

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				<p>SA4.3.6 relating specifically to aboriginal or indigenous people. </p> <p>The team shall interpret “generally respect” in scoring issue (c) at SG60 to mean that there is some evidence that the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood, and their long-term interests, are considered within the legal and/or customary framework for managing fisheries</p>	<p>vessels operating within Senegalese waters are focused on the joint venture fleet which are trawlers from Asia and Europe, and one of the criticisms expressed about this fleet is that they have no observers on board (which is clearly not the case of the assessed fleet). In summary, to the judgement of the assessment team this is an interesting reading, but it does not affect the score of this SI.</p> <p>SI(c)</p> <p>In the case of the yellowfin tuna, ICCAT does not allocate quotas or establishes any catch limits to the different CPCs (Rec 16-01). ICCAT management is based in establishing a scientific-based TAC which aims to ensure the sustainability of the stock. Therefore, when the West African Countries are granting access to foreign vessels by means of a bilateral agreements, it does not mean that they are doing so at the expense of the access rights of local fishermen. Further, unlike in joint ventures, catches from foreign vessels operating under fishing agreements (as is the case of the assessed fleet) are counted against the flag State, in this case Guatemala. Therefore, it can only be claimed that the tuna caught in the EEZs of West African coastal</p>

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					<p>countries by the authorised foreign vessels is affecting local fishers by diminishing the available resources. But in turn, this can only be claimed if the TAC established by ICCAT is not being respected (and the stock decreases) or if it is considered that the ICCAT stock assessment and management is not effective to maintain the stock at sustainable levels. The reviewer adopts this last position but the assessment team disagrees as it has already been explained in detail throughout this report. The evaluation team considers that the stock of YFT is recovering and is close to reaching sustainable levels, although it is true that the recent catch overate may imply a longer recovery period (but this is something to be assessed in the future and that is out of the current question raised by the reviewer).</p> <p>It could be claim, however, that in the case of the BET catch limits have been established by ICCAT (Rec 16-01) for the main fishing CPCs (the only African country included in the list is Ghana), while ICCAT encourages all the remaining CPCs to limit their catches to 1,575t. By reviewing the Rec 16-01, the assessment team has realised that, in application of the criteria established in Resolution 15-13, Rec 16-01 determines that developing coastal countries are</p>

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					<p>not subject to the 1,575t catch limit. For these countries catch limits will only be considered necessary when catch exceeds 3,500t in any given year. Therefore, the fishery-specific management system allows a greater margin of catches to coastal developing countries, thus observing the legal rights established by the custom of communities dependent on fishing. Rec 16-01 (as any ICCAT Rec) is binding for all CPCs.</p> <p>Rec 16-01 also establishes that, in those cases catch of BET of any developing coastal PCP exceeds 3,500t in any given year "the relevant CPC shall endeavour to adjust its fishing effort so as to be commensurate with their available fishing possibilities". Is in these cases, and in those CPCs having a joint venture fleet targeting tropical tunas, when there is a need of mechanisms that formally commit to respect the legal rights established by custom of communities dependent on fishing. This mechanism is not detailed in Rec 16-01 (as seen above) and actually is for the CPCs to establish it. The assessment team has not investigated this issue at the level of every West African coastal country, and it is unlikely it is actually met. This means that the assessment team considers that SG80 is met while SG100 is not met. The</p>

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					<p>rationale has been modified in order to clarify this issue.</p> <p>The reviewer consider that “The private agreements between Jealsa-Rianxeira Group and respective governments may be seen as invalid by the stakeholders in many coastal communities affected, depending on local contexts” and also the “The extent of the state law can be limited in Africa, and traditional system of governance are those that often apply -- and it is with these structures of power that agreements over shared resources also need to be negotiated and the mechanisms for resolving conflicts agreed. This has not been the case”. However, to the knowledge of the assessment team no concerns have been raised in relation to lack of access to tropical tuna fisheries by fishermen from Western African countries, or local communities considering fishing agreements on tropical tunas as invalid. The reviewer consideration that fishing agreements should be negotiated with traditional system of governance since the state law can be limited in some African countries is not supported on any legal basis. All the West African coastal countries where the fishery operates: (i) are signatory countries of ICCAT, UNCLOS and other international</p>

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					<p>agreements; (ii) are actively participating at different ICCAT meetings (annual meeting of the Commission, SRCS, panels 1, 3 and 4); (iii) have existing bilateral fishing agreements with the client. For the assessment team this is enough to assume that they are part of the ICCAT fisheries management and that they are watching over the interests of their people. On the contrary, the reviewer considers that local (African) communities are not necessarily represented by their national governments, and elaborates arguments based on the implicit assumption that their participation in ICCAT cannot be considered as significant (and the same for the NGOs).</p>

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3.1.2	No	No	NA	<p>This fishery is a combination of international and 'informal and traditional' and thus both levels should be considered.</p> <p>Issue a SG60 requires input from different segments of the stakeholder community in order to verify that roles and responsibilities are understood, this is missing in the report and other evidence suggest that this guidepost is not met.</p> <p>The MSC guidelines suggest:</p> <p>'To verify the extent to which roles and responsibilities are defined across the management system, CABs may need to work with stakeholders to prepare simple governance, institutional or system maps.</p> <p>The maps can provide a visual representation of the different groups and organisations involved in the UoA, how they function, which aspects of the management process they are responsible for, and how they relate to one another.'</p> <p>There has not been enough engagement</p>	<p>SI(a)</p> <p>The ICCAT structure and decision-making process, which is detailed in the rationale provided in this PI and also in the background section of the report (section 3.5.2) provides enough information about the roles and responsibilities of the different stakeholders engaged in the management process of the fishery. Both the flag state of the assessed vessels and the nation states where the fishery take place are actively involved in the process (see CAB response provided for PI3.1.1 SI(a)). There is extensive documentation that can be consulted to score this SI. The guidelines suggested by MSC and quoted by the reviewer are to be considered in informal and/or traditional management environments where stakeholders maps may not be well determined, but this is not the case of the assessed fishery. ICCAT reports demonstrate that almost all of the African countries where the fishery takes place are actively participating in different ICCAT meetings and therefore it cannot be argued that they are not aware of their functions, roles and responsibilities.</p> <p>Among the different examples cited by the reviewer</p>

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				<p>with the stakeholders to assess whether on the local level there is clarity with respect to roles and responsibilities. The evidence from the surveys suggest that this is often not the case</p> <p>But even at the national level, the conclusion in the report that the compliance (resulting from the understanding of roles and responsibilities) of the CPCs is high, clashes with the evidence of missing and misreported data from African countries (see above), from EU (biases were uncovered when comparing landing and fish processing data, ref above) and in particular from Guatemala (reported to the CAB vs ICCAT).</p> <p>In the case of issue b, the CAB interprets 'local knowledge' as follows: 'In the case of international management environments, such as ICCAT fisheries, 'local knowledge' can be interpreted as the information, research and management experience from the different CPCs.'</p> <p>Firstly, this interpretation is contrary to the</p>	<p>(Voices from African Artisanal Fisheries edited by Caopa and Rejoprao) none refers to ICCAT managed fisheries. This study points that artisanal local fisheries are dealing with different concerns, as already explained in detail in the CAB response to PI3.1.1 SI(b).</p> <p>Despite the level of report from some of the Western African countries is not as expected, the situation shall be judged in a wider context since these are highly migratory stocks which are being fished by many diferent fleets in many different countries on both sides of the North and South Atlantic. As already explained in the CAB reponse to PI1.2.3, in any of these extremely large fisheries you would have some inaccuracy in reporting, especially from the smaller countries and fisheries, but these uncertainties are known and can treated as such in the modelling approach and also taken into consideration when designing and adopting management measures.</p> <p>There are about a 100 flags that have either been fishing in the past or currently fishing for YFT and most of those taking large amounts are reporting their catches, so relatively speaking the reporting is</p>

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				<p>MSC guidance.</p> <p>SA4.4.5 Teams shall interpret “local knowledge” to mean: qualitative, and/or anecdotal, and/or quantitative information, and/or data that come from individuals or groups local to the fisheries managed under the UoAs’ management system</p> <p>Secondly, even if the reports’ interpretation is accepted, then effectively for most African countries the ‘local knowledge’ is a very underrepresented entity at ICCAT as inferred from the missing African catches, the missing African authors of the reports, the missing African stock assessment modellers, etc.</p> <p>In either case, SG 60 issue b (consultation processes) is not met.</p> <p>Issue c is about participation, or effectively whether ICCAT provides opportunity for all interested and affected parties to be</p>	<p>not as severe as made out by the reviewer. For instance, in the latest annual report prepared by Gabon to ICCAT they clearly state that “<i>Tuna fishing activities are carried out only by vessels flying foreign flags fishing under a fishing agreement</i> “ (in ICCAT 2017c).</p> <p>SI(b)</p> <p>The assessment team disagrees with the reviewer in considering that the interpretation used for ‘local knowledge’ is contrary to the MSC guidance.</p> <p>As explained in the CAB response to PI3.1.1 SI(a) there is extensive documentation showing that Western African countries where the fishery takes place are actively participating in the ICCAT process (intersessional meeting of Pannels 1, 3 and 4, SCRS meetings and the annual meeting of the Commission). A modification has been done in the rationale in order to make this clear. Although the assessment team is not denying that it might be advisable that African countries would be more strongly represented at ICCAT, we do not support the reviewer opinion regarding how severe this is by</p>

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				<p>involved. The CPC and NGOs might not represent all the interested and affected parties involved, it would require the stakeholder interviews (that were not undertaken by the CAB) to ascertain whether local fishing communities affected feel that they have an opportunity to participate and whether they feel represented in the management system. Based on available research, this is unlikely, largely due to economic, cultural, linguistic and political barriers. SG 80 is not met.</p>	<p>stating that SG60 is not met. However, a new statement has been included in the rationale to reinforce that SG100 is not met based on the considerations presented by the reviewer.</p> <p>SI(c)</p> <p>As explained in the CAB response to PI3.1.1 SI(a) there is extensive documentation showing that Western African countries where the fishery takes place are actively participating in the ICCAT process (intersessional meeting of Pannels 1, 3 and 4, SCRS meetings and the annual meeting of the Commission). A modification has been done in the rationale in order to make this clear. The assessment team disagrees with the reviewers when considering that “CPCs and NGOs might not represent all the interested and affected parties involved, it would require the stakeholder interviews”, and that therefore a more extensive consultation involving all fishing communities along the Western African coast would be required. To our knowledge this would be completely impracticable due to the scale of this type of fisheries, and also unnecessary taking into account the context of this fishery.</p> <p>In summary, some modifications have been done in</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					the rationales provided for SI(b) and SI(c), but no changes to the scores were considered necessary.
3.1.3	No	Yes	NA	There is no mention of long-term objectives of African nations, such as Gabon, whose recent policy <i>Gabon Bleu</i> - which establishes a large MPA in its EEZ - has relevance here.	The background section of the report has been modified to mention this relevant initiative carried out by Gabon (under section 3.4.6). However, the assessment team does not consider this information has to be assessed when scoring PI3.1.3. Actually, according to the Atlas of Marine Protection site (http://www.mpatlas.org/mpa/sites/60009054/) this MPA is still not implemented.
3.2.1	Yes	Yes	NA		No response from the CAB is needed
3.2.2	No	No	NA	It is likely that Issue d is not met at SG100 , determining whether it is met would require wider interviews with the stakeholders in Africa as GSA4.8 recommends: 'Scoring issue (d) considers the importance of stakeholder access to fishery information and data, and access to information on actions taken by	SI(d) As explained in the CAB response to PI3.1.1 SI(a) there is extensive documentation showing that Western African countries where the fishery takes place are actively participating in the ICCAT process (intersessional meeting of Pannels 1, 3 and 4, SCRS meetings and the annual meeting of the Commission). Taking that into account and also all

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>management to ensure stakeholders are able to provide quality input into the decision-making processes.' This and other issues could not be properly assessed because the stakeholders from most of the African countries involved were not actively sought out and consulted.</p> <p>Further, the MSE guidance says: 'Semi-structured interviews may be used by CABs to determine the extent to which stakeholders believe that local 'managers'/leaders respect or otherwise, any judgements or decisions made by any higher or other authority.</p> <p>The interviews can also be used to determine the extent to which:</p> <p>(i) Managers implement their own rules. (ii) Stakeholders believe the management system is sufficiently proactive to avoid disputes'</p> <p>Also, 'ICCAT allows its parties to opt out of decisions. The 2006 UNFSA Review Conference recommended that States</p>	<p>the details provided in the rationale in relation to the level of reporting in ICCAT the assessment team consider that the information available allows scoring this SI without the need to interview all managers from the different African countries where the fishery operates.</p> <p>The assessment team agrees with the reviewer in relation to the need to ensure that post opt-out behaviour is constrained by rules to prevent opting-out parties from undermining conservation. However, this is not to be scored in SI(d) but in SI(e), in fact the comments expressed by the reviewer are very similar to the rationale provided by the assessment team to not score 100 in SI(e).</p> <p>SI(e)</p> <p>The rationale has been modified to present a recent example showing the ability of the management system to comply in a timely fashion with a decision adopted by the Commission, even before any judicial decision had been taken.</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>through RFMOs should ensure that post opt-out behaviour is constrained by rules to prevent opting-out parties from undermining conservation, clear processes for dispute resolution, and a description of alternative measures that will be implemented in the interim (UN, 2006, paragraph 32(f) of the Annex). ICCAT has not implemented these yet.' [source: ISSF Technical Report – 2017-09]</p> <p>The evidence that issue e is met at SG80 is insufficient, references case studies would help but if there are none, then it cannot be claimed that SG80 is met.</p>	

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
3.2.3	No	No	NA	<p>'To meet the MSC Fisheries Standard, there must be a monitoring control and surveillance (MCS) system in place as evidence that fishers comply with the requirements of the management system and there is no evidence of systematic non-compliance (PI 3.2.3).'</p> <p>Compliance by various CPC can be readily questioned based on the lack of biological, fishery and research contributions that arise from the countries involved in this fishery: Mauritania, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Cote d'Ivoire, Gabon, Sao Tome and Principe, Angola and Equatorial Guinea. None of the scientists from these countries are referenced in the assessment report. Stock assessment (2016, Table 4) assumes that all these countries together caught less than 5% of the reported catch in 2015, with most countries in question (Mauritania, Guinea Bissau, Sierra Leone, Liberia, Gabon and Equatorial Guinea) either not mentioned or listed as having caught no yellowfin tuna.</p>	<p>As already explained in the CAB reponse to PI1.2.3, in any of these extremely large fisheries you would have some inaccuracy in reporting, especially from the smaller countries and fisheries, but these uncertainties are known and can treated as such in the modelling approach and also taken into consideration when designing and adopting management measures.</p> <p>There are about a 100 flags that have either been fishing in the past or currently fishing for YFT and most of those taking large amounts are reporting their catches and also catch-effort indices (the compliance on reporting Task I and Task II data can be easily assessed using the ICCAT Secretariat reports included in the biennial reports), so relatively speaking the reporting is not as severe as made out by the reviewer. For instance, in the latest annual report prepared by Gabon to ICCAT they clearly state that <i>"Tuna fishing activities are carried out only by vessels flying foreign flags fishing under a fishing agreement"</i> (in ICCAT 2017c).</p> <p>The ICCAT secretariat prepares an annual report to the Conservation and Management Compliance Committee (COC) which includes a follow up on the</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>While the catch from 2 of the 4 countries remaining is 'estimated' rather than reported as for most countries .</p> <p>Basically, information on the impact of small scale fisheries or larger vessels flying African flags is largely unreliable or unavailable. Conflicts in the CPUE indices and growth information suggests that there are problems with surveillance in the available data. Further, the difference in Guatemalan catches in the report versus those reported to ICCAT is another anecdotal evidence of misreporting. The report describes a process involving DIPESCA that should have produced the same numbers for both.</p> <p>Compliance with MPAs established by Gabon was not examined.</p> <p>In the case of observers on the assessed vessels, it is not clear what AZTI supervision means in practice. Would anyone from AZTI accompany the observers on one of their 45 day long trips? (Is the new observer company called Sea Eye or Ocean Eye?</p>	<p>monitoring and compliance with current ICCAT Recommendations. The rationale has been modified in order to include a detailed description on the follow up provided in ICCAT 2017d related to Recommendation 11-15 on penalties applicable in case of non-fulfiment of reporting obligation, which is the case raised by the reviewer. The summary reflects that prohibitions on certain species remain in force for some countries (any of them african countries), while by they were lifted to Angola, Ivory Coast, South Africa and St. Vincent and Granadines by the end of year 2015 following submissions of missing data or confirmation of zero catches had been received by these four countries. Also, in the 2017 annual meeting it was decided to send a prohibition letter to Mauritania and Nicaragua since the ICCAT Secretariat has still not received Task I data of 2014 or confirmation of zero catch. In the case of Brasil, they had to request to the COC a derogation of the application of measure 11/15 until the 31st March 2018, so that they have enough time to produce a thorough analysis (and they have actually managed to do it, which actually shows that when underreporting occurs at an extent which limits substantially the capacity of the Committee to make</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>What common languages are spoken by the observers, the skipper, the crew, and AZTI? Does AZTI have a long term experience with the company in other fisheries and has evidence of its reliability?)</p> <p>Given these practical considerations, issue a might not be met even at SG60.</p> <p>That sanctions generally offer an effective deterrence in cases of non-compliance is doubtful considering the extent of the problem (see next), SG 80 might not be met for issue b. There is evidence of systemic non-compliance (issue d): patterns in reported data (repeated numbers), missing data (see above), sudden jumps from year to year in reported catches that are unexplained by the changes in the fishery, the very need to threaten sanctions in order to get a revised data series, oddly missing large fish, conflicts in data when trying to fit a population model to it often reveal an extent of the problem resulting in fitting models to different data sets, dropping data from particular countries or giving</p>	<p>proper evaluation of the tropical tuna stock status the system reacts. In this case the reaction was even before a sanction was raised).</p> <p>Further details can be found in the new rationale. This provide evidence that: (i) ICCAT monitors compliance on catch data reporting; (ii) sanctions are being imposed when necessary; (iii) no major concerns have been raised in relation to compliance of most of the African countries picked by the reviewer; (iv) there are no evidence of systematic non-compliance as claimed by the reviewer.</p> <p>As explained in the CAB response to the "Summary of the Peer Reviewer Opinion" the difference alleged by the reviewer between the YFT catches reported in 2015 by the two vessels and the data reported by Guatemala to ICCAT is not such.</p> <p>To the knowledge of the assessment team the MPA proposed by Gabon is still not implemented (http://www.mpatlas.org/mpa/sites/60009054/). In any case, the bilateral agreement signed with this country states that Gabon may request the boarding of observers (in addition to the Sea Eye observers) in 20% of the AGAC vessels that have been granted a license under this Agreement. The client has</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
				<p>untrustworthy data a lower weight, mismatches between the different sources of data (comparison of log book data with market or processing plants) are all evidence of systemic non-compliance. At a complex international organisation such as ICCAT data are always politicised, it is difficult to confront countries over their data even when there are scientific reasons to do so. Sanctions are rare. Cooperation is key to the organisation thus eliminating systemic non-compliance is a work in progress. Other reasons for systemic non-compliance may simply be a lack of resources, or unequitable distribution of resources, or the difficulty in obtaining certain kinds of data (such as on small scale fisheries).</p>	<p>confirmed that the regularly get Gabonese observers on board when they are planning to fish within that EEZ. The team leader (Jose Rios) can verify that a Gabonese observer was on board the Sant Yago I when he came to Abidjan on the 2-3 October 2018 for a MSC CoC audit on board. So far, no infringements have been reported by these local observers.</p> <p>Also, no fishing on FADs during the area/time closure established in Rec 16-01 has been reported by the ICCAT Secretariat to the COC (ICCAT 2017d).</p> <p>As explained in section 3.2.5 of the report (other certifications and verification of good practices on board) AZTI is the scientific body responsible for verifying the implementation of the OPAGAC/ANABAC Code of Conduct signed by the client in 2012, which has recently being included as part of the Standard UNE1956006:2016. They are doing so by (among other things) reviewing and analysing data collected by the observers on board. The observers are filling the standard ICCAT observer forms (Forms A, B, C1, D) and further they are also filling some extra forms designed by AZTI which are aimed to provide more information on the good practices on board (Forms B2, B3, D2). AZTI scientists</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					<p>are not going on board with the Sea Eye observers, they collect and analyse the information (and if needed they call them for clarifications). Further, AZTI is in charge of different training schemes for observers on tuna fisheries, for instance they have a contract with ISSF to train observers all around the world. As a result of this long experience observers they have get to know the Ivory Coast based observer company called Sea Eye. There is MoU signed in November 2014 between AZTI and Sea Eye stating that AZTI data collected by observers from Sea Eye will be supervised by AZTI. During the meeting held during the site visit the Azti representatives confirmed that they have trained the observers from Sea Eye and they trusted on their capacities. During the conference it came clear that Jon Ruiz (AZTI) has a relationship of trust with the people from Sea Eye. AZTI and the people from Sea Eye speak french to each other, however Zeze Kouaty Loïc Andréa (project manager) speaks fluent spanish (this facilitates all deals with the client and the skippers when needed). The communication language between the observers and the crew is a mixture between french, spanish and english, but this is very common in seafarers contexts, they are</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB Response
					<p>used to it.</p> <p>In summary, there is evidence that: (i) ICCAT monitors compliance on catch data reporting; (ii) sanctions are being imposed when necessary; (iii) no major concerns have been raised in relation to compliance of most of the African countries picked by the reviewer; (iv) there are no evidence of systematic non-compliance as claimed by the reviewer.</p> <p>Rationales for SIs(b)(c)(d) have been modified, but no changes to the score where considered necessary.</p>
3.2.4	No	No	NA	<p>MSC guidance emphasises for this PI the connection between the higher level management of the stock and local stakeholders who are affected by the decisions (GSA4.10). The report does not make the link to the local management systems, issue a is not met at SG100:</p> <p>‘There are mechanisms in place to evaluate all parts of the fishery-specific management system.’</p>	<p>A modification was introduced in the rationale in order to clarify why current ICCAT decision-making process allows to respond to both wider management issues of stock wide and CPC and observers (non-CPCs, NGOs) concerns.</p> <p>The reviewer does not provide any further explanation on why SG100 is not met.</p> <p>No changes to the original score has been made.</p>

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary) can be added below and on additional pages

The report contains a lot of information, but attention to detail is uneven. There are many typos, grammatical errors, missing references and inconsistencies. In addition, several contradictions are particularly disconcerting and neglect for the controversial social and historical contexts is profound. The authors seem to overlook a lot of uncertainties that ICCAT's own reports and papers highlight, and don't seem to be sufficiently concerned by issues such as disagreements between models, conflicts in data, under- and mis-reporting, the lack of implementation and general ineffectiveness of current measures that ICCAT itself is relatively open about. However, the most glaring omission from the report are the Africans. It is obvious that the CAB has not followed the MSC guidance for stakeholder engagement. According to ICCAT's own data (which is likely according to ICCAT's research incomplete and biased) more than 80% of Yellowfin from the EEZ of African Nations and adjacent waters are caught by foreign fleets, this is in the context of unprecedented population growth and migration to coastal areas in Sub-Saharan Africa whereas more people are dependent on fisheries every day. The governments of many of the nations in those waters this assessed fishery takes place are poor and it is possible that the fees these governments collect from the Spanish company in exchange to access to tuna resources contribute positively to their budget. Yet, there has been widely reported criticism that such deals are unfair (and the fees are too low), that as a result these contracts enrich only the elites with government connections and that through this unfair competition the local and indigenous communities are denied natural resources that are being extracted from their environment for the benefit of wealthy consumers in developed countries - most of yellowfin tuna caught in African waters is exported. This is practically the definition of neo-colonialism and it seems unlikely that MSC would consider an example of such a fishery 'sustainable'.

While ICCAT manages tuna that is caught in the Global South but marketed almost exclusively in the Global North, its research funding is also disproportionately spent on the scientists in the Global North resulting in data and knowledge gaps about the fisheries such as yellowfin. The quality and quantity of both fishery and biological data and research that is coming from Mauritania, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Cote d'Ivoire, Gabon, Sao Tome and Principe, Angola and Equatorial Guinea is low, contributing to sources of uncertainty about stock assessment, monitoring and management. ICCAT historically has awarded disproportionately few research grants to researchers whose affiliations are in one of the countries whose EEZ's provide a major share of the catch of tropical tunas and other species. None of the researchers referenced in YFT stock assessment appear to have come from one of the countries in sub-Saharan Africa.

CAB response: These paragraphs are kind of a summary of the driving forces that have guided the comments of this reviewer. There are no new information being presented here and all the issues have already been discussed in detail in all the other sections of the report. No more comments to add here on behalf the CAB.

As mentioned earlier, even the catch of **Sant Yago TF Unassociated purse seine Atlantic yellowfin tuna fishery** seems to have been reported differently to ICCAT than to CAB. Such gaps in data especially coming from African contracting parties make stock assessments less reliable than is assumed in the report; separately, data from China and EU has been questioned and large biases are believed to be present yet these sources of uncertainty have not been accounted for yet.

CAB response: The issue of the alleged big difference between what is reported in the report and what was reported to ICCAT has already been addressed. According to the assessment team, the weight given by the reviewer to the gap on the data coming from African fisheries is overrated, and in any case it does not undermine the validity of the stock assessment performed by the SCRS, the effectiveness of the ICCAT data reporting system (PI 3.1.2) or the fishery-specific MCS system assessed in PI 3.2.3.

Further, it is important to underline that all participating companies in ISSF are being quarterly reporting all their tuna purchases to the competent RFMO scientific bodies (ISSF conservation measure 2.2). In the case of the assessed fishery this allows the ICCAT Secretariat to use data sent by all these companies to crosscheck data sent by the CPCs if needed. This is important because catches recorded in the logbooks and during the offloading operations to reefers and/or containers

are providing estimated weights, while weight recorded at the entrance of the processing plants and the productions figures allow to obtain a more accurate picture. The SCRS has used this data in the past to crosscheck Task I data in conflicting situations, for instance it was used to check and improve catch data from Ghana (Victor Restrepo –ISSF-, pers. comm). Many of the most important processors, traders, importers, transporters, marketers and others involved in the tuna industry worldwide are participating companies in ISSF, therefore the impact of this measure is expected to be considerable. However, ISSF is currently working on improving standardisation of data reported by the different companies to facilitate the task of the ICCAT Secretariat (the body in charge of receiving all data). Since Jealsa-Rianxeira joined ISSF in 2012, they have been reporting these data since then (and compliance has been audited since then –audit reports are available at the ISSF website and also at the Jealsa website).

The report leans heavily on ICCAT’s resolution 15-13 as offering a ‘mechanism’ for settling issues related, but it presents no evidence of how this ‘mechanism’ might *function*. *In practice*, stakeholders in Africa face many constraints that might be political, social, cultural, economic and linguistic. An implicit assumption made in the report that either national governments or Western NGOs are necessarily representing the interests of local communities is wrong in many of the places where this fishery operates.

CAB response The rationale for PI3.1.1 SI(c) ‘Respect for rights’ has been modified after reviewing the comments from the reviewer and the Rec 16-01. It is now stated that “*in application of the criteria established in Resolution 15-13, Rec 16-01 determines that developing coastal countries are not subject to the 1,575t catch limit. For these countries catch limits will only be considered necessary when catch exceeds 3,500t in any given year. This means that the fishery-specific management system allows a greater margin of catches to coastal developing countries, thus observing the legal rights established by the custom of communities dependent on fishing. Rec 16-01 (as any ICCAT Rec) is binding for all CPCs*”. This is a short answer for the question posed by the reviewer in relation to how these mechanism function. A more detailed response to this issue has already been provided in the CAB response to PI3.1.1 SI(c).

All the West African coastal countries where the fishery operates: (i) are signatory countries of ICCAT, UNCLOS and other international agreements; (ii) are actively participating at different ICCAT meetings (annual meeting of the Commission, SCRS, Panels 1, 3, 4); (iii) have existing bilateral fishing agreements with the client. For the assessment team this is enough to assume that they are part of the ICCAT fisheries management and that they are watching over the interests of their people. On the contrary, the reviewer considers that local (African) communities are not necessarily represented by their national governments, and elaborates arguments based on the implicit assumption that their participation in ICCAT cannot be considered as significant (and the same for the NGOs). However, the assessment team does not consider the reviewer provides enough evidence to share his/her point of view in this regard.

All the site visits were in Spain, which the vessels rarely visit. The ships are old (one has actually sunk), given that the trips are long (45 days), safety checks of every 4 years seem insufficient.

CAB response: First of all, the sinking of the SY II was not related to the age or the maintenance of the vessel, actually at that moment it was only 17 year old which, by no means, is too old for a fishing vessel. The vessels are perfectly maintained, as confirmed by the team leader during the two MSC CoC on board audits performed during 2018 (23rd of April in Ribeira –Spain- and 2nd of October in Abidjan). Every 4 years the vessels come to Galicia (North of Spain) for undergoing a complete ship repair in dry-dock which takes several months. Further, every 2 years the vessels also come to Spain (but Canary islands which is much closer) for an intermediate repair, this is a much shorter stay. In any case, these vessels go through all mandatory revisions (which are not few) and they have all their navigability permits in order. This comment is definitely out of the scope of this review.

Most of the fishing, according to the vessel positioning data for both ships (‘Global Fishing Watch’), is being done within the EEZs of West African countries. In the report, there is a reference to a skype phone call with two people who represent the company referred to as ‘Sea Eye’ (based in Abidjan) which is newly contracted to supply observers, however it is not clear if the two people that were interviewed by the CAB had first-hand knowledge of the fishery: for example, did they spend any time on board the ship, or are familiar with the working conditions (another potential source of

controversy)? Further, the only company that fits the description is listed as ‘Ocean Eye’ not ‘Sea Eye’ – perhaps a mistranslation somewhere?

CAB response: We don’t know if Hoto Edith Michele has gone on board the vessels, but Zeze Kouaty Loïc Andréa has experience as observer in Spanish tuna vessels. In any case both of them have first hand knowledge of the fishery since the observers come to their office for delivering and reviewing the data collected after every trip. All the observers have gone through training provided by AZTI and CRO (Centre de Recherches Océanographiques of Abidjan). Further, the team leader had the chance to meet with them in Abidjan in October 2018 as part of an MSC CoC on board audit and he could also interview an observer on board the SYI (Hermann Olivier Affessi Koffi). They were all knowledgeable about the fishery and the assessed vessels in particular.

The reviewer is right pointing to the fact that the observer company changed its name from OCEAN EYE SARL to SEA EYE SARL. This change was announced to their clients in March 2017 (a copy of the statement sent by email to all their clients on the 9th of March 2017 was handed to the assessment team). The change of name did not entail any further change in the services provided.

It is clear that the MSC guidance regarding stakeholder consultation was not followed and little effort was made to involve local stakeholders. Further, the stakeholders in these fisheries come from a great variety of cultures and speak a number of languages. The fishery has agreement with the governments of the following countries and takes place intensively in some of their territorial waters yet no one from these nations has been consulted or had their views represented: Mauritania, Guinea Conakry, Guinea Bissau, Sierra Leone, Liberia, Gabon, Sao Tome and Principe, Angola and Equatorial Guinea. Because the stakeholders, in particularly those in Africa, have not been engaged by the CAB they will also not be able to raise objections at The Final Report stage according the MSC protocol.

The MSC Guidance to CBs for Stakeholder Consultation reads: “The importance of meaningful stakeholder consultation in MSC fishery assessments cannot be overstated. The primary goal is to collect the information needed to conduct a robust assessment of the fishery. A successful stakeholder consultation process will instill confidence in stakeholders that the assessment of a given fishery was well informed by a balanced, accessible and equitable process to which they were able to contribute meaningfully.”

CAB Response: This issue has already been reply at the table entitled ‘Summary Peer Review Opinion’. The reviewer is right pointing that no African countries were contacted directly by the CAB, however we consider that our list of stakeholders was quite comprehensive and included different ICCAT bodies (where these African countries are actively participating). Further, the information available at the ICCAT website allows to review all proceedings from the annual meetings of the Commission and related meetings, reports prepared by the ICCAT Secretariat, and also the annual reports prepared by the CPCs for ICCAT (including the reports from all the African countries where the fishery takes place). In summary, there are plenty of documentation to get to know about any concern raised by these African countries.

Appendix 3 Stakeholder submissions

No written submissions made by stakeholders during consultation opportunities listed in FCR 7.15.4.1 were received by the CAB. All rationales are based on information which is publicly available (eg. ICCAT regulations and/or publications, Guatemalan regulations, scientific publications), therefore there is no need to include here written and a detailed summary of verbal submissions received during site visits material to the outcome of the assessment including those listed in FCR 7.15.4.2

(REQUIRED FOR FR AND PCR)

1. The report shall include all written submissions made by stakeholders about the public comment draft report in full, together with the explicit responses of the team to points raised in comments on the public comment draft report that identify:
 - a. Specifically what (if any) changes to scoring, rationales, or conditions have been made.
 - b. A substantiated justification for not making changes where stakeholders suggest changes but the team makes no change.

(Reference: FCR 7.15.5-7.15.6)

Appendix 4 Surveillance Frequency

Table 4.1: Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1-4	March 2019	Anniversary date	Not applicable

Table 4.2: Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 5	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit

Appendix 5 Objections Process

(REQUIRED FOR THE PCR IN ASSESSMENTS WHERE AN OBJECTION WAS RAISED AND ACCEPTED BY AN INDEPENDENT ADJUDICATOR)

The report shall include all written decisions arising from an objection.

(Reference: FCR 7.19.1)