

Echebatar Indian Ocean Skipjack Tuna Purse Seine

MSC Certificate code: MSC-F-30029



Picture from: fao.org



Second Surveillance Report

Conformity Assessment Body (CAB)	Bureau Veritas Certification Holding SAS
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Fishery client	Pesqueras Echebatar, S.A. (Echebatar)
Assessment Type	Second Surveillance
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1 Contents

Contenido

1	Contents.....	2
2	Glossary	3
3	Executive summary	5
4	Report details	8
4.1	Surveillance information.....	8
4.2	Background.....	10
4.2.1	Personnel involved in science, management or industry.....	10
4.2.2	Certified fleet and client group	10
4.2.3	Fishery management and regulatory framework	10
4.2.4	Monitoring and compliance	18
4.2.5	Traceability issues.....	19
4.2.6	Scientific based information related to P1.....	19
4.2.7	Scientific based information related to P2.....	25
4.3	Version details	34
5	Results	34
5.1	Surveillance results overview.....	34
5.1.1	Summary of conditions.....	34
5.1.2	Total Allowable Catch (TAC) and catch data	36
5.1.3	Recommendations	36
5.2	Re-scoring Performance Indicators	36
5.2.1	Re-scoring table PI 1.2.1	¡Error! Marcador no definido.
5.2.2	Re-scoring table PI 1.2.3	36
5.2.3	Re-scoring table PI 1.2.4	40
5.2.4	Re-scoring table PI 2.4.2	44
5.2.5	Re-scoring table PI 3.2.2	54
5.3	Conditions	59
5.3.1	Progress on existing conditions	59
	Table 5.3.1.1. Progress on condition 1	59
	Table 5.3.1.2. Progress on condition 2	61
	Table 5.3.1.3 . Progress on condition 3.....	65
	Table 5.3.1.4 . Progress on condition 4.....	66
	Table 5.3.1.5 . Progress on condition 5.....	68
	Table 5.3.1.6. Progress on condition 6.....	72
	Table 5.3.1.7. Progress on condition 7	75
	Table 5.3.1.8. Progress on condition 8.....	76
	Table 5.3.1.9. Progress on condition 9.....	78
	Table 5.3.1.10. Progress on condition 10.....	80

5.3.2	New Condition	81
	Table 5.3.2.1– (NEW) Condition 11	82
5.4	Client Action Plan.....	83
6	References.....	84
7	Appendices	86
7.1	Evaluation processes and techniques	86
7.1.1	Site visits	86
7.1.2	Stakeholder participation.....	86
7.2	Stakeholder input.....	86
7.3	Revised surveillance program	97
7.4	Harmonised fishery assessments	98

2 Glossary

The terms below do not contradict terms used in the MSC-MSCI Vocabulary

AM	Acoura Marine
ANABAC	Asociación Nacional de Armadores de Buques Atuneros Congeladores
ASAP	Age structured assessment program
ASPM	Age structured production model
AZTI	Spanish (Basque) fisheries research institute
BET	Bigeye tuna
Blim	Limit biomass reference point
Bmsy	Biomass achieving maximum sustainable yield
BV	Bureau Veritas
CDR	Certifier Desk Review
CEPESCA	Confederación Española de Pesca
CITES	Convention on International Trade in Endangered Species of Flora and Fauna
CMM	Conservation Management Measure adopted by the IOTC
CPUE	Catch per unit effort
CR	MSC Certification Requirements
DEA	Electronic Logbook (Diario Electrónico de a Bordo)
dFAD	drifting Fish Aggregating Device
EC	European Commission
EEZ	Exclusive Economic Zone
EIO	Echebaster Indian Ocean
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
FAD	Fish aggregating device
FAM	MSC's Fisheries Assessment Methodology
FAO	Food and Agriculture Organisation of the UN
FAO	United Nations Food and Agriculture Organisation
FCI	Fisheries Certification International
FiTI	Fisheries Transparency Initiative
Flim	Limit reference point for fishing mortality
FMC	Fisheries Monitoring Center
F_{msy}	Fishing mortality achieving maximum sustainable yield
Fpa	Fishing mortality expected to maintain the SSB at the precautionary reference point
FSC	Free School
HCR	Harvest Control Rule
IO	Indian Ocean
IOTC	Indian Ocean Tuna Commission

IPNLF	International Pole and Line Foundation
IUU	Illegal, unreported and unregulated fishing
LL	Longline
LME	Large marine ecosystem
MAPAMA	Spanish Ministry of Agriculture, Food and Environment (Ministerio de Agricultura, Alimentación y Medioambiente)
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NGO	Non-Governmental Organisation
OPAGAC	Organización de Productores Asociados de Grandes Atuneros Congeladores
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PCR	MSC Public Certification Report
PI	MSC Performance Indicator
PNA	Parties to the Nauru Agreement
PRI	Point of Recruitment Impairment
PSA	productivity-susceptibility analysis
RBF	MSC's risk based framework
RFMO	Regional Fisheries Management Organisation
SA	MSC Surveillance audit
SC	Scientific Committee of the Indian Ocean Tuna Commission
SFA	Seychelles Fishing Authority
SFPA	Sustainable Fisheries Partnership Agreements
SGCI	Spanish Sub-directorate for Fisheries Control and Inspection (Subdirección General de Control e Inspección)
SGP	Spanish General Secretariat for Fisheries (Secretaría General de Pesca)
SI	Scoring Issue (MSC)
SICA	Scale Intensity Consequence Analysis
SIDS	Small Island Developing States
SKJ	Skipjack tuna
SONAR	Sound navigation and ranging
SS3	Stock Synthesis 3. Length based stock assessment modelling
SSB	Spawning Stock Biomass
SWIOP	Development and Management of Fisheries in the Southwest Indian Ocean
t	Metric tons, Unit of weight used in referring to catch or landings
TAC	Total Allowable Catch
UoC	Unit of Certification
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
WPB	Working Party on Billfish
WPEB	IOTC Working Party on Ecosystems and Bycatch
WPTT	IOTC Working Party on Tropical Tunas
WWF	World Wide Fund for Nature
YFT	Yellowfin tuna
PRI	Point of Recruitment Impairment
PSA	productivity-susceptibility analysis
RBF	MSC's risk based framework
RFMO	Regional Fisheries Management Organisation
SC	Scientific Committee of the Indian Ocean Tuna Commission
SFA	Seychelles Fishing Authority
SFPA	Sustainable Fisheries Partnership Agreements
SI	Scoring Issue (MSC)
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SS3	Stock Synthesis 3. Length based stock assessment modelling
SSB	Spawning Stock Biomass
SWIOP	Development and Management of Fisheries in the Southwest Indian Ocean

t	Metric tons, Unit of weight used in referring to catch or landings
TAC	Total Allowable Catch
TCAC	IOTC Technical Committee on allocation criteria
UoC	Unit of Certification
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
WPB	Working Party on Billfish
WPEB	IOTC Working Party on Ecosystems and Bycatch
WPTT	IOTC Working Party on Tropical Tunas
WWF	World Wide Fund for Nature
YFT	Yellowfin tuna

3 Executive summary

The fishery got the MSC certificate on November 9, 2018. Thus, the second surveillance audit was initially scheduled as an on-site audit to be held in November 2020. However, as a result of the pandemic and subsequent [Covid-19 pandemic derogation issued by the MSC on March 2020](#), the certificate was extended for 6 months, and the second surveillance audit was re-scheduled and an off-site audit to be held on May 2021. Current surveillance audit was conducted against FCP2.2 and MSC Full Assessment Reporting Template v2.1 was used to elaborate current report.

As summarised in **Table 5.1.1.1**, 3 conditions were closed as a result of the current surveillance audit (Condition 3 on PI 2.4.2, Condition 8 on PI 3.2.2, and Condition 9 on PI 1.2.1). Condition 2 on PI 2.4.1 was found to be on target, while all the other conditions were found to be ahead of target, since due to Covid derogations all milestones and deadlines on conditions were postponed to May 2022 and the surveillance audit took place in May 2021. The only exception was Condition 2 on PI 2.4.1 which was only affected by the 6-month derogation, so the deadline for milestone for year 2 matched with the date of current surveillance audit (May 2021).

As a result of harmonisation activities (described in **section 7.4**) a new condition on PI3.2.2 was opened, and two P1-PIs were re-scored (PI 1.2.3 and PI 1.2.4) to ensure full consistency between the scores of the overlapping fisheries. A discussion on the need to re-score PI 1.2.1 to 80 took place, but no agreement was achieved, and the lowest score was maintained by all teams (i.e. condition 9 was maintained).

No new recommendations were set to the certified fishery. All previous recommendations set as a result of the initial assessment were closed at the first surveillance audit, so currently there are no active recommendation for this fishery (see **section 5.1.3**).

¡Error! No se encuentra el origen de la referencia. presents overall scores given to each MSC Principle as published at the PCR and after current surveillance audit, while ¡Error! No se encuentra el origen de la referencia. presents scores for each Performance Indicator.

The main findings of current surveillance audit are listed below:

- The Echebatar Sustainability Working Group (ESWG) has been active since last surveillance audit, while the website created by the client to provide information relevant for the MSC-fishery certificate has been kept updated (<https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/>). The ESWG has prepared a historical review of the Echebatar's fleet catch composition (2006-2020) and fishing effort and interactions with ETP species (2014-2020) (ESWG 2021). The client (in collaboration with SIOTI) has also presented other relevant documents on survival rates of silky shark (SIOTI-ESWG 2020¹) and a new analysis of the interaction of the purse seine tuna fishery in the Indian Ocean with the ecosystem (Juan-Jordá, 2021). This later study represents an important contribution in different issues related to PI 2.5 (i.e. review of potential impacts to be considered, potential interactions and cross cutting issues between P2 PIs, review of past and on-going ecosystem research, assessment of available information to score these PIs...). Based on this analysis, the team recommends that a harmonization process on how to assess PI2.5 for purse seine tuna fisheries is undertaken as soon as the AGAC fishery assessment is completed, and the engagement of the MSC in this process would be advisable.
- Based on the actions triggered as part of the different sustainability activities where the company is involved (SIOTI, ANABAC/OPAGAC Code of Good Practices, Echebatar FAD Management Plan, BIOFADs...), specific studies launched by the ESWG and/or SIOTI (e.g. tagging studies on the silky shark, study on the interaction of purse seine tuna fisheries in the Indian Ocean with the ecosystem), actions implemented by the Government of Seychelles (FITI report, ensured funding from the World Bank to launch a consultancy to design the National Tuna

¹ The results of this study were later presented to the WPEB as Onandia et al 2021.

Management and Development Plan), and new IOTC CMMs (Res 19/02, Res 21/01, Res 21/03) and also the 2 Covid derogations issued by the MSC, progress on all conditions was found to be ahead target (with the only exception of Condition 2 on PI 2.4.1 which was found to be on target, since only the 6-month derogation is applicable).

- Two conditions were closed as a result of current surveillance audit: Condition 3 on PI 2.4.2, and Condition 8 on PI 3.2.2. While a new condition was set on PI 3.2.2 as a result of harmonisation with the CFTO fishery. In the case of PI 3.2.2, SI(b) was re-scored downwards as a result of harmonization with the CFTO fishery, while SI(d) was re-scored upwards since the team considered that Condition 8 could be closed.
- PI 1.2.3 and PI 1.2.4 were re-scored (from 90 to 80 and from 85 to 90, respectively) to ensure full consistency between the score of the overlapping fisheries.
- A new stock assessment on the Indian Ocean skipjack tuna has been completed since previous surveillance audit. The results confirm that the stock is not overfished and is not subject to overfishing, despite overages occurred in 2018 and 2019 (no re-scoring needed for PI 1.1.1). The team considered that these results, together with actions accomplished at IOTC level during 2020, allowed to close condition on PI 1.2.1, but no agreement was reached during harmonisation discussions and the lowest score was adopted (i.e. the condition remains open).
- In June 2021, the CFTO Indian Ocean purse seine skipjack fishery got its MSC certificate, while the AGAC four oceans integral purse seine tropical tuna fishery published its PCDR. The Maldives P&L skipjack tuna fishery is facing its next surveillance audit in July 2021.
- The stock status of the two main primary species for the Echebatar fishery (yellowfin tuna and bigeye tuna) is assessed following the IOTC stock assessment, therefore cumulative impacts were already considered in the score given at PI 2.1.1. A new stock assessment for the bigeye tuna was available, but results confirmed that there is no need for re-scoring of PI 2.1.1 for this stock. No new stock assessment was carried out for yellowfin tuna in 2020 neither, thus, stock status was determined on the basis of the 2018 assessment and other information presented in 2020. The team concluded that re-scoring of PI 2.1.1 for the yellowfin tuna is not needed, in accordance with the latest score provided in the PCR of the CFTO fishery (Sieben et al 2021).
- The latest information on catches (2019 and 2020) provided by the observers on board de Echebatar fleet confirm that no main secondary species are impacted by the UoA, while there is a number of minor secondary species (some small tunas and mainly small bony, pelagic or neritic finfish) accounting less than 2% of the total catches. The team concluded that there is no need to revise the impact of the UoA on these species.
- Despite there are many different pieces of new information on the impact of the UoC on ETPs (observers' data being collected on a regular basis, annual assessments performed by AZTI on the implementation of the ANABAC/OPAGAC Code of Good Practices, tests on new methodologies to improve survival rates for elasmobranchs released from deck, studies on the survival rate and habitat of silky sharks, cumulative impacts from overlapping fisheries...), the team considers that there is no need to re-score any of the ETP-related PIs (2.3.1, 2.3.2 and 2.3.3) at this stage.
- No new CMMs were adopted by the IOTC during 2020. However, 3 new CMMs were adopted at the 25th Session of the Commission held in June 2021: Resolution 21/01, Resolution 21/02 and Resolution 21/03. Res 21/01 and Res 21/03 are reviewed in the current report.
- The TCAC has been particularly active in 2020 and 2021. The Chair has prepared a proposal for an allocation regime (IOTC-2021-TCAC-04) to be discussed at the forthcoming TCAC08.
- The latest Order regulating the Spanish purse seiners targeting yellowfin tuna in the IO in 2021 includes several modifications compared to previous years: specific census, there is no longer a limit on the total catch volume for the three main tropical tuna species, and the system to allocate individual catch limits is now based on historical catches per vessel and GT, in accordance with the Spanish Fishing Law.
- An agreement valid for 6 years (2020-2026) has been signed between the EU and the Republic of Seychelles. A Joint Committee will monitor the application of this agreement. The Agreement was published at the Official Journal of the EU.
- Both Seychelles and the EU respected their quota allocations in 2019 and 2020. No major issues related to compliance of the Echebatar fleet were communicated by the competent authorities (SFA and SGP) to the team during the surveillance audit.
- Observer coverage in 2019 remained at levels comparable to 2017 and 2018 (around 80% of all sets were observed, both in FAD and FSC sets). This proportion reduced to around 50% in 2020 (52% in FAD sets and 35% in FSC sets) due to the restrictions on observers boarding vessels resulting from the COVID-19 pandemic regulations applied in the Seychelles. In any case, both latest observer coverage and averaged observer coverage during the studied period (62% of the sets performed between 2014 and 2020 were observed) are well above the

minimum 20% observer coverage which the IOTC is recommending (IOTC 2020b) for class 1-5 purse seine vessels (small purse seiners where no formal fleet-wide observer program exists) to assess trends even for rare encountered species.

Based on the findings mentioned above, the assessment team concludes that **the MSC Certificate for this fishery shall remain active**, subject to the agreed annual surveillance schedule and progress on the remaining conditions.

Table 3.1. Scores obtained by the fishery for each MSC Principle as published at the PCR and subsequent surveillance audits.

Principle	Score (PCR)	Score (1SA)	Score (2SA)
Principle 1 – Target Species	90.0	86.7	85,8
Principle 2 – Ecosystem	80.7	=	81,3
Principle 3 – Management System	81.9	=	=

Table 3.2. PIs scores of the certified fishery as published at the PCR and subsequent SAs. PI score above 80 are highlighted in green, while PI scores between 60 and 80 are highlighted in orange.

Principle	Component	Performance Indicator (PI)	PCR	1SA	2SA
One	Outcome	1.1.1 Stock status	100	=	=
	Management	1.2.1 Harvest strategy	85	70	=
		1.2.2 Harvest control rules & tools	80	75	=
		1.2.3 Information & monitoring	90	=	80
		1.2.4 Assessment of stock status	85	=	90
Two	Primary species	2.1.1 Outcome	90	=	=
		2.1.2 Management strategy	85	=	=
		2.1.3 Information/Monitoring	95	=	=
	Secondary species	2.2.1 Outcome	80	=	=
		2.2.2 Management strategy	85	=	=
		2.2.3 Information/Monitoring	85	=	=
	ETP species	2.3.1 Outcome	80	=	=
		2.3.2 Management strategy	85	=	=
		2.3.3 Information strategy	70	=	=
	Habitats	2.4.1 Outcome	70	=	=
		2.4.2 Management strategy	75	=	85
		2.4.3 Information	75	=	=
	Ecosystem	2.5.1 Outcome	80	=	=
		2.5.2 Management	80	=	=
		2.5.3 Information	75	=	=
Three	Governance and policy	3.1.1 Legal &/or customary framework	80	=	=
		3.1.2 Consultation, roles & responsibilities	75	=	=
		3.1.3 Long term objectives	100	=	=
	Fishery specific management system	3.2.1 Fishery specific objectives	75	=	=
		3.2.2 Decision making processes	75	=	=
		3.2.3 Compliance & enforcement	85	=	=
		3.2.4 Monitoring & management performance evaluation	80	=	=

4 Report details

4.1 Surveillance information

According to the 'MSC Surveillance Reporting Template v2.01' the following table shall be included.

Table 4.1- Surveillance information

1	Fishery name	
	ECHEBASTAR INDIAN OCEAN SKIPJACK TUNA PURSE SEINE FISHERY	
2	Unit(s) of Assessment (UoA)	
	<p><u>Target stock:</u> Skipjack Tuna (<i>Katsuwonus pelamis</i>). Indian Ocean stock</p> <p><u>Fishing Area:</u> FAO 51 & 57</p> <p><u>Fishing method:</u> Purse seine including all set types, specifically Fish Aggregating Device (FAD or associated) and free school (FSC or non-associated) Purse seiners owned and operated by the Echebastar Group – Pesqueras Echebastar S.A. (Echebastar Fleet SLU and Hartswater Limited). The updated list of vessels can be downloaded from the MSC website</p> <p><u>Fishing operators:</u> Echebastar S.A. (Echebastar Fleet SLU and Hartswater Limited). The updated list of vessels can be downloaded from the MSC website</p> <p><u>Other eligible fishers</u> There are no other eligible fishers</p>	
3	Date certified	Date of expiry
	09/11/2018	08/05/2024
4	Surveillance level and type	
	Level	The surveillance level determined in the PCR was 6 (4 on-site surveillance audits). However, due to the current Covid-19 health crisis (preventing travel) and the MSC Derogation 6 on Covid-19 Fishery Conditions Extension which allows an extension of existing deadlines on eligible conditions (i.e., all the conditions but one in the current assessment) by 12 months, the CAB conducted an off-site surveillance audit (see section 7.1 for more details). In addition, the number of auditors (as explained in the 1st Surveillance audit) has been brought down from 3 (as indicated in the PCR) to 2 (see section 7.3 for more details).
	Type	Off-site visit (see Appendix 7.1.1 for more details).
5	Surveillance number	
	1st Surveillance	
	2nd Surveillance	X
	3rd Surveillance	
	4th Surveillance	
	Other (expedited etc)	
6	Surveillance team leader	
	José Ríos ²	

² See the Surveillance announcement at the MSC website for more details on how the team meets the competency criteria and the areas that they are responsible for.

7	Surveillance team members <i>[remove if not applicable]</i>
	Carola Kirchner ³
8	Audit/review time and location
	Off-site visit. Remote meetings held between May 19 and 27, 2021. See Appendix 7.1 for more details.
9	Assessment and review activities
	During the site visit, the team conducted assessment activities in accordance with FCP 7.28.15-18. In the case of the current fishery the team concentrated in: (i) checking for any relevant modification affecting the fishery; (ii) assess progress against conditions set to the fishery; (iii) ensuring consistency of outcomes in overlapping fisheries. See Appendix 7.1 for details on the people interviewed and for details on the stakeholder engagement strategy, and Appendix 7.2 for details on topics discussed during the site visit and other stakeholder inputs. Harmonization activities with overlapping fisheries are described in Appendix 7.4 .

4.2 Background

Major changes to the fishery since the last surveillance are outlined below:

4.2.1 Personnel involved in science, management or industry

General elections were held in Seychelles in October 2020 to elect the President and members of the National Assembly. As a result, a new President (Wavel Ramkalawan from the LDS) was elected. The new President re-structured the former Ministry of Fisheries and Agriculture into the new Ministry of Fisheries and Blue Economy, and Jean-Francois Ferrari was appointed in the position of Minister for Fisheries and the Blue Economy on November 3, 2020. Roy Clarisse was appointed as the Principal Secretary for Fisheries (replacing Jude Talma). No changes were identified at the Seychelles Fisheries Authority (SFA).

In the case of Spain, there have been the following new appointments within the General Directorates of Sustainable Fisheries and General Directorate of Fisheries Management and Aquaculture (both under the General Secretariat for Fisheries):

- Maria Isabel Artime García was appointed in 2020 as the new General Director for Sustainable Fisheries (while Antonio Lizcano remains as the head of the General Subdirectorate for Agreements and RFMOs)
- Borja Velasco Tuduri was appointed in 2021 as the head of the General Subdirectorate for fisheries inspection and fight against IUU fishing (while Juan Ignacio Gandarias Serrano remains as the General Director for the Fisheries management and Aquaculture).

No significant changes were identified by the team in the composition and/or roles of the personnel involved in science, or the industry concerned with the certified fishery.

4.2.2 Certified fleet and client group

The client group owning the certificate remains the same: Pesqueras Echebstar S.A. The list of vessels included remains the same as for the previous surveillance audit. The list of certified vessels was published at the [fishery-specific MSC site](#) in June 2019, and updated details on the fishing licenses and landing reports for each of the vessels can be found at the specific site created by Echebstar to share all relevant information related to the MSC certification (<https://echebstar.com/echebstar-certificada-por-msc/msc-up-to-date/2020-annual-surveillance-audit/documents/>).

The Echebstar Sustainability Working Group (ESWG) described in the previous surveillance report has been active and keeps the same members. All the minutes of their meetings held, and the documents elaborated, are available at the site.

4.2.3 Fishery management and regulatory framework

³ See the Surveillance announcement at the MSC website for more details on how the team meets the competency criteria and the areas that they are responsible for.

4.2.3.1 IOTC fishery management

Since the previous surveillance audit held in November 2019, the Indian Ocean Tuna Commission held its 24th Session in November 2020. Due to the pandemic, the Commission met through video conference for 2 hours per day over 5 days (between November 2 and 6). The meeting report and meeting documents can be consulted and downloaded at the [IOTC site](#). No new CMMs were adopted, so the two most relevant fishery-specific CMMs (Res 16/02 on HCRs for skipjack, and Res 19/01 on an interim plan for rebuilding the IO yellowfin tuna stock) has remained unchanged since previous surveillance audit.

The Commission held its 25th Session in June 2021. Again, this session was held through video conference for 4 hour per day over days (between June 7 and 11). The meeting report was still not available at the time of preparing this report, but almost all meeting documents and CMM proposals were available at the IOTC site before the site visit of the current surveillance audit took place. The [IOTC CIRCULAR 2021-31](#) confirmed that 3 new Resolutions were adopted at the 25th Session of the Commission. These CMMs shall become binding on Members, 120 days from the date of its notification, i.e. 19 October 2021, unless an objection is lodged.

- Resolution 21/01 on an interim plan for rebuilding the IO yellowfin tuna stock in the IOTC Area of competence was adopted.
- Resolution 21/02 on establishing a programme for transshipment by large-scale fishing vessels.
- Resolution 21/03 on harvest control rules for skipjack tuna in the IOTC area of competence

Updates on Res 21/01 and Res 21/03 are provided below, together with an update on Res 19/02 which entered into force in January 2020 and at last, an update on the activity developed by the TCAC in 2020 and 2021.

(i) Resolution 21/01 on an interim plan for rebuilding the IO yellowfin tuna stock in the IOTC Area of competence was adopted.

At the 25th Session of the Commission held in June 2021, the European Union and the Maldives tabled their own proposals to amend Resolution 19/01. Both the EU and the Maldives proposals were aiming to address shortages identified in the implementation of the rebuilding plan for the yellowfin (e.g. F_{2017} was 20% above the target reference point, consistently failure to achieve the catch reductions required by the interim plan, reductions achieved by some fisheries subject to catch reductions being offset by increase in catches from fisheries exempt and some fisheries subject to catch limits, increase in number of juvenile yellowfin tuna and bigeye tuna being caught as a result of a change in the fishing strategy of purse seine vessels to maintain yellowfin tuna catch reduction targets...). The amendments in these proposals were aimed to:

- Reduce overall yellowfin tuna catch in the IO in line with the scientific advice
- Ensure the proportionate participation of all CPCs to the efforts to keep the level of YFT catches at sustainable levels (eliminate exemptions provided for in 19/01)
- Differentiate reductions based on developments status as reflected in UN Fish Stock agreement
- Strengthen the penalty, compliance and monitoring mechanisms.
- Reduce the role of supply vessels in purse seine operations to reduce fishing pressure on juvenile yellowfin tuna

Finally, the [IOTC CIRCULAR 2021-31](#) confirmed that Resolution 21/01 on an interim plan for rebuilding the IO yellowfin tuna stock in the IOTC Area of competence was adopted at the 25th Session of the Commission. The main difference with previous Res 19/01 is that catch limits are subject to higher reductions and different criteria. An excerpt on the Catch Limits as included in the Res 21/01 is copied below:

Catch limits

5. CPCs whose reported catches of yellowfin tuna for 2014 were above 5000t shall reduce their catches of yellowfin tuna by 21% compared to 2014 yellowfin tuna catch, except:

- a) If those CPCs are Coastal Developing States, they shall reduce their catches of yellowfin tuna by 12% compared to 2014 yellowfin tuna catch;
- b) If those CPCs are Small Island Developing States or Least Developed States, they shall reduce their catches of yellowfin tuna by 10% compared to 2014 yellowfin tuna catch.

6. CPCs whose reported catches of yellowfin tuna for 2014 were below 5000t and their average catches of yellowfin tuna for the period from 2017 to 2019 inclusive, were above 5000t, shall reduce their catches of yellowfin tuna by 21% compared to 2014 yellowfin tuna catch, except;

- a) *If those CPCs are Coastal Developing States, they shall reduce their catches of yellowfin tuna by 12% compared to average of 2017 – 2019 yellowfin tuna catch;*
- b) *If those CPCs are Small Island Developing States or Least Developed States, they shall reduce their catches of yellowfin tuna by 10% compared to average of 2017 – 2019 or 2018 yellowfin tuna catch, whichever is higher.*
7. *CPCs whose reported catches of yellowfin tuna for 2014 were below 5000t and their average catches of yellowfin tuna for the period from 2017 to 2019 inclusive were between 2000t to 5000t, shall not exceed their maximum reported yellowfin tuna catches between 2017 to 2019.*
8. *CPCs whose reported catches of yellowfin tuna for 2014 were below 5000t and their average catches of yellowfin tuna for the period from 2017 to 2019 inclusive were below 2000t, shall not exceed their catches above 2000t*
9. *In respect of paragraph 8, and recalling paragraph 4, for conservation purposes three CPCs have agreed exceptionally for 2022 (or 1 year) not to exceed yellowfin tuna catches at different levels¹*
10. *In applying the catch reductions in paragraph 5, Small Island Developing State CPCs and Least Developed State CPCs can either choose between catches of yellowfin tuna reported for either 2014, or 2015 or their average catches for the period from 2017 to 2019.*
11. *In applying the catch reductions in paragraph 5 for Distant Water Fishing CPCs, if the average yellowfin tuna catches between 2017 – 2019 were below 10,000t, CPCs shall reduce their yellowfin catch by 13% compared to 2014 levels.*
12. *CPCs will determine appropriate methods for achieving these catch reductions, which could include capacity reductions, effort limits, etc., and will report to the IOTC Secretariat in their Implementation Report every year.*
13. *Any CPC who submits updated catch histories of yellowfin tuna in accordance with IOTC resolution 15/01 and verified by the secretariat and the IOTC Scientific Committee, shall have a right to access yellowfin tuna in accordance with the limits prescribed in the Resolution.*

(ii) Resolution 21/03 On on harvest control rules for skipjack tuna in the IOTC area of competence

The total catches of skipjack tuna in 2018 were 30% larger than the resulting catch limit for the skipjack HCR for the period 2018-2019 (470,029t) (applying the HCR specified in Res 16/02). Furthermore, the 2019 skipjack catch from the Indian Ocean was 547,248t while the maximum catch limit calculated applying the skipjack HCR is 513,572t for the period 2021-2023. Therefore, proposals tabled by Maldives and the EU amending Res 16/02 agreed that reaching the management objectives defined in Res 16/02 requires that the catch limits adopted by the skipjack HCR are implemented effectively and that there is a need for the Commission to ensure that catches of skipjack tuna during this period do not exceed the agreed limit. The EU proposal (IOTC, 2021) presented a detailed system to implement total annual catch limits, as shown in the excerpt presented below:

14 bis – Implementation of the total annual catch limits

- a) *For the year 2022 and 2023, with a view to counteract the likely risk of overshooting the catch limit of 513.572 MT a specific mechanism shall be implemented against the average level of catches reported by CPCs for the years 2018-2019.*
- b) *CPC whose average catches of skipjack reported for the period 2018-2019 were above 5000 MT shall reduce their skipjack catches in 2022 by 10% from the 2018-2019 levels.*
- c) *Unless agreed otherwise during the IOTC annual meeting of 2022, CPC whose average catches of skipjack reported for the years 2018-2019 were above 5000 MT shall reduce their skipjack catches in 2023 by an additional 10% from the 2018-2019 levels.*
- d) *In consideration of their aspirations and special requirements, Developing Coastal States and Small Island Developing States, when implementing sub-paragraphs 14bis b) and c) shall reduce their level of skipjack catches by 7% in 2022 and by an additional 7% in 2023 from the 2018-2019 levels.*
- e) *CPCs not subject to catch reduction under sub-paragraphs 14 bis b), c) and d) shall endeavor to maintain their annual catches of skipjack within the average level reported for the period 2018-2019 and in no circumstance shall increase their average catches by more than 1000 MT.*
- f) *Possible increases of catches under sub-paragraph 14 f) shall be allocated only to the flagged vessels of the concerned CPCs and cannot be transferred to fishing vessels of other CPCs*
- g) *Any CPC that have not respected the catch reductions established in sub-paragraphs 14 b), c), d), e) and f) in a given year, shall implement, in the following year, an additional reduction corresponding to 100% of the over-catch.*
- h) *This paragraph shall not pre-empt or prejudice future allocation negotiations.*

However, Resolution 21/03 on HCRs for skipjack in the IOTC area of competence, amending Res 16/02 did not include this system proposed by the EU, and adopted the Maldives approach. The final text on the implementation of the catch limits as included in Res 21/03 reads as follows (sentences added to previous text in Res 16/02 are in bold and highlighted yellow):

11. *The catch limit shall by default, be implemented in accordance with the allocation scheme agreed for skipjack tuna by the Commission. In the absence of an allocation scheme, the HCR shall be applied as follows:*

- a) *If the stock is at or above the Threshold level (i.e., $B_{curr} \geq 0.4B_0$), then the HCR shall establish an overall catch limit **and catches of skipjack tuna for any given year shall be maintained at or below the overall catch limit established by the HCR.***
- b) *If the stock falls below the Threshold level (i.e., $B_{curr} < 0.4B_0$), the fishing mortality reductions shall be implemented proportionally by CPCs for catches over 1 percent of the catch limit established by the HCR with due consideration to the aspirations and special requirements of Developing Coastal States and Small Island Developing States.*
- c) ***The Commission may consider to develop and adopt Conservation and Management Measure(s) to ensure catches of skipjack tuna are maintained at or below the overall catch limit established by the HCR and to apply fishing mortality reductions if the stock falls below the Threshold level (i.e. $B_{curr} < 0.4B_0$), with due consideration to the aspirations and special requirements of Developing Coastal States and Small Island Developing States, no later than the annual session of the IOTC in 2022.***
- d) *This paragraph shall not pre-empt or prejudice future allocation negotiations.*

(iii) Update on the work plan for allocation of fishing opportunities

The Technical Committee on allocation criteria (TCAC) met in two occasions since the previous surveillance audit: TCAC06 in September 2020 and TCAC07 in March 2020. All meetings were organized through videoconference. Meeting reports and documents can be downloaded from the [IOTC site](#).

As a result of previous discussions and simulations, two proposals for a quota allocation system were presented and discussed at TCAC06: one prepared by several coastal states (Maldives, South Africa, Australia, Comoros, Indonesia, Kenya, Madagascar, Mozambique, Pakistan, Seychelles, Somalia, Tanzania) and another one prepared by that EU. The Chair then presented a way forward for framing the future discussions of the Committee based on themes, and a comparative table of the two proposals currently on the table was shared. Participants supported the thematic structure as a basis for framing the future discussions of the TCAC.

As endorsed by the Commission, the TCAC07 was framed based on 9 themes:

- (1) General principles for allocation regime
- (2) Eligibility to allocations
- (3) Scope of allocation regime
- (4) Allocation structure
- (5) Allocation adjustments
- (6) Weighting of allocation criteria
- (7) Implementation of allocation regime
- (8) Transition to a new allocation regime
- (9) Final clauses

While broad ranges of views were expressed on each theme, there was general agreement on several topics, and divergent views remain on some key topics. There was general agreement from the TCAC Members on principles that should form the foundation of an allocation regime for the IOTC. Members also agreed that CPs, CNCPs and new coastal State entrants should be eligible to receive allocations, while agreeing that incentives should be built in the allocation regime for CNCPs becoming a Contracting Party to the Commission, and mechanisms to balance the associated impacts on current Contracting Parties. While no consensus has yet been achieved on the scope of the allocation regime, there was a general agreement that the Commission should prioritise its application to yellowfin, bigeye, skipjack and albacore tunas, and swordfish.

Members discussed at length the possible criteria for establishing allocations. There was a general recognition that, in no agreed order of priority or importance, catch history and coastal States rights related to their status and factors related to developing coastal States' needs and aspirations, are likely to form the basis of these criteria. Polarized views remain regarding the attribution of catches taken within coastal State's EEZs as a component of the catch-based allocation criteria. There was recognition that a solution is needed that either addresses this issue or avoids it. Having regard to the socio-economic impacts of changes that may result from the implementation of the allocation regime, Delegations also acknowledged the need for a step-wise, negotiated outcome that transitions fleets from the current patterns of fishing to a future allocation regime. A number of other issues were discussed including possible adjustments to

allocations to factor in over-catch; non-compliance of relevant CMMs and changes in TACs; allocation adjustments to ensure fair and equitable outcomes that may otherwise be impacted by unforeseen circumstances in the allocation formula derived; process for establishing and reconciling allocations; allocation temporary transfers; and the period of allocations, and the term of the allocation regime.

Members agreed that further discussions on all of these topics would be required to achieve consensus on an allocation regime, and that a draft text from the Chair for the next TCAC08 meeting may help advance these discussions. The Chair proposed that the TCAC agree to set for itself a target date to complete an allocation regime proposal by end of December 2022, for consideration by the Commission in 2023. The concept of a target date was welcomed by delegations in recognition of the fact that the process had been going on for some time and a deadline may help to make progress. Some delegations expressed their concerns that a deadline could force unwilling compromise on important issues that had still not been resolved.

Besides, a third meeting (TCAC08) is scheduled for June 28. The meeting report was still not available at the time of preparing this report, but all meeting documents and CMM proposals were available at the IOTC site before the site visit of the current surveillance audit took place. As mandated by the Commission the Chair prepared a proposal for an allocation regime (IOTC-2021-TCAC-04) to be discussed during the TCAC08. This proposal details a comprehensive allocation regime which include different options for those topics where consensus has not been reached. The Chair also provides a summary of where things stand detailing all the topics where a consensus view is reached, topics where there is still divergent views or has not be thoroughly discussed, and topics where there are polarized principled views. Strong opposing views are focused on the attribution of catches taken in EEZ of coastal States, and whether catch history should qualify as a right.

Further, implementing an allocation scheme will have several implications on different existing processes at the IOTC (staff needs at the Secretariat and existing Committees, creation of new Committees, several CMMs to be amended, timing of the different steps needed for an allocation regime...). Therefore, a draft plan on the implications for existing IOTC processes (IOTC-2021-TCAC08-06) has also been prepared for its discussion during TCAC08.

(iv) Res 19/02 on procedures on FADs management

RECALLING that Resolution 13/08 [superseded by Resolution 15/08, by Resolution 17/08, then by Resolution 18/08] established procedures on a fish aggregating device (FAD) management plan, including more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species

Res 19/02 entered into force in January 2020 and supersede Res 18/08. As previous Resolutions on FADs (Res13/08, 15/08, 17/08 and 18/08), this new CMM establishes procedures on a fish aggregating device (FAD) management plan, including more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species. This CMM aims to: (i) reduce juvenile bigeye tuna and yellowfin tuna mortalities from fishing effort on FADs, (ii) improving FAD design to reduce the incidence of entanglement of marine turtles, sharks and other species, including the use of biodegradable materials. Some of the measures included in this CMM are listed below:

- The use of instrumented buoy is mandatory on all drifting FADs and prohibits the use of any other buoys, such as radio buoys, not meeting this definition.
- The maximum number of operational buoys followed by any purse seine vessel is set at 300 at any one time. The number of instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 500. No purse seine vessel shall have more than 500 instrumented buoys (buoy in stock and operational buoy) at any time.
- All purse seine vessel, supply or support vessel shall declare to its respective CPC, the number of instrumented buoys onboard, including each unique identifier of the instrumented buoy before and after each fishing trip
- Reactivation of an instrumented buoy shall only be possible once it has been brought back to port, either by the vessel tracking the buoy/ associated supply or support vessel or by another vessel and has been authorized by the CPC.
- CPCs shall require vessels flying their flag and fishing on DFADs to annually submit the number of operational buoys followed by vessel, lost and transferred (total number of DFADs tagged at sea, by deploying an instrumented buoy on a log or another vessel DFAD already in the water) by 1° by 1° grid area and month strata and DFAD type under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).
- All CPCs shall ensure that all fishing vessels as referred to in paragraph 2 shall record fishing activities in association with FADs using the specific data elements found in Annex III (DFAD) and Annex IV (AFAD) in the section of the "FAD-logbook"

- CPCs having vessels flying their flag and fishing on FADs shall submit, to the Commission, on an annual basis, Management Plans for the use of FADs. Annex I provides guidelines for preparation of dFADs Management Plans. CPCs' Management Plans shall be analysed by the IOTC Compliance Committee.
- CPCs shall submit to the Commission, 60 days before the Annual Meeting, a report on the progress of the management plans of FADs,
- To reduce the entanglement of sharks, marine turtles or any other species, CPCs shall require their flagged vessels to use non-entangling designs and materials in the construction of FADs
- To reduce the amount of synthetic marine debris, the use of natural or biodegradable materials in FAD construction should be promoted. CPCs shall encourage their flag vessels to use biodegradable FADs in accordance with the guidelines at Annex V with a view to transitioning to the use of biodegradable FADs, with the exception of materials used for the instrumented buoys, by their flag vessel from 1 January 2022. CPCs shall, from 1 January 2022, encourage their flag vessels to remove from the water, retain onboard and only dispose of in port, all traditional FADs encountered (e.g. those made of entangling materials or designs).
- CPCs are encouraged to conduct trials using biodegradable materials to facilitate the transition to the use of only biodegradable material for DFADS construction by their flagged vessels.
- CPCs shall ensure that the instrumented buoy attached to the DFAD contain a physical, unique reference number marking (ID provided by the manufacturer of the instrumented buoy) and the vessel unique IOTC registration number clearly visible. A new marking scheme shall be developed by the ad-hoc FAD working group.
- In order to support the monitoring of compliance with the limitation in the number of FADs, while protecting business confidential data, the instrumented buoy supplier company or the CPCs shall, starting 1 January 2020, report, or require their vessels to report, daily information on all active FADs to the Secretariat. Such information shall contain, date, instrumented buoy ID, assigned vessel and daily position, which shall be compiled at monthly intervals, to be submitted with a time delay of at least 60 days, but no longer than 90 days.
- The Commission shall establish a DFAD tracking and recovery policy at its annual session in 2021, on the basis of recommendations from the ad-hoc FAD working group. The policy shall define DFAD tracking, reporting of lost DFADs, arrangements to alert coastal States of derelict/lost DFADs at risk of beaching in near real-time, how and who recovers the DFADs, how the recovery costs are collected and shared.
- The IOTC Secretariat shall submit a report, on an annual basis, to the IOTC Compliance Committee on the level of compliance of each CPC with operational buoy limits, annual limits of instrumented buoys purchased.

4.2.3.2 Update on the EU/Spanish fisheries management

In view of the yellowfin tuna rebuilding plan and the catch limit established by the IOTC Res 16/01, since 2017 the EU Council sets a Total Allowable Catch (TAC) for the EU and establishes an allocation by Member State. The Council Regulation (EU) 2020/123 of 27 January 2020 fixes for 2020 the fishing opportunities for yellowfin tuna in the IOTC Area (among many other stocks in Union waters for Union fishing vessels in certain non-Union waters), while the Council Regulation (EU) 2021/92 of January 2021 fixes the fishing opportunities for 2021. The TAC for the EU (77,698 tons) and the quota allocated to Spain (45,682 tons) has remained the same since 2017.

The Spanish Ministry of Agriculture, Fisheries and Food (MAPA) issues an annual regulation for managing the fishery of yellowfin and tropical tunas in the Indian Ocean. The regulation sets catch limits for each of the authorised vessels, trying to avoid that the Spanish fleet overages the yellowfin quota allocated to Spain (45.682 tons). The regulation applicable during 2020 (*Order APA/93/2020, de 4 de febrero, por la que se regula el ejercicio de la pesca de rabil y túnidos tropicales en el Océano Índico en la campaña 2020*) set that vessels with a GT \geq 3,500 GT could catch up to 3,377 t of yellowfin tuna, while vessels with a GT \leq 3,500 GT could catch up to 2,658 t of yellowfin tuna. Further, this Order also set a limitation in relation to the total volume of catches of the 3 main tropical tuna species: yellowfin tuna, bigeye and skipjack. The regulation allows to request for adjustments between fishing vessels (to a maximum of 10%). The resulting catch limits applicable during 2020 after adjustments are presented in **table 4.2.3.1** However, due to the pandemic, the Spanish fleet had serious difficulties in carrying out crew replacements, due to flight restrictions and the imposition of quarantines by the countries where the vessels operate. For this reason, some vessels have seen their activity impeded or severely hampered, and the representative associations of the sector requested to the Spanish authorities the possibility of managing the catch limits flexibly between groups of vessels. This was accepted by the SGP, on an exceptional basis, through Order APA/811/2020.

The catch limit of tropical tunas per vessel was established on the basis of scientific reports provided by the Spanish Institute of Oceanography (IEO) regarding the proportions of different species in tropical tuna fishing, in which yellowfin accounts for at least 30% of the tropical tuna catches. This establishes a catch limitation for the 3 tuna species, calculated as the ratio between the yellowfin catch limitation and the 0.30 rate. The objective of this limitation in the total catch is to avoid yellowfin overfishing, in a fishery where it is not possible to exclude this species from the rest.

Table 4.2.3.1 List of Spanish tuna purse seiners authorised to target tropical tunas in the IO, showing their respective catch limits. **First column:** Name of the vessel; **second column:** Gross Tonnage; **third column:** YFT catch limit (Kg) in 2020; **Fourth column:** Catch limit for the 3 tropical tuna species in 2020. Source: Orden APA/238/2020, del 12 de marzo.

Nombre	GT	Limite captura de rabil en kilos 2020	Limite captura de patudo, listado y rabil en conjunto en kilos 2020
Alakrana.	3.716	3.377.000	11.256.667
Albacora Uno.	3.584	3.377.000	11.256.667
Albatun Dos.	4.406	3.377.000	11.256.667
Albatun Tres.	4.406	3.377.000	11.256.667
Doniene.	3.674	3.377.000	11.256.667
Izurdia.	4.089	3.377.000	11.256.667
Txori Argi.	4.134	3.377.000	11.256.667
Txori Zuri.	3.671	3.377.000	11.256.667
Albacan.	2.347	2.298.500	7.661.667
Albacora Cuatro.	2.082	2.658.000	8.860.000
Elai Alai.	2.217	2.658.000	8.860.000
Itsas Txori.	2.994	3.017.500	10.058.333
Playa De Aritzatxu.	2.458	2.658.000	8.860.000
Txori Gorri.	2.937	2.658.000	8.860.000
Aterpe Alai.	2.789	2.658.000	8.860.000
Total.		45.622.000	152.073.336»

The latest annual regulation issued by the MAPA regulating the fishery for 2021 is Orden APA/25/2021, de 19 de Enero, por la que se regula el ejercicio de la pesca de túnidos tropicales en el Océano Indico y se crea un censo de atuneros cerqueros congeladores autorizados a la pesca de tunidos tropicales en el Océano Indico. This regulation includes several modifications compared to previous years:

- A specific Census of freezer purse seiners authorized to fish for tropical tuna in the Indian Ocean (CATI) is created. The CATI includes freezer tuna purse seine vessels in the General Registry of the Fishing Fleet with catches of yellowfin in the Indian Ocean in any of the years of the 2012-2016 period, as well as new fishing vessels that have been registered. registration in the General Registry of the Fishing Fleet in substitution of vessels with historical catches in said period. The General Secretariat for Fisheries will update the CATI (including auxiliary vessels) during the first quarter of each year.
- There is no longer a limit on the total catch volume for the three main tropical tuna species (yellowfin tuna, bigeye and skipjack).
- The system to allocate individual catch limits is now based on historical catches of the vessel (70%) and GT (30%).

Table below shows the list of authorised vessels for 2021, together with the allocated percentage of the Spanish quota for IO yellowfin.

Table 4.2.3.2. Specific census of industrial purse seiners authorized for fishing tropical tuna in the Indian Ocean in 2021, and allocated % of the Spanish quota for IO yellowfin. Source: Orden APA/25/2021, del 19 de Enero.

Código	Buque	% cuota de rabil España
26547	ALAKRANA	8,908351
22090	ALBACAN	5,577146
755	ALBACORA CUATRO	5,995828
23164	ALBACORA UNO	3,342036
25923	ALBATUN DOS	8,512197
26123	ALBATUN TRES	3,793354
100101	ATERPE ALAI	5,144659
23194	DONIENE	5,755224
22462	ELAI ALAI	4,887882
27547	ITSAS TXORI	4,637273
26158	IZURDIA	7,933852
27578	PLAYA DE RIS	2,587639
25179	PLAYA DE ARITZATXU	4,374856
20232	PLAYA DE NOJA	2,848669
25911	TXORI ARGI	9,505596
27068	TXORI GORRI	7,680655
27691	TXORI ZURI	7,514783
	Fondo no asignado	1,000000
		100,000000%

4.2.3.3 Sustainable Fisheries Partnership agreement between the EU and Seychelles

In February 2020, the EU and the Republic of Seychelles signed an agreement valid for 6 years (2020-2026) that establishes the principles, rules and procedures governing:

- economic, financial, technical and scientific cooperation in the fisheries sector with a view to promoting sustainable fishing in the Seychelles fishing zone to guarantee the conservation and sustainable exploitation of fisheries resources, and developing the Seychelles fisheries sector,
- the conditions governing access by Union fishing vessels to the Seychelles fishing zone,
- cooperation on the management, control and surveillance measures in the Seychelles fishing zone with a view to ensuring that the above rules and conditions are complied with, that the measures for the conservation and sustainable exploitation of fish stocks and management of fishing activities are effective, and that IUU fishing is prevented,
- partnerships between operators aimed at developing economic activities in the fisheries sector and related activities, in the common interest.

A Joint Committee shall be set up to monitor the application of this Agreement. The [agreement](#) and the two subsequent Council Regulations ([Council Regulation 2020/272](#) and [Council Regulation 2020/271](#)) were published at the Official Journal of the European Union. Council Regulation 2020/271 sets the allocation of fishing opportunities under the Protocol on the implementation of the sustainable fisheries partnership agreement between the EU and Seychelles (2020-2026).

4.2.3.4 Seychelles fisheries management

In 2020, the Seychelles' purse seiner fleet was allocated a yellowfin tuna annual quota of 33,211 metric tonnes, which was equally divided among the 13 vessels flying the flag of Seychelles.

As already detailed in the previous surveillance report, in 2019 the Government of Seychelles published the 'Seychelles Fisheries Sector Policy And Strategy 2019' (click [here](#) to download it) and the 'Fisheries Comprehensive Plan' (click [here](#) to download it). No significant changes of the Seychelles fisheries management were identified by the team during the audit.

Although it cannot be considered as a modification in the National fisheries management, it is noticeable that in March 2021 Seychelles has become the first country to submit its report to the [Fisheries Transparency Initiative](#) (FITI). The FITI is a global partnership that seeks to increase transparency and participation for a more sustainable management of marine fisheries. By making fisheries management more transparent and inclusive, the FITI promotes informed public debates on fisheries policies and supports the long-term contribution of the sector to national economies and the well-being of citizens and businesses that depend on a healthy marine environment. The FITI is not operated by one organisation, nor does it represent the work of a single interest group. Instead, the diversity of different stakeholders

(ensuring equal participation from government, companies and civil society) is a central feature of how the FiTI works, for national implementations as well as international governance. The FiTI is a voluntary initiative; however, once a country has decided to participate, mandatory requirements must be followed. The Seychelles first report to the FiTI is available online (click [here](#) to download it). The figure below summarises the main transparency observations found in the first Seychelles report to FiTI. The FiTI report highlights several opportunities for improvement. Seychelles National multi-stakeholder Group has determined 34 recommendations on how to further strengthen fisheries transparency in the country.



Figure 4.2.3.1. Summary of transparency observations found in the first Seychelles report to FiTI. Source: https://www.mfa.gov.sc/uploads/downloads/FiTI_SYC_LaunchForum2pager_20210415.pdf

4.2.4 Monitoring and compliance

During the site visit the team had the chance to get feedback from the competent authorities of the flag States of the certified fleet: the SFA in Seychelles, and the SGP in Spain. In the case of the SFA, the team had the chance to have a videoconference with a representative and detailed information was shared later via email, while in the case of the SGP the exchange of information was restricted to the email. The team is not aware of any allegations raised against the certified fleet by any of the coastal countries where the fleet operates under bilateral agreements.

According to the SFA representative interviewed as part of the surveillance audit, no problems with the Echebatar fleet occurred during 2021. The SFA representative interviewed confirmed that the pandemic affected their capacity to monitor YFT quota consumption (e.g. they were not capable of reporting back the fleet every 3 months, as they were normally doing in previous years), made difficult to access on board and made inspections less effective. On the other hand, 10 new fisheries inspectors were incorporated since the previous surveillance audit, strengthening its human resources to inspect all tuna landings and transshipments from Seychellois vessels, and at least 5% of landings/transshipments performed by foreign vessels in Seychelles. The SFA focuses on inspecting the Seychelles flagged vessels for the implementation of the yellowfin quota. However, as in previous years, for foreign vessels under the MSC certification, a special arrangement was made for SFA's observers to monitor 100% landings/transshipment, which are later certified by the Observer or the Observer Logistic Coordinator.

The table below presents data shared by the SGP on the IO-YFT quota consumption between 2017 and 2020. The Spanish fleet did not overage its yellowfin quota allocation in 2019 or 2020, unlike in previous years (2017 and 2018).

Table 4.2.4.1 YFT annual quota allocated to Spain in 2017 and 2018 and total YFT annual catches of the Spanish fleet

Año	Cuota	Consumo
2017	45.682 t	46.386 t
2018	45.354 t	46.706 t
2019	43.543 t	42.317 t

2020	45.682 t	44.232 t
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The SGP confirmed that the specific inspections plan for the Spanish purse seine fleet operating at the IOTC was completed and no infringements in 2020 were communicated to the team.

4.2.5 Traceability issues

No changes were declared by the client in relation to traceability since previous the surveillance audit, and the team has not identified any changes in regulations affecting this matter.

4.2.6 Scientific based information related to P1

A new stock assessment has become available for the Indian Ocean Skipjack since previous surveillance audit. These new results are very similar to the previous results, therefore no rescoring of P1.1.1 is required at this stage. These results also confirm that, even with the most recent over-catches the stock, is estimated to be not overfished and no overfishing is taking place. This, together with other actions implemented at IOTC level, have led the team to consider that Condition 10 on PI 1.2.1 could be closed, and PI 1.2.1 was re-scored. The new assessment results are summarized below.

4.2.6.1 New Stock assessment

Fu (2020) presents a new stock assessment for Indian Ocean Skipjack (*Katsuwonus pelamis*) using Stock Synthesis 3 (SS3). The assessment uses a spatially aggregated, age structured model that integrates multiple datasets into a unified framework. The assessment includes catch data grouped into four separate fisheries covering the period from 1950 through to 2019, two CPUE series, length composition data, and tag-recapture data. Key elements and core assumptions in the assessment model are summarised below:

- The population model is age based, spatially aggregated, and seasonally structured.
- The model is iterated on an annual cycle consisting of four seasons.
- The model assumes that there is a shared spawning stock and total recruitment follows a Beverton-Holt relationship, with annual deviates and temporal variability in the proportional distribution of recruits among four seasons.
- Seven fleets were defined on the basis of gear and fleet of operation: 1. PL – Maldivian Pole and Line fleet. 2. PSLs - FAD/log associated Purse Seine (PS) sets from the EU/Seychelles fleets. 3. PSFS - unassociated PS sets from the EU/Seychelles fleets. 4. Gillnet - includes primarily gillnet fleets from Sri Lanka, Iran, Indonesia and Pakistan 5. Line - includes primarily handline, troll, and small coastal longline gears from Yemen, Sri Lanka, Maldivian, and Madagascar. 6. Longline – a trivial catches from Distant water longline fishing fleets 7. Other – includes all other fleets, primarily non-EU/Seychelles PS fleets, and small coastal fleets (e.g. ring nets).
- Standardised CPUE series are available from Maldives PL fleet and EU associated PS sets. (**Figure 4.2.6.1**) (PL index 1995 – 2018; PSLs index 1990 – 2019)
- Length composition data are available for all defined fisheries.
- Tagging data are available from the RTTPIO and small-scale tagging programmes.
- The model estimated non-parametric (cubic spline) length-based selectivity for each fleet independently (with sufficient flexibility to describe logistic, dome-shaped or polymodal functions).
- Estimated parameters include virgin recruitment, selectivity parameters, recruitment deviations, and the seasonal pattern of recruitment.
- Fixed parameters include stock recruit steepness and life history parameters describing growth and the maturity schedule.

A range of exploratory models were presented to explore the impact of key data and model assumptions on the stock assessment conclusions. A systematic approach was undertaken to evaluate interactions of model assumptions and to develop management advice. Possible combinations of model options considered in the exploratory phase were included in a final grid of model runs, including combinations of the following options:

- CPUE options PL index 1995 – 2018; PSLs index 1990 – 2019
- 8 age-classes, with the last representing a plus group. Growth based on a Richard growth model which approximate the two-stanza growth estimated by Eveson et al (2012). SD of length-at-age based on a coefficient of variation decreasing linearly from 20% at age 0 to 10% at maximum age
- 3 values of stock recruit steepness: $h=0.7, 0.8, 0.9$,

- Included only tag release from the RTTP program, and EU PS tag recoveries (adjusted for externally estimated reporting rates); tags assumed to be randomly mixed at the model region three quarters following three quarters of release
- M options: a constant value of 0.8.

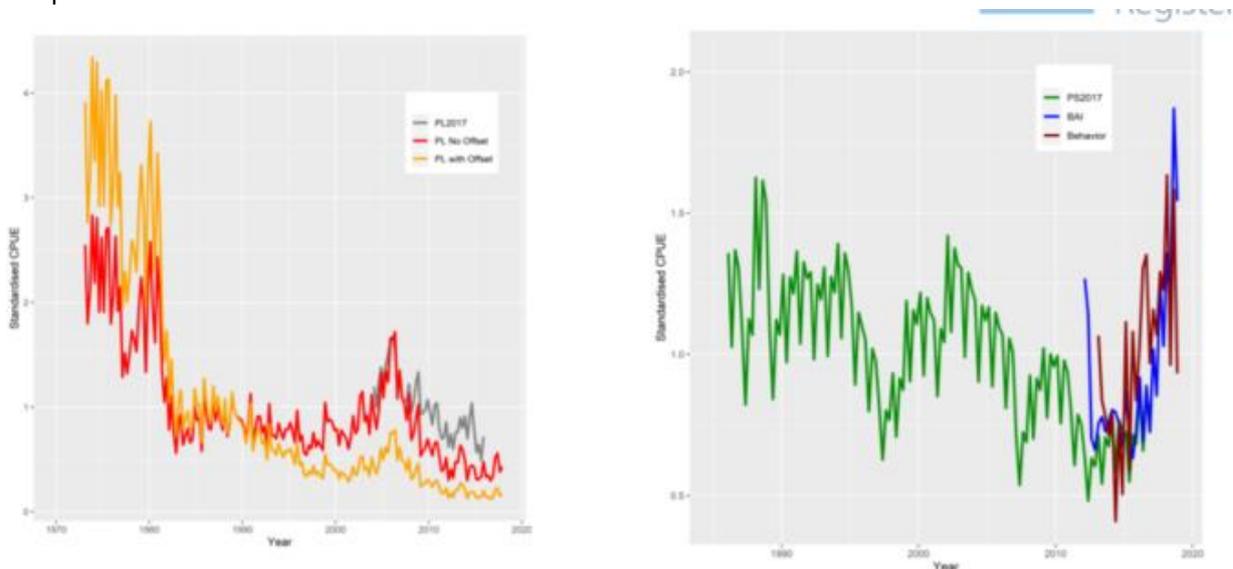


Figure 4.2.6.1: SKJ. : Standardised CPUE derived from the Bayesian GLM model for the Maldives PL fisheries 1970 – 2018: PL No Offset – index that did not include the subjective expert option on changes of fishing power; PL with Offset – index that included the expert option; PL2017 – index covering 2004 – 2017 used in the previous assessment. (left figure). Standardised CPUE for the European PS fleets, derived from (1) catch effort data from associated schools 1986 – 2019, (2) Buoy-derived Abundance Index (BAI) 2012 – 2019, and (3) associative dynamics with floating objects and acoustic data 2013 – 2019 (Behaviour). (Right figure) (Fu, 2020)

A common approach utilized by t-RFMOs to assess the structural uncertainty in the assessment is to run a grid of models that explore the interactions among model assumptions. The grid contains combinations of plausible parameter and assumption options to assess the sensitivity of stock status and management quantities to this uncertainty, with the aim of providing an approximate understanding of variability in model estimates due to assumptions in model structure not accounted for by statistical uncertainty estimated in a single run (McKechnie et al. 2016). The approach used here focuses on the model selection uncertainty, which is usually much greater than the statistical uncertainty conditional on any individual model (Kolody et al. 2011).

In the 2017 assessment (IOTC, 2017), no explicit base case model was chosen, and the final model options selected for management advice included 48 models with alternative assumptions on levels of steepness, tagging program options, tag mixing period, tag release mortality, and natural mortality (IOTC, 2017). The model with steepness of 0.8, constant M, RTTP tag program, tag mixing period of 3 quarters, and tag release mortality of 25% was considered as a reference model (Fu 2019). The 2017 reference model was updated sequentially to ensure a level of continuity, and to assess the influence of the additional data available. The model period was extended to 2019 with incremental changes made to the observational data and other configurations (see **Table 4.126.1** for details).

Table 4.2.6.1: IOTC-SKJ: Description of the sequence of model runs to update the 2017 reference model

Model	Description
<i>io h80 MAt t3 rttp tm25m</i>	2017 reference model
<i>Update-1Fleet</i>	The composite ‘Other’ fishery further separated into Gillnet, Line, Longline, and a miscellaneous ‘Other’ fishery group.
<i>Update-2Catch</i>	Model extended to include 2016–2018, with updated catches
<i>Update-3Data</i>	Revised and updated length composition data, PL CPUE index 2004 – 2018, PSLS index 1990 – 2019

The 2017 assessment model defined a composite fleet which aggregated several fisheries with distinctive size composition due to concerns of inadequate sampling. Consequently, the size composition of this fleet was influenced by fisheries which contributed very little catches yet had a conflicting trend to other main fleets (e.g. PL and PSLS). This led to some instability of the model, i.e., model estimates appeared to be particularly sensitive to even minor changes of the weighting on the size data. The revision of the fleet structure allows the model (Update-1Fleet) to better

characterise the selectivity pattern for a few important fishery components (e.g. gillnet and line fisheries), alleviating (but not eliminating) the data conflict. The model with the revised fleet structure increased the stock estimates by about 15% on average (**Figure 4.2.6.2**). Subsequent model update with only the catch data (Update-2Catch) yielded almost identical estimates of historical stock biomass (**Figure 4.2.6.2**), despite of the revisions made to the historical catches. Further updates with observational data (Update-3Data) has reduced the stock estimates in the late 1980/early 1990s (**Figure 4.2.6.2**), as a result of the changes in the CPUE series (i.e. the new PSLs CPUE dropped data before 1990, and the new PL CPUE had a steeper decline). Overall, these accumulative changes appeared to have yielded a stock estimate that is broadly similar to the 2017 assessment model (**Figure 4.2.6.2**).

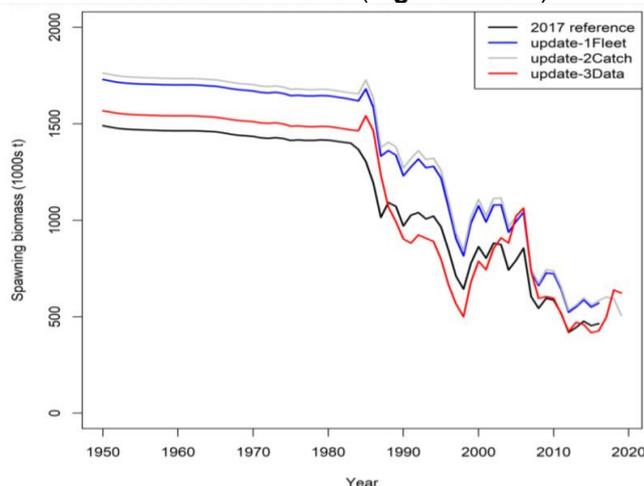


Figure 4.2.6.2: IOTC-SKJ. : Spawning biomass trajectories for IO skipjack tuna from the stepwise model updates for 2020. (Fu, 2020)

The final model ensemble corresponds to a full combination of two spatial structures, three steepness values, two levels of tag weighting, and two tag mixing period assumptions, with a total of 24 models (**Table 4.2.6.2**). These models encompass a wide range of stock trajectories (**Figure 4.2.6.3**). Across the model grid, initial spawning biomass (SSB_0) ranged from 1 515 250 to 2 141 300 t, current depletion ranged from 38% to 51% (SSB_{2019}/SSB_0). In general, higher stock biomass is associated with low weighting of tagging data, longer tag mixing period, and a lower steepness value. The weighting of the tagging data had a much bigger impact on the biomass estimates in the spatially aggregated models (**Figure 4.2.6.3**).

Table 4.2.6.2: IOTC-SKJ. Description of the final model options for the 2020 assessment. The final models consist of a full combination of options below, with a total of 24 models. The options adopted for the basic model is highlighted. (Fu, 2020)

Model options	Description
<i>Spatial structure</i>	<ul style="list-style-type: none"> • io – whole Indian Ocean one area model • io2 – East and western Indian Ocean two area model;
<i>Steepness</i>	<ul style="list-style-type: none"> • h70 – Stock-recruitment steepness parameter 0.7 • h80 – Stock-recruitment steepness parameter 0.8 • h90 – Stock-recruitment steepness parameter 0.9
<i>Tag weighting</i>	<ul style="list-style-type: none"> • <i>TagLamda01</i> – Tag lambda = 0.1 for both components of tag likelihood. • <i>TagLamda1</i> – Tag lambda = 1 for both components of tag likelihood.
<i>Tag mixing</i>	<ul style="list-style-type: none"> • t3 – Tag mixing period of 3 quarters • t4 – Tag mixing period of 4 quarters

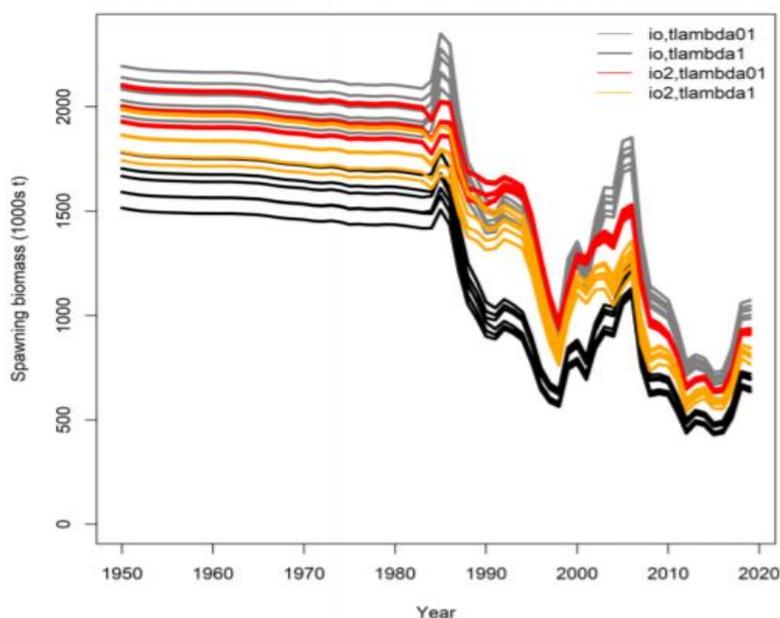


Figure 4.2.6.1: Spawning biomass trajectories from the final model options (Fu, 2020)

Estimates of stock status were determined for the final model options, including alternative assumptions on spatial structure, alternative values of SRR steepness, tag mixing period, and the alternative weighting of the tag data. Stock status was determined for individual models, as well as the for all (24) models combined, incorporating uncertainty of each model based on estimated variance covariance matrix of parameters. Depletion-based reference points were derived based on the average F-at-age matrix in 2019, representing the most recent pattern of exploitation from the fishery. For the selected model options, point estimates of Yield40%SSB0 ranged from 445 000 t to 586 000 t. Models with higher steepness generally yielded comparatively higher estimates of target yield. Annual catches over the last five years the 1990s have been within the range of the estimated target yield. In general, current stock biomass relative to the depletion-based benchmarks are not fundamentally different for the range of model options. Averaging across the model grid, fishing mortality rates have been increasing rapidly since 1980, and has decreased slightly over the last few years (**Figure 4.2.6.4**). Biomass was estimated to have declined considerably in the 1980s, again in the mid-2000s, but have increased since 2010 (**Figure 4.2.6.4**).

Estimates were combined across from the 24 models to generate the KOBE stock status plot (**Figure 4.2.6.5**). For individual models, the uncertainty is characterised using the multivariate lognormal MonteCarlo approach (Walter et al. 2019, Walter & Winker 2019, Winker et al. 2019), based on the maximum likelihood estimates and variance-covariance of F/F_{TGT} and SSB/SSB_{TGT} . Thus, estimates of stock status included both within and across model uncertainty. Combined across the model ensemble, SSB_{2019} was estimated to be of 1.13 SSB_{TGT} (0.98– 1.28), and F_{2019} was estimated 0.98 F_{TGT} (0.75–1.21). The probability of the stock being in the green Kobe quadrant in 2019 is estimated to be about 63%. The stock is therefore considered not to be overfished and is not subject to overfishing in 2019.

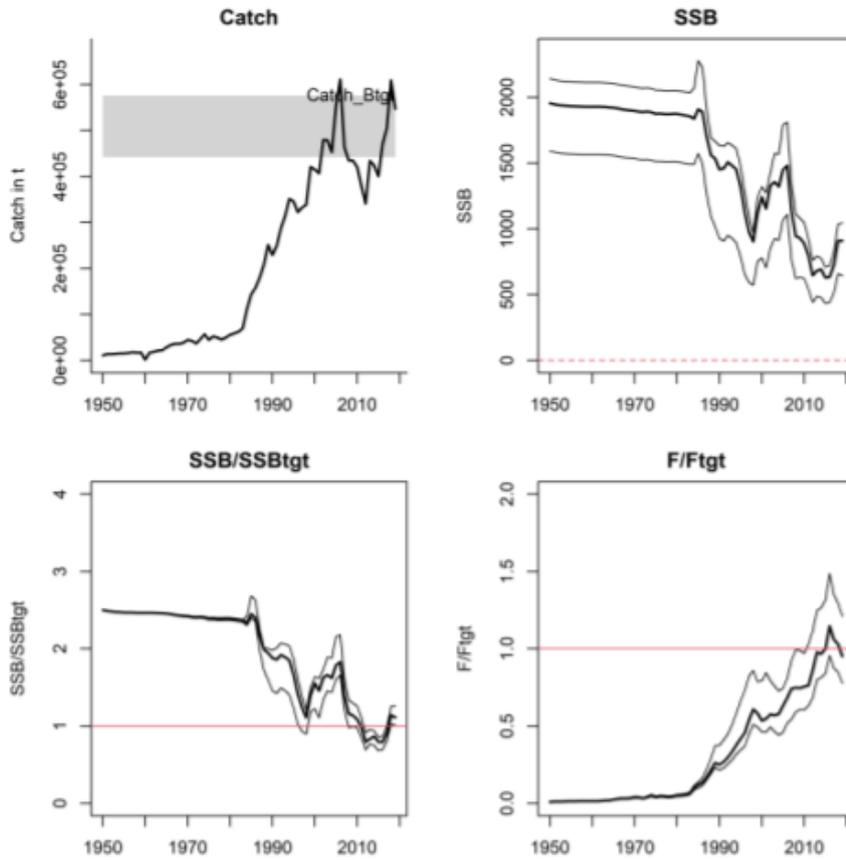


Figure 4.2.6.2: Estimated stock trajectories for the Indian Ocean skipjack from the final model grid. Thin black lines represent 5%, 50%, 95% percentiles. In the catch plot, dotted lines represent estimate of Yield40%SSB, the shaded area represents 5th and 95th percentiles. SSBtgt refers to SB40%SSB0 and Ftgt refers to F40%SSB0. (Fu, 2020)

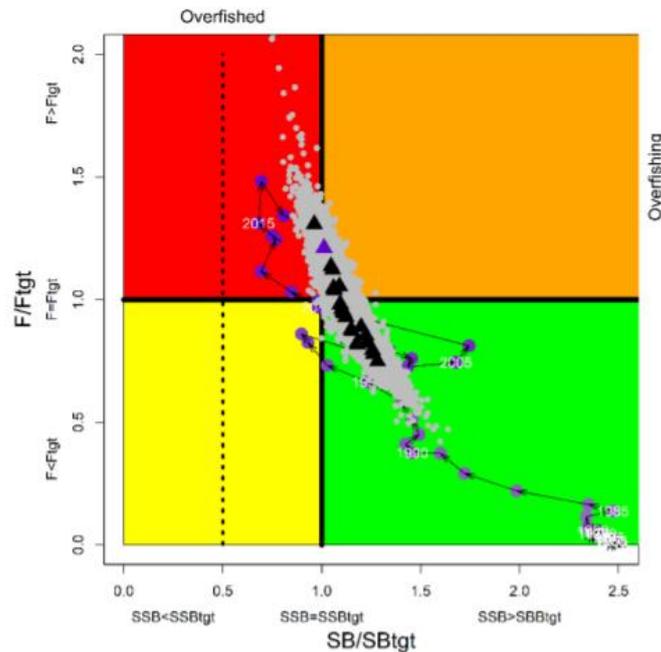


Figure 4.2.6.3: IOTC-SKJ. Current stock status, relative to SB40%SSB0 (x-axis) and F40%SSB0 (y-axis) reference points for the final model grid, as well as time series of historical stock status for the basic model. Triangles represent MPD estimates from individual models. Grey dots represent uncertainty from individual models. The dashed lines represent limit reference points for IO skipjack (SBlim = 20%SSB0). (Fu, 2020).

4.2.6.2 Stock Status (IOTC, 2020)

A new stock assessment was carried out for skipjack tuna in 2020 using Stock Synthesis with data up to 2019. The outcome of the 2020 stock assessment model does not differ substantially from the previous assessment (2017) despite the large catches recorded in the period 2018-2019, which exceeded the catch limits established in 2017 for this period. The final overall estimate of stock status indicates that the stock is above the adopted target for this stock and that the current exploitation rate is just below the target. Also, the models estimate that the spawning biomass remains above its SSB_{MSY} and the fishing mortality remains below E_{MSY} (harvest rate at MSY) with very high probability. Over the history of the fishery, biomass has been well above the adopted limit reference point ($0.2 * SSB_0$). The recent catches have been within the range of estimated target yield (see $C_{40\%SSB_0}$). Current spawning stock biomass relative to unexploited levels is estimated at 45% (**Table 4.2.6.3**). Thus, on the weight-of-evidence available in 2020, the skipjack tuna stock is determined to be: (i) above the adopted biomass target reference point; (ii) not overfished ($SSB_{2019} > SSB_{40\%SSB_0}$); (iii) with fishing mortality below the adopted target fishing mortality, and; (iv) not subject to overfishing ($E_{2019} < E_{40\%SSB}$).

Table 4.2.6.3: IOTC-SKJ. Skipjack tuna: Status of skipjack tuna (*Katsuwonus pelamis*) in the Indian Ocean

Area ¹	Indicator	Value	Status ²
Indian Ocean	Catch in 2019 (MT)	547,248	60.4%*
	Average catch 2015-2019 (MT)	506,555	
	$C_{40\%SSB_0}$ (MT)	535,964 (461,995–674,536)	
	$C_{2019} / C_{40\%SSB_0}$ (MT)	1.02 (0.81–1.18)	
	$E_{40\%SSB_0}$ ³	0.59 (0.53–0.66)	
	$E_{2019} / E_{40\%SSB_0}$	0.92 (0.67-1.21)	
	SSB_0 (MT)	1,992,089 (1,691,710–2,547,087)	
	SSB_{2019} (MT)	870,461 (660,411–1,253,181)	
	$SSB_{40\%SSB_0}$ (MT)	794,310 (672,825–1,019,056)	
	$SSB_{20\%SSB_0}$ (MT)	397,155 (336,412–509,528)	
	SSB_{2019} / SSB_0	0.45 (0.38-0.5)	
	$SSB_{2019} / SSB_{40\%SSB_0}$	1.11 (0.95-1.29)	
	SSB_{2019} / SSB_{MSY}	1.99 (1.47-2.63)	
	MSY (MT)	601,088 (500,131–767,012)	
E_{2019} / E_{MSY}	0.48 (0.35-0.81)		

¹Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

²The stock status refers to the most recent years' data used in the assessment conducted in 2020

³E is the annual harvest rate

*Estimated probability that the stock is in the respective quadrant of the Kobe plot (shown below), derived from the confidence intervals associated with the current stock status

Colour key	Stock overfished ($SSB_{2019} / SSB_{40\%SSB_0} < 1$)	Stock not overfished ($SSB_{2019} / SSB_{40\%SSB_0} \geq 1$)
Stock subject to overfishing ($E_{2019} / E_{40\%SSB_0} \geq 1$)	19.5%	19.5%
Stock not subject to overfishing ($E_{2019} / E_{40\%SSB_0} \leq 1$)	0.6%	60.4%
Not assessed / Uncertain		

The percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account

4.2.6.3 Outlook (IOTC, 2020)

Total catches in 2018 were 30% larger than the resulting catch limit from the skipjack HCR for the period 2018-2020, which raises concern in the WPTT. It is important to note that reaching the management objectives defined in Resolution 16/02 requires that the catch limits adopted by the skipjack HCR are implemented effectively. It should be noted that skipjack catches for most gears have increased from 2017 to 2018 (+44% for purse seine (log/FAD-associated), +12% for gillnet and +13% for pole-and-line). In 2019, catch was reduced considerably compared to 2018. Due to its specific life history attributes, skipjack can respond quickly to ambient foraging conditions driven by ocean productivity, which seem to have been favourable in recent years. Environmental indicators should be closely monitored to inform on the potential increase/decrease of stock productivity. There remains considerable uncertainty in the assessment: The

assumption of two hypotheses for the effort creep since 1995 for the standardized European purse seine CPUE was included in the model grid. The range of runs analysed illustrate a range of stock status to be between 36% and 51% of SSB_{2019} / SSB_0 based on all runs examined. It is important to note the differences between the runs that apply an additional effort creep parameter to the standardized series of CPUE (median $SSB_{2019}/SSB_0=0.44$) and those that do not (median $SSB_{2019} / SSB_0=0.45$). Also, there was contrast between runs that fully weighted tagging information (median $SSB_{2019} / SSB_0=0.42$) and those that reduced their influence (median $SSB_{2019}/SSB_0=0.48$).

4.2.6.4 Catch profiles

Best scientific estimates of the catches of skipjack tuna by gear and main fleets (or type of fishery) by decade (1950–2009) and year (2009–2019) are presented in **Table 4.2.6.4**. Catches by decade represent the average annual catch, noting that some gears were not used since the beginning of the fishery.

Table 4.2.6.4: IOTC SKJ - Best scientific estimates of the catches of skipjack tuna (*Katsuwonus pelamis*) by gear and main fleets (or type of fishery) by decade (1950–2009) and year (2009–2019), in tonnes. Catches by decade represent the average annual catch, noting that some gears were not used since the beginning of the fishery. (IOTC, 2020)

Fishery	By decade (average)						By year (last ten years)									
	1950s	1960s	1970s	1980s	1990s	2000s	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Purse seine FS	0	0	41	15,252	30,776	25,672	8,774	9,000	2,984	5,742	7,228	7,800	6,888	6,170	6,235	34,268
Purse seine LS	0	0	125	34,457	124,043	163,801	144,097	123,056	80,989	119,864	122,490	123,994	182,735	208,876	301,570	247,687
Baitboat	10,007	15,148	24,684	41,705	76,903	109,571	83,506	69,404	68,821	93,010	81,568	82,748	96,268	99,423	111,867	97,516
Gillnet	2,310	6,775	11,173	14,524	43,159	111,700	98,919	87,724	92,570	105,673	102,900	87,419	82,796	99,663	111,983	88,941
Other	2,697	4,943	10,894	24,183	44,250	62,238	85,399	89,266	95,566	109,547	109,873	98,712	101,499	91,354	77,524	78,837
Total	15,014	26,866	46,917	130,121	319,131	472,982	420,695	378,450	340,930	433,836	424,059	400,673	470,186	505,486	609,179	547,249

4.2.7 Scientific based information related to P2

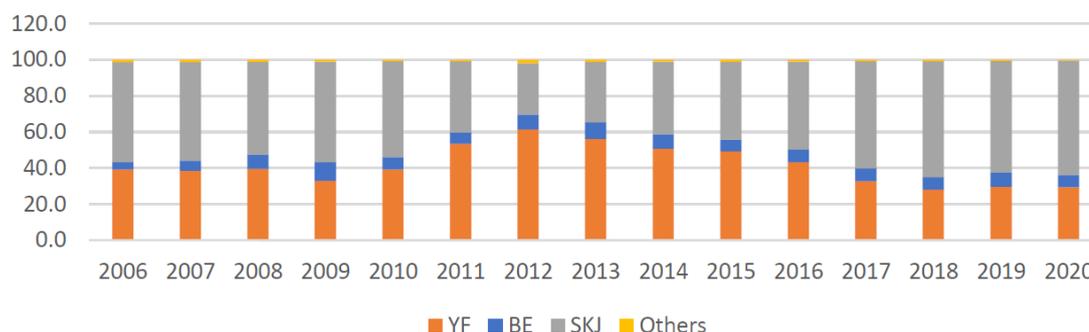
4.2.7.1 Landings of the Echebatar fleet

Table 4.2.7.1 presents the landings of main tunas species by the Echebatar fleet between 2006-2020 (ESWG 2021). In 2020, the breakdown of the total catch of 53,431 mt by the three main species was skipjack 63.4 %; yellowfin 29.4 %; and bigeye 6.8 %. Since 2017 (the year that the first yellowfin quota system was adopted) the proportion of skipjack was higher than previous years (2011-2016). This could be due to: (i) restrictions on yellowfin catch from 2016; with (ii) the resultant shift from FSC to FAD sets (see **table 4.2.7.2**). However, **Figure 4.2.7.1** shows that that yellowfin contributions to the total catches between 2011 and 2016 increased from previous years.

Yellowfin catches in recent years (2017-2020) show a significant decrease when compared to 2014 levels (between 11% and 17%), while in the case of the skipjack is the other way around (they increased between 21% and 96%). However, it is important to consider that the number of vessels has varied throughout this period (e.g. the Euskadi Alai and the Jai Alai started to operate in 2015, while the Aterpe Alai started in 2019).

Table 4.2.7.1. Echebatar landings of main tunas species 2006-2020. Source: ESWG 2021

Year	YF		BE		SKJ		Others		TOTAL
	ton	%	ton	%	ton	%	ton	%	
2006	19.277	39,3	1.952	4,0	27.178	55,4	665	1,4	49.072
2007	12.289	38,5	1.814	5,7	17.406	54,5	427	1,3	31.936
2008	16.006	39,5	3.192	7,9	20.787	51,3	498	1,2	40.483
2009	16.240	32,9	5.110	10,4	27.525	55,8	483	1,0	49.357
2010	22.116	39,3	3.837	6,8	29.919	53,1	441	0,8	56.313
2011	26.470	53,4	3.193	6,4	19.493	39,3	414	0,8	49.569
2012	24.862	61,3	3.383	8,3	11.544	28,5	759	1,9	40.547
2013	24.906	56,1	4.107	9,3	14.854	33,5	516	1,2	44.383
2014	17.534	50,8	2.736	7,9	13.903	40,2	375	1,1	34.547
2015	17.542	49,4	2.314	6,5	15.263	43,0	402	1,1	35.521
2016	17.653	43,1	2.894	7,1	19.980	48,8	384	0,9	40.911
2017	15.121	32,8	3.230	7,0	27.308	59,3	417	0,9	46.075
2018	14.800	28,1	3.603	6,8	33.866	64,2	460	0,9	52.729
2019	14.668	29,6	3.827	7,7	30.682	62,0	306	0,6	49.483
2020	15.702	29,4	3.654	6,8	33.867	63,4	208	0,4	53.431


Figure 4.2.7.1 Landings of the main tun species by the Echebatar fleet between 2006-2020. Source: ESWG 2021.

4.2.7.2 UoAs observer catch composition and total estimated catches in 2019 and 2020

a) UoA observer coverage:

All fishing trips are observed, since there is always an observer on board and all sets should be observed. However, up to date not all sets are sampled and reported. **Table 4.2.7.2** shows the trend of the percentage of observed (and sampled) sets out of the total of sets performed by the Echebatar fleet between 2014 and 2020. Observer coverage in 2019 remained at levels comparable to 2017 and 2018 (around 80% of all sets were observed, both in FAD and FSC sets). This proportion reduced to around 50% in 2020 (52% in FAD sets and 35% in FSC sets) due to the restrictions on observers boarding vessels resulting from the COVID-19 pandemic regulations applied in the Seychelles. However, AZTI representatives interviewed during the audit said that data 2020 were preliminary and observer coverage is susceptible to increase, since information is still being reviewed.

During the interviewed held as part of the surveillance audit, AZTI representatives confirmed that the pandemic impacted on their ability to implement observer programmes since in March 2020 they were forced to close their office based in Seychelles (which has been operating since 2016). They are confident on re-opening it by late summer this year (September 2021).

In any case, both latest observer coverage and averaged observer coverage during the studied period (62% of the sets performed between 2014 and 2020 were observed) are well above the minimum 20% observer coverage which the IOTC is recommending (IOTC 2020b) for class 1-5 purse seine vessels (small purse seiners where no formal fleet-wide

observer program exists) to assess trends even for rare encountered species. During the meeting Echebatar confirmed their intention to keep observer coverage at pre-pandemic levels as soon as the situation improves.

The average number of FSC sets in the recent years (2018 – 2020) presents a notable reduction in number, mainly due to the reduction in yellowfin fishing opportunities.

Table 4.2.7.2 Results based on real total FAD and FSC set proportion and updated data. Sources: (i) Echebatar catch data from 2019 and 2020 analysed by the ESWG available at: <https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/2020-annual-surveillance-audit/documents/>; (ii) Update data for 2020 were taken from ESWG 2021

Year	Fishing modality	Total sets	% set by fishing modality	Observed sets	% observed sets per modality	Total sets	Total observed sets	Total observed sets
2014	FAD	831	64%	221	27%	1058	347	33%
	FSC	227	36%	126	56%			
2015	FAD	1161	81%	672	58%	1353	831	61%
	FSC	192	19%	159	83%			
2016	FAD	1512	90%	613	41%	1672	684	41%
	FSC	160	10%	71	44%			
2017	FAD	1250	89%	1074	86%	1463	1207	83%
	FSC	213	11%	133	62%			
2018	FAD	1369	98%	1197	87%	1398	1223	87%
	FSC	29	2%	26	90%			
2019	FAD	1384	90%	1089	79%	1531	1203	79%
	FSC	147	10%	114	78%			
2020	FAD	1608	97%	838	52%	1651	790	52%
	FSC	43	3%	15	35%			

b) UoA observed catch and total estimated catch in 2019-2020

Upper table 4.1.7.3 shows that 98,77% of the FAD catches performed by the Echebatar fleet in 2019 were comprised by skipjack (61%), yellowfin (28%) and bigeye (10%). While, in the case of the FSC catches (**lower table 4.2.7.3**) this percentage rises up to 99.69%, with a similar contribution of each of the tropical tunas. Also, FAD catches accounted for a higher number of species/species groups compared to FSC catches. ETP species are restricted to rays, sharks and turtles, but the diversity of ETP species is much lower in FSC than in FAD. The estimated number of individuals from ETP species impacted by the UoA during 2019 is reduced for all species but for the Carcharhinus (a total of 6238 silky sharks (*C.falciformis*) and 70 oceanic whitetip sharks (*C.longimanus*) were estimated to be caught when targeting FAD in 2019). The estimated number of individuals impacted when targeting FSC was much lower (77 silky sharks and 6 oceanic white tip sharks). Up to 79% of the sharks, rays and turtles incidentally caught when targeting FAD sets were released alive, while the survival rate in FSC sets was 100%.

Upper table 4.1.7.4 shows that 98,60% of the FAD catches performed by the Echebatar fleet in 2020 were comprised by skipjack (61%), yellowfin (29%) and bigeye (9%). While, in the case of the FSC catches (**lower table 4.2.7.4**) the percentage rises to 99.85%, being yellowfin tuna the species accounting for a higher % of the catch (64%). Again, FAD catches account for a higher number of species/species groups compared to FSC catches. ETP species are restricted to rays, sharks and turtles, with FSC catches showing a single interaction with an ETP species (1 individual of *C.falciformis*). The number of individuals from ETP species impacted by the UoA during 200 is reduced for all species but for the Carcharhinus (a total of 7233 silky sharks, 54oceanic whitetip sharks -*C.longimanus*- and 39 bull sharks -*C.leucas*- were caught by FAD sets in 2020). Up to 79% of the sharks, rays and turtles incidentally caught were released alive. Up to 59% of the sharks, rays and turtles incidentally caught when targeting FAD sets were released alive, while the survival rate in FSC sets was 100%.

Table 4.2.7.3. UoC observed and total estimated catches on FADs (top table) and FSC (lower table) in 2019. Source: Echebatar catch data from 2019 and 2020 analysed by the ESWG available at: <https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/2020-annual-surveillance-audit/documents/>

Year	2019
Set type FAD	FAD
Number of observed sets	1089
Total number of sets	1384
Observed sets (%)	78,68%
SRT released alive (%)	79%

Species / Species group	Observed Catch		% Total Wt.	Estimated Total Catch	
	Tons	Individuals (non-tuna)		Tons	Individuals (non-tuna)
Billfishes : Makaira indica	13,508	166	0,04%	17,17	211
Billfishes : Makaira nigricans	9,3282	96	0,02%	11,86	122
Other bony fishes : Ablennes hians	0,0025	5	0,00%	0,00	6
Other bony fishes : Acanthocybium solandri	33,3564	4145	0,09%	42,39	5.268
Other bony fishes : Aluterus monoceros	0,5668	401	0,00%	0,72	510
Other bony fishes : Belonidae	0,033	66	0,00%	0,04	84
Other bony fishes : Brama brama	0	18	0,00%	0,00	23
Other bony fishes : Canthidermis maculata	30,6161	47337	0,08%	38,91	60.160
Other bony fishes : Carangidae	0,1055	211	0,00%	0,13	268
Other bony fishes : Caranx sexfasciatus	0,104	208	0,00%	0,13	264
Other bony fishes : Coryphaena equiselis	0,788	197	0,00%	1,00	250
Other bony fishes : Coryphaena hippurus	56,596	7269	0,15%	71,93	9.238
Other bony fishes : Coryphaenidae	0,025	5	0,00%	0,03	6
Other bony fishes : Decapterus macarellus	0,1884	360	0,00%	0,24	458
Other bony fishes : Diodontidae	0,006	12	0,00%	0,01	15
Other bony fishes : Elagatis bipinnulata	44,7365	15733	0,12%	56,86	19.995
Other bony fishes : Kyphosus cinerascens	0,038	76	0,00%	0,05	97
Other bony fishes : Kyphosus sp,	0,005	10	0,00%	0,01	13
Other bony fishes : Kyphosus vaigiensis	0,0295	59	0,00%	0,04	75
Other bony fishes : Lobotes surinamensis	0,9929	359	0,00%	1,26	456
Other bony fishes : Platax sp,	0,1015	203	0,00%	0,13	258
Other bony fishes : Platax teira	0,0645	129	0,00%	0,08	164
Other bony fishes : Sarda sarda	2,5	50	0,01%	3,18	64
Other bony fishes : Seriola rivoliana	0,0105	21	0,00%	0,01	27
Other bony fishes : Sphyræna barracuda	2,7291	513	0,01%	3,47	652
Other bony fishes : Ursaspis secunda	0,117	234	0,00%	0,15	297
Rays : Dasyatidae	0	2	0,00%	0,00	3
Rays : Dasyatys (Pteroplatytrygon) violacea	0,021	7	0,00%	0,03	9
Rays : Manta birostris	0,0905	3	0,00%	0,12	4
Rays : Mobula mobular	0,15	1	0,00%	0,19	1
Rays : Mobula sp,	0,3	2	0,00%	0,38	3
Turtles : Caretta caretta	0,0877	4	0,00%	0,11	5
Turtles : Eretmochelys imbricata	0,0136	3	0,00%	0,02	4
Turtles : Lepidochelys olivacea	0,0978	4	0,00%	0,12	5
Sharks : Carcharhiniformes	0,1	2	0,00%	0,13	3
Sharks : Carcharhinus falciformis	95,2909	4908	0,25%	121,10	6.238
Sharks : Carcharhinus longimanus	3,4998	55	0,01%	4,45	70
Sharks : Sphyrna lewini	0,115	1	0,00%	0,15	1
Whales shark : Rhincodon typus	5,393	1	0,01%	6,85	1
Tunas nei : Auxis rochei	41,025		0,11%		
Tunas nei : Auxis sp,	36		0,09%		
Tunas nei : Auxis thazard	45,395		0,12%		
Tunas nei : Euthynnus affinis	5,4		0,01%		
Tunas nei : Katsuwonus pelamis	23174,53		60,95%		
Tunas nei : Thunnus alalunga	35		0,09%		
Tunas nei : Thunnus albacares	10729,71		28,22%		
Tunas nei : Thunnus obesus	3651,15		9,60%		

Year	2019
Set type	FSC
Number of observed sets	114
Total number of sets	147
Observed sets (%)	77,55%
SRT released alive (%)	100%

Species / Species group	Observed Catch		% Total Wt.	Estimated Total Catch	
	Tons	Individuals (non-tuna)		Tons	Individuals (non-tuna)
Billfishes : Makaira indica	0,2081	3	0,01%	0,27	4
Billfishes : Makaira nigricans	0,0261	1	0,00%	0,03	1
Other bony fishes : Coryphaena hippurus	0,0123	3	0,00%	0,02	4
Other bony fishes : Diodontidae	0,0005	1	0,00%	0,00	1
Other bony fishes : Elagatis bipinnulata	0,002	2	0,00%	0,00	3
Rays : Mobula sp,	0,3	2	0,01%	0,39	3
Sharks : Carcharhinus falciformis	1,372	60	0,05%	1,77	77
Sharks : Carcharhinus longimanus	0,3179	5	0,01%	0,41	6
Tunas nei : Auxis sp,	4		0,16%		
Tunas nei : Auxis thazard	1,5		0,06%		
Tunas nei : Katsuwonus pelamis	1447		56,39%		
Tunas nei : Thunnus albacares	790		30,79%		
Tunas nei : Thunnus obesus	321,1		12,51%		

Table 4.2.7.4. Preliminary UoC observed and total estimated catches on FADs (top table) and FSC (lower table) in 2020. Source: Echebatar catch data from 2019 and 2020 analysed by the ESWG available at: <https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/2020-annual-surveillance-audit/documents/>. However, 2020 are still being reviewed and the most updated version is in ESWG 2021. The most significant changes are: (i) observer coverage for FAD sets in 2020 was updated and increased from 775 to 838 in ESWG 2021; (ii) Whale sharks encounters in FAD sets were increased from 1 to 3.

Year	2020
Set type FAD	FAD
Number of observed sets	775
Total number of sets	1608
Observed sets (%)	48,20%
SRT released alive (%)	59%

Species / Species group	Observed Catch		% Total Wt.	Estimated Total Catch	
	Tons	Individuals (non-tuna)		Tons	Individuals (non-tuna)
Billfishes : Istiophoridae	0,4817	10	0,00%	1,00	21
Billfishes : Istiophorus platypterus	0,0668	3	0,00%	0,14	6
Billfishes : Makaira indica	7,4344	126	0,03%	15,43	261
Billfishes : Makaira nigricans	1,2368	17	0,01%	2,57	35
Billfishes : Tetrapturus angustirostris	0,0067	1	0,00%	0,01	2
Other bony fishes : Acanthocybium solandri	9,3064	1475	0,04%	19,31	3.060
Other bony fishes : Aluterus monoceros	1,7594	2285	0,01%	3,65	4.741
Other bony fishes : Belonidae	0,002	4	0,00%	0,00	8
Other bony fishes : Canthidermis maculata	20,3244	28397	0,09%	42,17	58.919
Other bony fishes : Carangidae	0,023	46	0,00%	0,05	95
Other bony fishes : Caranx sexfasciatus	0,362	724	0,00%	0,75	1.502
Other bony fishes : Coryphaena equiselis	0,04	10	0,00%	0,08	21
Other bony fishes : Coryphaena hippurus	52,4578	5440	0,23%	108,84	11.287
Other bony fishes : Decapterus macarellus	0,6208	1063	0,00%	1,29	2.206
Other bony fishes : Elagatis bipinnulata	43,5042	14156	0,19%	90,26	29.371
Other bony fishes : Kyphosus cinerascens	0,0265	53	0,00%	0,05	110
Other bony fishes : Kyphosus sectatrix	0	60	0,00%	0,00	124
Other bony fishes : Kyphosus vaigiensis	0,168	276	0,00%	0,35	573
Other bony fishes : Lobotes surinamensis	0,882	364	0,00%	1,83	755
Other bony fishes : Mola mola	0,075	1	0,00%	0,16	2
Other bony fishes : Naucrates ductor	0,0095	19	0,00%	0,02	39
Other bony fishes : Platax sp,	0,0235	47	0,00%	0,05	98
Other bony fishes : Platax teira	0,1215	243	0,00%	0,25	504
Other bony fishes : Seriola rivoliana	0,2095	419	0,00%	0,43	869
Other bony fishes : Sphyrna barracuda	2,0565	331	0,01%	4,27	687
Other bony fishes : Uraspis secunda	0,003	6	0,00%	0,01	12
Rays : Manta birostris	0,17	1	0,00%	0,35	2
Rays : Mobula japanica (rancureli)	0,3	2	0,00%	0,62	4
Sharks : Carcharhinus falciformis	85,3216	3486	0,38%	177,03	7.233
Sharks : Carcharhinus leucas	0,209	19	0,00%	0,43	39
Sharks : Carcharhinus longimanus	1,659	26	0,01%	3,44	54
Turtles : Eretmochelys imbricata	0,0158	2	0,00%	0,03	4
Tunas nei : Auxis rochei	1,1		0,00%	2,28	
Tunas nei : Auxis thazard	82,65		0,37%	171,49	
Tunas nei : Katsuwonus pelamis	13709,7		61,22%	28.445,42	
Tunas nei : Thunnus albacares	6477,1		28,92%	13.438,94	
Tunas nei : Thunnus obesus	1895		8,46%	3.931,82	

Year	2020
Set type	FSC
Number of observed sets	15
Total number of sets	43
Observed sets (%)	34,88%
SRT released alive (%)	100%

Species / Species group	Observed Catch		% Total Wt.	Estimated Total Catch	
	Tons	Individuals (non-tuna)		Tons	Individuals (non-tuna)
Billfishes : Makaira indica	0,166	1	0,09%	0,48	3
Sharks : Carcharhinus falciformis	0,0822	1	0,05%	0,24	3
Tunas nei : Katsuwonus pelamis	45		25,53%	129,00	
Tunas nei : Thunnus albacares	113		64,11%	323,93	
Tunas nei : Thunnus obesus	18		10,21%	51,60	

4.2.7.2 Primary species

Species composition of the UoA catches are consistent with the data assessed during the initial evaluation. Yellowfin tuna and bigeye tuna are that the only 'main' primary species, irrespective of whether the vessels are targeting FADs or FSC, so an update of their status and management is offered below. Based on the updated information, the team considered that no re-scoring of main primary species was necessary.

The remaining primary species (mainly albacore and several species of billfishes) are all 'minor' and information presented in **tables 4.2.7.3 and 4.2.7.4** confirms that no significant changes on the impact of the fishery on these species have been identified. No significant modifications at managerial level were either identified. No re-scoring for minor species was considered necessary.

(i) Yellowfin tuna

A new assessment for yellowfin tuna was scheduled in 2019. However, as explained in the previous surveillance report (Stokes & Rios, 2020), the Scientific Committee reported that despite progress made to reduce uncertainties in the fishery/assessment, no new advice could be provided in 2019. No new stock assessment was carried out for yellowfin tuna in 2020 neither, thus, stock status was determined on the basis of the 2018 assessment and other information presented in 2020. According IOTC-SC23 (2020), on the weight-of-evidence available in 2018, 2019 and 2020, the yellowfin tuna stock was determined to remain overfished and subject to overfishing. The latest stock assessment is thus the 2018 update to the 2016 stock assessment as considered at the first surveillance report.

The SC has recognized that the results of projections of the Stock Synthesis are no longer provided in the form of K2SM because subsequent investigation has shown some critical errors in the projections and estimations for computing probabilities in the K2SM developed in 2018. (IOTC-SC23, 2020). As such the K2SM is not suitable for use to provide management advice. This fact was recognized by the Commission when preparing the new CMM for the yellowfin tuna (Res 21/01) adopted in June 2021 during the latest Session of the Committee (S25). This new CMM (which will become binding in October 2021) increases the level of catch reduction, following the scientific advice. See **section 4.2.3.1** for more details.

According to the latest version of the schedule of stock assessments for IOTC species from 2020-2025 (IOTC-SC23, 2020), a new full assessment will be performed in 2021.

Finally, the PCR for the CFTO Indian Ocean Purse Seine skipjack fishery has been published in June 2021 (Sieben et al 2021). This assessment scores 80 for the yellowfin on PI 2.1.1(a) based on the results of the 2018 stock assessment. Furthermore, the team includes the following consideration:

"The team notes the concerns raised by stakeholders in relation to the change in fishing practices as a result of implementation of the yellowfin rebuilding plan. I.e. the increased reliance of Indian Ocean purse seine fisheries on FADs, with likely increased catches of juvenile yellowfin as a result. Given that this trend has not yet been incorporated into the latest stock assessment, there was concern that stock status may be worse than assessed by Fu et al. (2017). For precautionary reasons, the team therefore explored the scenario where the first part of SG80 (i.e., main primary species are highly likely to be above the PRI) is not met, triggering the question: 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. This fishery overlaps with 2 other fisheries in the MSC programme. The table below shows the total amount of yellowfin caught by these UoAs as most recently reported in MSC reports. According to these data, the total annual yellowfin catch by MSC UoAs is estimated at 47,141 tonnes. The total Indian Ocean yellowfin catch according to the IOTC database varied from 424,988 t in 2016 to 438,583t in 2018 (<https://www.iotc.org/documents/nominal-catch-species-and-gear-vessel-flag-reporting-country>). The MSC UoAs combined contributions to this overall catch are in the region of ca. 11%. Applying SA3.4.6-d and associated guidance ("UoA catches of less than 30% of the total catch of a species may not normally be influential in hindering a recovery in a marginal sense, i.e., nothing the UoA does would be likely to change the situation"), the team concludes that the second part of SG80 is met. SG100 remains not met as explained already.

Based on all the information presented above, the team decided not to re-score PI 2.1.1(a). Also, the team considered that the adoption of Res 21/01 does not changes PI 2.1.2 score.

(ii) Bigeye tuna

The bigeye tuna was assessed in 2019 and the results of this assessment were already considered in the previous surveillance report and re-scoring was considered as necessary (Stokes and Rios 2019). Furthermore, the score provided by Sieben et al (2021) in its recent PCR for the CFTO fishery also scores 80 for the bigeye tuna in PI2.1.1(a).

Based on the information provided above the team decided not to re-score PI 2.1.1(a).

4.2.7.3 Secondary species

As found during the previous surveillance audit and the initial assessment, no main secondary species are impacted by the UoA, while there is a number of minor secondary species (some small tunas and mainly small bony, pelagic or neritic finfish) accounting less than 2% of the total catches. Data presented in tables above lead the team to consider that there is no need to revise the impact of the UoA on these species.

4.2.7.3 ETP species

An update on several issues related to the impact of the certified fishery on the ETP species is presented below. Despite there are many different pieces of new information on this matter (observers' data being collected on a regular basis, annual assessments performed by AZTI on the implementation of the ANABAC/OPAGAC Code of Good Practices, tests on new methodologies to improve survival rates for elasmobranchs released from deck, studies on the survival rate and habitat of silky sharks, cumulative impacts from overlapping fisheries...), the team considers that there is no need to re-score any of the ETP-related PIs (2.3.1, 2.3.2 and 2.3.3) at this stage.

(i) ETP species impacted and trends

As for the PCR, ETP species identified in the UoC catches include several species of rays, sharks and sea turtles. Only the whale shark (*Rhincodon typus*) and the scalloped hammerhead shark (*Sphyrna lewini*) are new species compared to the PCR.

The whale shark was already identified in the previous surveillance audit (1 individual was recorded between 2017 and 2018), while this time 3 individuals were recorded between 2019 and 2020. All individuals were released alive.

Besides, a single individual of scalloped hammerhead shark was found to be caught between 2019 and 2020.

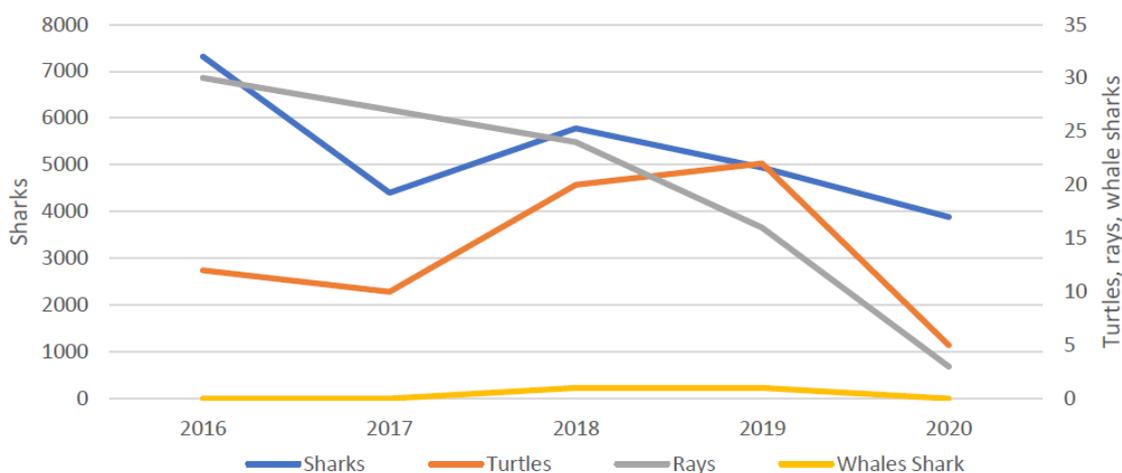
Also, data shown in **Table 4.2.7.1** and **Table 4.2.7.2** are consistent with the estimated average annual interactions (in number of individuals) with ETP species as described in the PCR (both for FAD set and FSC sets, see tables 23 and 24 in DeAlteris et al 2018).

Silky sharks (*C.falciiformis*) are still caught in high numbers in FAD sets. On the other hand, the survival rate is maintained at the levels found in the previous surveillance audit (between 59 and 79% in FAD sets and 100% in FSC sets), and higher than estimated in DeAlteris et al 2018 (50%). **Table 4.2.7.5** shows that the average number of individuals of rays, sharks and turtles caught per set when targeting FADs is lower than 1 for all species but for the silky sharks which varies between 2 and 5.

Figure 4.2.7.2 shows a decreasing trend in the estimated number of rays and sharks caught by the certified fleet. No clear trend can be seen in the case of marine turtles.

Table 4.2.7.5 Average number of individuals of rays, sharks and turtles caught per set when targeting FADs. Source: ESWG2021

FAO	Family	Species	2016	2017	2018	2019	2020
EAG	Rays	<i>Myliobatidae</i>	0	0	0	0	0
MNT	Rays	<i>Manta</i> sp.	0	0	0	0	0
PLS	Rays	<i>Dasyatis (Pteroplatytrygon) violacea</i>	0	0	0	0	0
RMB	Rays	<i>Manta birostris</i>	0	0	0	0	0
RMJ	Rays	<i>Mobula japonica (rancureli)</i>	0	0	0	0	0
RMM	Rays	<i>Mobula mobular</i>	0	0	0	0	0
RMV	Rays	<i>Mobula</i> sp.	0	0	0	0	0
STT	Rays	<i>Dasyatidae</i>	0	0	0	0	0
BSH	Sharks	<i>Prionace glauca</i>	0	0	0	0	0
CCE	Sharks	<i>Carcharhinus leucas</i>	0	0	0	0	0
CVX	Sharks	<i>Carcharhiniformes</i>	0	0	0	0	0
FAL	Sharks	<i>Carcharhinus falciiformis</i>	5	3	4	4	2
OCS	Sharks	<i>Carcharhinus longimanus</i>	0	0	0	0	0
SPL	Sharks	<i>Sphyrna lewini</i>	0	0	0	0	0
DKK	Turtles	<i>Dermochelys coriacea</i>	0	0	0	0	0
LKV	Turtles	<i>Lepidochelys olivacea</i>	0	0	0	0	0
TTH	Turtles	<i>Eretmochelys imbricata</i>	0	0	0	0	0
TTL	Turtles	<i>Caretta caretta</i>	0	0	0	0	0
TTX	Turtles	Turtle not identified	0	0	0	0	0
TUG	Turtles	<i>Chelonia mydas</i>	0	0	0	0	0
RHN	Whales shark	<i>Rhincodon typus</i>	0	0	0	0	0

Figure 4.2.7.2 ETP estimated number of individuals caught by the Echebatar fleet when targeting FADs. Source: ESWG 2021.**(ii) Best practices on board to increase survival rates**

The implementation of the [ANABAC/OPAGAC Code of Good Practices](#) adopted by Echebatar is being monitored by AZTI, and according to AZTI significant benefits has been identified: e.g. the use of non-entangling FADs, specific data collection protocols allowing a better understanding of the nature of the incidental interactions, and the implementation of best practices on board for the release rays and sharks, including the installation of double conveyor belt in 4 of its 6 vessels and avoiding most of the elasmobranchs being released from deck. The Steering Committee evaluates compliance and regularly updates the bases of the Code of Good Practices. The implementation of this Code of Conduct is annually assessed by AZTI as part of the audit to assess compliance with the [UNE195006:2016 Standard for Responsible Tuna Fishing](#). The team could check that all the Echebatar vessels have valid (Jan 2021-Dec2021) certificates on Section 4 (on Good Practices) of the UNE195006:2016 Standard.

Furthermore, AZTI presented evidence that Echebatar is currently collaborating with them to test new methodologies to improve survival rates of elasmobranchs released from deck, such as:

- (i) the use of sharks velcros
- (j) sorting grids for mobulids
- (k) hoppers with ramps (for the two vessels where the double conveyor belt cannot be installed)

(iii) Study on the silky shark survival rate

A study on the post-release survival rate of the silky shark is being performed on board one of the Echebatar vessels. This research was completed by AZTI under contract to Echebatar, and the preliminary report (SIOTI-ESWG 2020) was presented to the IOTC-WPEB in 2021 (Onandia et al 2021).

Previous research to evaluate the post-release mortality of elasmobranchs was carried out in longline fisheries and purse seiners in the Pacific Ocean (see references cited in SIOTI-ESWG 2020 and Onandia et al 2021). However, there has been scarce specific research in the Indian Ocean. In general, existing survival rate analysis studies were based on the use of pop-up satellite tags (sPAT) that allow estimation of the mortality rate of species while providing information on vertical and horizontal movements. The studies completed show higher overall mortality rates for sharks in purse seiners (70% - 80%) than in longlines (around 15%). It was based on those studies that the PCR for Echebatar (DeAlteris et al 2018) stated that "there is a 10-20% survival rate for the captured silk sharks".

The specific objectives of the study implemented by the ESWG are:

- Estimate the survival rate after the release of *C. falciformis* through the application of good practices in purse seiners using sPAT and MiniPAT satellite tags.
- Identify the correlation between the number of *C. falciformis* and the volume of catch per set (total tonnes caught in a set and the biomass under the FAD where the set is to be made).
- Identify the correlation between the number of *C. falciformis* caught per set and the geographical location of the set.

In this study, lactate concentrations from blood samples have been used in combination with satellite-linked tags (PATs) to quantitatively assess the fate of released sharks. SIOTI-ESWG (2020) presents preliminary results from a tagging performed during a fishing trip in 2020, but another tagging with mini-PATs will be performed in 2021. Mini-PATs are more expensive tags, but they allow for assessing behaviour (migratory patterns) and habitats (vertical tracks and sea

temperature). The final results of the project will be available by the end of 2021. These will also include the use of vertical habitat of silky sharks to identify possible strategies to mitigate incidental catches and assess the precision of the estimates of the rate of shark catches made by observers.

Of the total silky sharks caught incidentally during 41 FAD sets performed in 2020, 28 were tagged with satellite tags. Tagging was performed: i) when releasing the shark from main deck before going down to the fishing deck and ii) releasing the shark through the upper belt once it reached the fishing deck. The tagged specimens were measured and sexed with a blood sample taken to measure lactate which is a blood parameter closely related to anoxia levels.

To analyse post release mortality (PRM) and identify where and when silky shark lesions occur, specimens were sampled in the different phases of fishing: (i) during the hauling of the net (entangled specimens); (ii) during the Brailing of the catch on board, differentiating the number of the sequence of Brail (first Brails, second Brails and the rest) and measuring the duration of the time from the beginning of the fish handling until the release of the specimens, in which the anoxia is prolonged. After their release, vitality categories were assigned to all the specimens being: 4 (perfect) vigorous swimming and no external injuries; 3 (good) good swimming, although somewhat slower and apparently disoriented; 2 (regular) laborious swimming and / or visible major traumas; 1 (bad) specimens capable of turning around and swimming with great efforts and 0 (dead) specimens that sank with the ventral zone upwards.

The results of this report are preliminary due to the recent implementation of satellite tags.

- Silky shark was caught in 27 of the total 41 fishing operations carried out.
- In three FADs, several sets were made within a few days. Silky sharks were only found in the initial set.
- In recently deployed FADs (<10 days) there was no captures of non-tuna species. This suggests that the first species to colonize these FADs were tunas.
- 28 specimens of silky shark were tagged during the fishing trip to achieve the greatest spatial-temporal distribution.
- 8 of them died during the first 24 hours and two other tags gave premature signs, after 10 and 32 days respectively, of clear indications of that they had been caught by another fishing vessel.
- The rest of the tags remain in place, according to the pre-established parameters for their release.
- The categorized vitality assigned after liberation and the results obtained can be seen in the Table below.

Table 4.2.7.6. Status of silky sharks in the different phases of fishing after release

	Perfect (4)	Good (3)	Regular (2)	Bad(1)	Dead (0)	Total %
Entangled	16	16	8	2	0	15,11%
1st Brail	0	11	27	12	12	22,30%
2nd Brail	0	4	17	26	31	28,06%
Other Brails	0	0	9	21	66	34,53%
Total %	5,76%	11,15%	21,94%	21,94%	39,21%	100,00%

As shown in the table above, entangled specimens were the ones in the best physical condition, mainly due to the brief exposure to anoxia and because they did not suffer from crushing during the net hoisting. Also, longer time in the codend before release leads to greater damage and lower vitality of individuals. These results, together with the data that the tags will provide once the programming cycle is complete and the results of the blood tests, will allow a more exhaustive estimation of the survival of silky sharks that are incidentally caught.

Some preliminary conclusions considered in SIOTI-ESWG (2020) are listed below:

- Mortality of the silky shark in the purse-seine fishery for tropical tunas is highly conditioned by the volume of the catch of each set, as well as the composition of the species. When large tuna such as yellowfin tuna or bigeye > 30kg are caught in volumes greater than 30 or 40 mt, the chances of survival of the sharks are reduced.
- Survival values found in this study are higher than those of previous studies performed in the Pacific Ocean, and higher than the estimate of 50% considered in the initial assessment (DeAlteris et al 2018).
- The implementation of the Code of Good Practices, together with the double conveyor belt (see **figure below**), have a positive effect on survival, not only in silky sharks but also in other associated species, although they have yet to be quantified. The immediate release of entangled silky sharks and those arriving at the fishing deck via the double conveyor belt significantly reduces post-released mortality.



Figure 4.2.7.3. Silky shark specimen in the double conveyor belt. Photo by: Iñigo Onandia. Source: SIOTI-ESWG 2020

(iii) Considerations of the cumulative impacts on ETP species

For ETP species, cumulative impacts are only assessed under 2.3.1a where there are limits in place, which is not the case for any of the ETP species impacted by the Echebatar fleet. Thus, cumulative impacts with overlapping fisheries have not to be considered. This is consistent with the approach presented in the recent [Public Certification Report of the CFTO IO Purse Seine skipjack fishery](#) prepared by Control Union and published on June 2021.

4.3 Version details

Details on the version of the fisheries program documents used for this assessment are presented in table below.

Table 4.3.1- Fisheries program documents versions

Document	Version number, date of publication (and date effective)
MSC Fisheries Certification Process	Version 2.2, 25 March 2020 (25 September 2020)
MSC Fisheries Standard	Version 2.01, 31 August 2018 (28 February 2019)
MSC General Certification Requirements	Version 2.4.1, 7 May 2019 (28 September 2019)
MSC Surveillance Reporting Template	Version 2.1, 25 March 2019 (25 March 2019)

5 Results

5.1 Surveillance results overview

5.1.1 Summary of conditions

Table 5.1.1.1 lists the condition set during the initial assessment (and closed as a result of the current audit), together with the new condition set at this audit.

Table 5.1.1.1. Summary of conditions

Condition number	Condition	PI	Status	PI original score	PI revised score
C1	By the fourth annual surveillance audit, the client must demonstrate that information is adequate to measure trends and support a strategy to manage impacts on ETP species	2.3.3	Ahead target	70	N/A
C2	By the fourth annual surveillance audit, the client must demonstrate that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm.	2.4.1	On target	70	N/A

C3	By the third annual surveillance audit, the client must provide evidence that a partial strategy in place that is expected to result that it will be highly unlikely that derelict FADs could reduce structure and function of the coral reefs to a point where there would be serious or irreversible harm	2.4.2	CLOSED	75	80
C4	By the fourth annual surveillance audit, the client must provide evidence that information is adequate to allow for identification of the main impacts of derelict FADs on coral reefs, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.	2.4.3	Ahead target	75	N/A
C5	Sla. By the fourth annual surveillance audit, the client must provide evidence that the main impacts of the FADs used in the UoA/UoC on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail. Sld. By the fourth annual surveillance audit, the client must provide evidence that there is adequate information on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	2.5.3	Ahead target	75	N/A
C6	By the third annual surveillance audit, the management system in the Seychelles includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	3.1.2	Ahead target	75	N/A
C7	By the second annual surveillance audit, 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.	3.2.1	CLOSED	75	75⁴
C8	By the third annual surveillance audit: Sld. Information on the fishery's performance and management action relevant to the Seychelles fishery and private agreements 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.	3.2.2	Ahead target	75	N/A
C9	By the first annual surveillance audit following recertification (anticipated to be in 2026), the client must demonstrate 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 reflected in PI 1.1.1 SG80 (i.e., it is highly likely that the stock is above the PRI and is at or fluctuating around a level consistent with MSY).	1.2.1	Ahead target	70	NA
C10	By the first annual surveillance audit following recertification (anticipated to be in 2026), the client must demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	1.2.2	Ahead target	80 <i>(revised to 75 in 1SA)</i>	N/A
C11	By the first annual surveillance audit following recertification (anticipated to be in 2026), the client fishery should demonstrate that at IOTC level, decision-making processes regarding skipjack stock management respond to important issues, specifically to skipjack catches in excess of the annual catch limit corresponding to the HCR, in a transparent, timely and adaptive manner. This could be done by implementing the harvest strategy set out in Resolution 16/02 (to be superseded by Res 21/03) and in Condition 1, or by some other means as appropriate.	3.2.2	NEW	75	75

⁴ Overall PI score did not changed since a new condition (C11) on a different SI was set as a result of harmonization activities

5.1.2 Total Allowable Catch (TAC) and catch data

Currently, no TAC has been established for the skipjack tuna in the IO, but there is an annual catch limit of 470, 029 t for the period 2018-2020 resulting from the application of the HCR adopted Res 16/02. No further quota allocation system is established for this species.

UoC catches from 2020 are preliminary (ESWG 2021). In 2020, the Echebatar fleet caught 7.1% of the total catch limit for the skipjack in the IO.

Table 5.1.2.1. Catch limit set in 2020 for the skipjack tuna in the IO and skipjack catches corresponding to the Echebatar fleet

Year 2020	
Catch limit (*)	470,029 t (*)
UoC share of the catch limit	N/A (**)
Total green weight caught by the UoC	33.867

(*) as established at the IOTC Res 16/02 for the period 2018-2020.

(**) There is no further quota allocation

5.1.3 Recommendations

5.1.3.1. Progress on existing recommendations

RECOMMENDATION 1. (PI 1.2.1) Observers estimate and report on discarded catch and reasons for discarding.

Progress: Closed at 1 SA (see Stokes and Rios 2020 for more details)

RECOMMENDATION 2. (PI 2.3.3) A higher percentage of observer data is available for review each year at annual surveillance audits to better assess impacts on ETP species

Progress: Closed at 1 SA (see Stokes and Rios 2020 for more details)

5.1.3.2. New recommendations

No new recommendations were set to the certified fishery as a result of the current surveillance audit.

5.2 Re-scoring Performance Indicators

As part of the activities to be performed during surveillance audits, the CAB shall re-score where the information for PI scores has changed (FCP v2.2 7.28.15.1). During current surveillance audit the team found that the information for 2 different PI scores changed and shall be re-scored: PI 2.4.2 and PI 3.2.2. In the case of PI 3.2.2, SI(a) was re-scored downwards as a result of harmonization with the CFTO fishery, while SI(d) was re-scored upwards since the team considered that Condition 8 could be closed.

Furthermore, PI 1.2.3 and PI 1.2.4 were re-scored because of the need to ensure full consistency between the scores of the overlapping fisheries.

Re-scoring tables are presented below. Changes made to the original rationales and scores are **highlighted in light blue**, while supersede text is crossed out.

5.2.2 Re-scoring table PI 1.2.3

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			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock

		composition is available to support the harvest strategy.	data are available to support the harvest strategy.	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?	Yes	Yes	No

IOTC (2014a) describes information sources for use in stock assessment of skipjack in the Indian Ocean. A single stock is assumed for the most recent assessment (IOTC, 2014c) but previous assessments have explored multiple area formulations and the WPTT and SC (IOTC, 2016ab) have noted the need for further exploration of spatial complexity. An IOTC Stock Structure Project using genetic and otolith microchemistry markers will start in 2017, focused on several IOTC species including Skipjack. Tagging data are available for spatial model fitting.

Stock productivity and fleet composition are well understood and the assessment takes account of both. The information available is considered sufficient to support the HS, itself dependent on the stock assessment and emergent advice, including status reporting against defined reference points.

- SG60 is met.
- SG80 is met.

Fleet composition data are available and used in the stock assessment which fits to a single area, by quarter (of year) for four fleets, including the UoA (Maldives pole and line). Stock abundance indices (CPUE) are available for three fleets (both associated and unassociated purse seine from the EU/Seychelles, and from the UoA). The CPUE analyses draw on some other (environmental) data which are also used to help interpret recruitment patterns. UoA removals are reported annually to the IOTC in accordance with IOTC Res 10/02, now superseded by Res 15/02. While a large range of data is available (ageing, size frequencies, growth, maturity, fleet structure, CPUE, etc.), there is not a clear strategic body of research specific to the longterm UoA-specific management system (SA2.6.3.1) or information yet available fully to explore alternative stock hypotheses (GSA2.6.1) within assessment or further MSE.

- SG100 is not met

	Monitoring			
b	Guide Post	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.	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 with sufficient frequency to support the harvest control rule.	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 information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Yes	Yes	Yes No

From IOTC (2019) legend for the data reporting scores for the figures below

Data reporting scores:

	0
	2
	4
	6
	8

Each IOTC dataset (nominal catch, catch-and-effort, and size data) are assessed against IOTC reporting standards, where:

- **Score: 0** indicates the amount of nominal catch associated with each dataset fully reported according to IOTC standards.
- **Score: 2 – 6** indicates the amount of nominal catches associated with each dataset partially reported by gear and/or specie (i.e., adjusted by gear and species by the IOTC Secretariat or for any of the other reasons provided in the document).
- **Score: 8** indicates the amount of nominal catches associated that is fully estimated by the IOTC Secretariat (i.e., nominal catches) or data that is not available (i.e., catch-and-effort or size data).

Catch data are considered to be generally well known for the major industrial fisheries, including the UoA, with the proportion of catches estimated, or adjusted, by the IOTC Secretariat relatively low (Figure 1.2.3). Catches are less certain for artisanal fisheries for a number of reasons, including:

- catches not fully reported by species;
- uncertainty in the catches from some significant fleets including the Sri Lankan coastal fisheries, and coastal fisheries of Comoros and Madagascar.

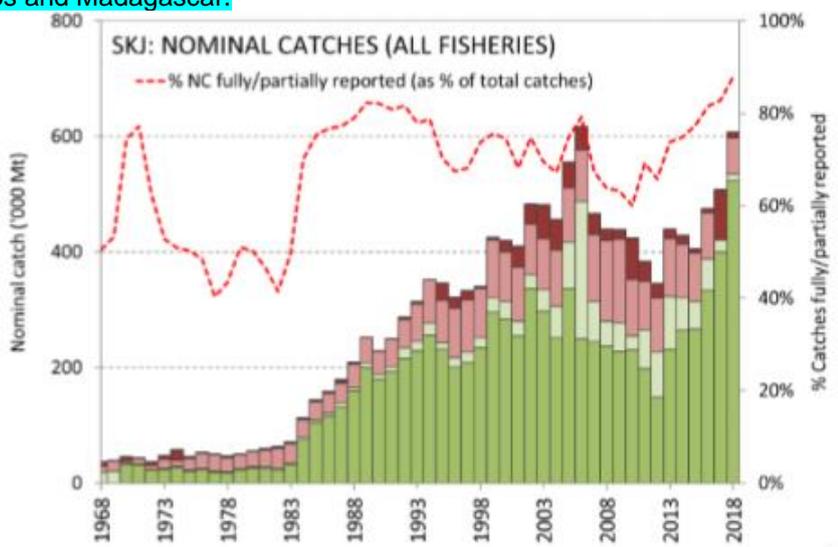


Figure 1.2.3: Skipjack tuna: nominal catches data reporting coverage (1968–2018). The red dotted lines indicated the proportion of catches fully/partially reported according to the IOTC data reporting standards for nominal catches. Data as of September 2019. (IOTC, 2019)

Standardised CPUE series are available from Maldives PL fleet and EU associated PS sets. (PL index 1995 – 2018; PSLs index 1990 – 2019).

In addition, a total of 115,693 skipjack (representing 53% of the total number of fish tagged) were tagged during the Indian Ocean Tuna Tagging Programme (IOTTP), of which ≈68% were released during the main Regional Tuna Tagging Project-Indian Ocean (RTTP-IO) around Seychelles, in the Mozambique Channel and off the coast of Tanzania, between May 2005 and September 2007. The remaining were tagged during small-scale tagging projects, and by other institutions with the support of IOTC around the Maldives, India, and in the south west and the eastern Indian Ocean.

To date, 17,669 specimens (15% of releases for this species), have been recovered and reported to the IOTC Secretariat. Around 70% of the recoveries were from the purse seine fleets operating from the Seychelles, and around 29% by the pole-and-line vessels mainly operating from the Maldives. The addition of the data from the past projects in the Maldives (in 1990s) added 14,506 tagged skipjack tuna to the databases, of which 1,960 were recovered mainly in the Maldives.

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 with sufficient frequency to support the harvest control rule, therefore **SG60 and SG80 are met.**

For a number of fisheries important for catches of tropical tuna, catch-and-effort remains either unavailable, incomplete (e.g., missing catches by species or gear), or only partially reported according to the standards of IOTC Resolution 15/02 (IOTC, 2015)

Although all information required by the harvest control rule is monitored with high frequency, this is not necessarily done at a high degree of certainty, neither is there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty, therefore **SG100 is not met.**

Stock abundance is estimated using the stock assessment rather than any direct survey methods, based on a wide range of data from all fisheries, input parameters and assumptions. Amongst the inputs to the assessment are indices of relative abundance in the form of standardized CPUE from three fleets (both associated and unassociated purse seine (of which the UoA is a subset), and Maldives Pole and Line.

There are problems associated with all indices. The Maldives Pole and Line fleet operates only within a restricted area of the skipjack distribution, has increasingly fished around FADs, and is a relatively short time series (because of mechanization changes to the fleet). Purse seine CPUE in principle might better reflect stock abundance given the wider distribution of fishing, but separation of associated (FAD) and unassociated (FSC) purse seine effort is difficult. Also, there have been many technological advances in purse seine fisheries which are difficult to account for. Nevertheless, assessments in recent years, including the most recent in 2014, have explored the indices and have attempted to fit them. Signals from different indices conflict and how the assessment weights each becomes important. The approach taken (see PI1.2.4) of using a grid of assessments overcomes this problem to an extent and attempts to incorporate uncertainty in estimates of management-related metrics that feed in to HCRs and the HS.

A spatially resolved assessment might help to resolve conflicts between indices but the current assessment is for a single area. The problem is a modeling one given that no single index can be expected to represent the entire stock.

UoA removals (landings) of skipjack for the period 2012-2015 have been of the order of 11,000-15,000 t per year against total removals approaching 400,000 t (i.e., less than 4%). UoA removals are reported as part of the EU, Seychelles and other national statistics to the IOTC according to a range of resolutions (e.g., 10/08, 15/01, 15/02, 15/03). The data collection system (landings and at sea observers) for the UoA is described more fully in the Introduction to P2 scoring section of this report.

IOTC (2016d) summarizes the standing of a range of data and statistics received by the IOTC Secretariat for skipjack tuna, in accordance with IOTC Resolution 15/02. No issues are noted for EU Spain purse seine fisheries (of which the UoA is part) as affects skipjack data. Given the treatment of catch, effort, and size frequency data in the stock assessment, it is clear that UoA removals are monitored regularly and with sufficient coverage and accuracy to support use of assessment estimates, consistent with HCR needs and within the HS.

• SG60 is met.

• SG80 is met.

The information required for the HCR is that required for the stock assessment to estimate spawning biomass in relation to B0. Issues with the data are considered annually (e.g., IOTC (2016d)) and the assessment process takes these in to account (see PI1.2.4). The MSE work used to develop the HCR (see PI1.2.2) allows for uncertainties in assessment process/outputs rather than in input data directly. The WPTT and SC report on assessment quality and uncertainty in relation to the data inputs.

• SG100 is met.

C	Comprehensiveness of information	
	Guide post	There is good information on all other fishery removals from the stock.
	Met?	Yes

According to IOTC (2016d), the majority of skipjack removals are by purse seine (~39%), gillnet (~26%), and pole and line (~17%). Main removals by country are Indonesia (purse seine, troll, and gillnet, 21%), Sri Lanka (gillnet and longline, 15%), and the EU-Spain (purse seine, 15%). Purse seine catches are dominated by FAD-associated sets of the order of 120,000 t per year over the last decade, compared to less than 10,000 t per year from free-school sets since 2009.

The IOTC has agreed a number of resolutions pertinent to improved catch and effort reporting, with Res 15/02 specifying mandatory statistical requirements for IOTC Members & Cooperating Non-Contracting Parties. The secretariat reports annually on the standing of a range of data and statistics reported (e.g., IOTC, 2016d). The latest report covers retained catches and reports these are generally well known for the major industrial fleets, with little need for the secretariat to make estimates or adjustments. Discards are considered to be low, though estimates are not available for most of the industrial fisheries. Catches are less certain for many of the artisanal fisheries with incomplete reporting by species by some fleets, and uncertainty in some of the more significant fleets (e.g., Sri Lanka). The secretariat includes information on data other than removals used in the stock assessment but these are not relevant at SIc which refers only to removals. The stock assessment (see PI 1.2.4) splits removals in to three industrial fleets, all with good quality information on removals, as well as size and effort data: i) Maldives pole and line, ii) FAD purse seine, and iii) FSC purse seine (where the UoA is a subset of ii and iii). It additionally includes all other removals as a single fleet, using data supplied by members with estimates and adjustments as necessary made by the secretariat. Overall, while there are known problems with some of the artisanal fishery reporting, the quality of information on non-UoA removals is considered sufficiently good for stock assessment purposes and hence to inform management.

- SG80 is met.

References

For IOTC Resolutions see: <http://www.iotc.org/cmms>
 IOTC (2014a) Report of the Sixteen Session of the IOTC Working Party on Tropical Tunas IOTC–2014–WPTT16–R[E]
 IOTC (2014c) Indian Ocean Skipjack Tuna Stock Assessment 1950-2013 (Stock Synthesis) IOTC–2014–WPTT16–43 Rev_3
 IOTC (2016a) Report of the 18th Session of the IOTC Working Party on Tropical Tunas IOTC2016-WPTT18-R
 IOTC (2016b) Report of the 19th Session of the IOTC Scientific Committee IOTC-2016-SC19- R IOTC
 (2016d) Review of the statistical data and fishery trends for tropical tunas IOTC–IOTC, 2016–WPTT18–07
 IOTC, (2015). Resolution 15/02 mandatory statistical reporting requirements for IOTC contracting parties and cooperating non-contracting parties (CPCS). Retrieved from <http://www.iotc.org/cmm/resolution-1502-mandatory-statistical-reporting-requirements-iotc-contracting-parties-and-cooperating-non-contracting-parties-cpcs>
 IOTC, (2019d). Report of the 21st Session of the IOTC Working Party on Tropical Tunas. Donostia-San Sebastian, Spain, 21 – 26 October 2019. IOTC–2019–WPTT21–R[E]

Overall Performance Indicator score	90 80
Condition number (if relevant)	NA

5.2.3 Re-scoring table PI 1.2.4

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			
	Guide 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?		Yes	No Yes

~~NOTE: The most recent stock assessment is summarized in IOTC (2014a). The document cites IOTC–2014–WPTT16–43 Rev_2 (IOTC, 2014b), though online the available stock assessment file is IOTC–2014–WPTT16–43 Rev_3 (IOTC, 2014c) (<http://www.iotc.org/meetings/16th-working-party-tropical-tunas>). All results shown for skipjack in 2014, 2015, and 2016 IOTC WPPT and SC documents relate to the Rev_3 document, in particular Appendix 3 which shows results from final assessment runs following specified inputs from the WPTT.~~

~~The next stock assessment is required by IOTC (2016c) in 2017, with a new assessment to be undertaken every three years.~~



The stock assessment used to generate estimates relevant to management is an integrated statistical model implemented using the SS3 framework, providing probabilistic estimates of management-related metrics. It builds on earlier skipjack assessment models developed by Kolody et al (2011) and Sharma et al (2012).

The model implemented in 2014 assumes a single area. Four fleets, operating quarterly, are included. The model is age-structured, utilizing length-frequency data and a growth function. Beverton-Holt recruitment dynamics are assumed, with a base case steepness of 0.9. Available data for fitting include two CPUE indices (purse seine and Maldivian Pole and Line), length frequencies, tag recoveries (mostly from purse seine). For any model run, fixed growth (von Bertalanffy or Richards) and maturity curves were assumed. Length-based selectivity was estimated for each fleet using a flexible, non-parametric spline.

Model fitting in 2014 did not readily define a clear base case or set of runs and initial results presented status estimates from a candidate base case run with uncertainty also defined from a grid of 141 model formulations and fits. Following input from the WPTT, a final set of 81 runs was used to form a grid, from which medians of management-related quantities and confidence intervals were determined. The results from this grid are shown in IOTC-2014-WPTT16-43 Rev_3, Appendix 3, and have become the standard summary for skipjack status since that time.

The assessment grid explored sensitivity to steepness, natural mortality, use of CPUE index, and treatment of recruitment as deterministic or stochastic. Up to and including 2016, advice from the SC based on the assessment has utilized results from the WPTT defined grid and projections/sensitivity results expressed through the Kobe II Strategy Matrix (IOTC, 2016ab). The advice provided, based on the stock assessment, has been appropriate for the management arrangements in use until adoption of IOTC Res 16/02. For the HCR adopted through IOTC Res 16/02, the key assessment output required is $S_{current}/S_{B0}$. The stock assessment provides a probabilistic estimate of this metric and is appropriate for the HCR.

• SG80 is met.

The assessment takes in to account the growth, mortality, and maturation profile of skipjack tuna in the Indian Ocean, using the most up to date biological information. However, it assumes a single stock while previous assessments have considered 2/3 area models. The WPTT and SC have recognized the need for further consideration of spatial complexity, with complex movement patterns observed through tagging studies. Also, there are inconsistencies between relative abundance trends as seen through CPUE indices for different fleets.

• SG100 is not met.

The stock assessment that is currently used to provide scientific advice for the three tropical tunas stocks in the Indian Ocean was carried out using Stock Synthesis III (SS3). Stock Synthesis (SS3) is an integrated statistical catch-at-age model that is widely used for many stock assessments across tuna RFMOs (Methot and Wetzel 2013). SS3 takes relatively unprocessed input data and incorporates many of the important processes (mortality, selectivity, growth, etc.) that operate in conjunction to produce fits to observed catch, size and age composition and CPUE indices. Because many of these inputs are correlated, the concept behind SS3 is that they should be modelled together, which helps to ensure that uncertainties in the input data are adequately represented in the assessment. SS3 is comprised of three subcomponents: 1) a population subcomponent that recreates the numbers/biomass at age using estimates of natural mortality, growth, fecundity, etc; 2) an observational sub-component that consists of observed (measured) quantities such as CPUE or proportion at length/age; and 3) a statistical sub-component that uses likelihoods to quantify the fit of the observations to the recreated population. Basic equations and technical specifications underlying Stock Synthesis can be found in Methot (2000). SS3 Version 3.30 has many updated features from previous versions, notably it allows for greater precision in modelling temporal dynamics, in specifying future recruitment and it allows for more streamlined modelling of time-varying processes.

Fu (2020) presents a stock assessment for Indian Ocean Skipjack (*Katsuwonus pelamis*) using Stock Synthesis 3 (SS3). The assessment uses a spatially aggregated, age structured model that integrates multiple datasets into a unified framework. The assessment includes catch data grouped into four separate fisheries covering the period from 1950 through to 2019, two CPUE series, length composition data, and tag-recapture data. Key elements and core assumptions in the assessment model are summarised below:

- The population model is age based, spatially aggregated, and seasonally structured.
- The model is iterated on an annual cycle consisting of four seasons.
- The model assumes that there is a shared spawning stock and total recruitment follows a Beverton-Holt relationship, with annual deviates and temporal variability in the proportional distribution of recruits among four seasons.

- Seven fleets were defined on the basis of gear and fleet of operation: 1. PL – Maldivian Pole and Line fleet. 2. PSLs - FAD/log associated Purse Seine (PS) sets from the EU/Seychelles fleets. 3. PSFS - unassociated PS sets from the EU/Seychelles fleets. 4. Gillnet - includes primarily gillnet fleets from Sri Lanka, Iran, Indonesia and Pakistan 5. Line - includes primarily handline, troll, and small coastal longline gears from Yemen, Sri Lanka, Maldivian, and Madagascar. 6. Longline – a trivial catches from Distant water longline fishing fleets 7. Other – includes all other fleets, primarily non-EU/Seychelles PS fleets, and small coastal fleets (e.g. ring nets).
- Standardised CPUE series are available from Maldives PL fleet and EU associated PS sets. (IOTC-SKJ-**Error! No se encuentra el origen de la referencia.**) (PL index 1995 – 2018; PSLs index 1990 – 2019)
- Length composition data are available for all defined fisheries.
- Tagging data are available from the RTTPIO and small-scale tagging programmes.
- The model estimated non-parametric (cubic spline) length-based selectivity for each fleet independently (with sufficient flexibility to describe logistic, dome-shaped or polymodal functions).
- Estimated parameters include virgin recruitment, selectivity parameters, recruitment deviations, and the seasonal pattern of recruitment.
- Fixed parameters include stock recruit steepness and life history parameters describing growth and the maturity schedule.

Considering the above, the assessment takes into account the major features relevant to the biology of the species and the nature of the UoA, therefore **SG80 and SG100 are met.**

Assessment approach					
b	Guide 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.		
	Met?	Yes	Yes		

The skipjack stock is subject to an integrated, statistical stock assessment which is able to provide estimates of spawning biomass (SB) and a proxy (C/Cmsy) for fishing mortality rate, as well as unfished biomass and other MSY-related reference points against which stock status can be determined and management advice provided. Previously, implicit reference points were used to frame management advice and under IOTC Res 16/02 explicit TRP, LRP and trigger reference points for the HCR have been agreed. All reference points are of standard form as used in multiple fisheries jurisdictions, including tuna RFMOs, and are appropriate to the skipjack stock, taking account of its productivity and resilience. The reference points are appropriate for the stock, can be and have been estimated.

- SG60 is met.
- SG80 is met

Uncertainty in the assessment					
c	Guide post	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?	Yes	Yes	Yes	

Major sources of uncertainty are identified. The assessment assumes a single area but recognizes the need to consider more complex spatial aspects of the stock, building on information contained in data from tagging studies. Other uncertainties identified include alternative signals contained in conflicting CPUE indices, productivity (steepness, mortality), growth, etc.

- SG60 is met.

The assessment takes account of uncertainty both by fitting to a wide range of formulations using a grid of steepness and mortality levels, alternate CPUE indices, and the treatment of recruitment (as deterministic or stochastic), and in

the statistical fitting procedures for each formulation. The estimates of management-related metrics include uncertainty estimates derived from the grid of 81 model runs.

- SG80 is met.

The assessment is an integrated statistical approach which fits parameters given data and multiple assumptions about error distributions, etc. The assessment outputs related to stock status are all estimated and presented probabilistically (see e.g. PI 1.1.1).

- SG100 is met.

Evaluation of assessment			
d	Guide post		The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?		No

Assessments have developed over some years with the most recent assessment being undertaken in 2014.

There has been consideration of simpler catch-based methods to (IOTC, 2014a) to provide confidence in advice from the base case assessment undertaken using SS3. Those methods have provided different status estimates but still suggest the stock was both underfished and not subject to overfishing.

The assessment 2014 conducted using SS3 has been subject to a systematic exploration of the interactions among different sets of assumptions, as shown in results from the grid and the Kobe II Strategy Matrix. However, the WPTT and SC (IOTC, 2016ab) has recognized the need for fuller exploration of spatial complexities and of CPUE data, and there is still a need to better define a base case or restricted set of runs; it cannot yet be said that alternative hypotheses and assessment approaches have been rigorously explored.

- SG100 is not met.

Peer review of assessment			
e	Guide post	The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?	Yes	No

The stock assessments are carried out by the IOTC secretariat and are reviewed at the WPTT which reports to the SC. For methodological issues, the IOTC Working Party on Methods (WPM) may also be involved. In 2014 the stock assessment (IOTC, 2014c) was presented to the WPTT which specified final requirements for model formulations and a parameter/assumption grid to be used in determining advice.

- SG80 is met.

The WPTT arguably provides internal review and its effect can be seen, for example, at IOTC (2014c). However, there is a lack of documentation of WPTT technical considerations and decisions. It is notable that the assessment methods and approaches used are common in many fisheries, including tuna RFMOs, with considerable scrutiny by multiple assessors. Additionally, being transparent, the assessments are considered by a wide range of parties. However, there has been no organized, external review of the skipjack assessment, for example by an independent consultant or through consideration of the assessment during MSE work.

- SG100 is not met.

References

Fu, D. (2020). Preliminary Indian Ocean skipjack tuna stock assessment 1950-2019 (stock synthesis). IOTC–2020–WPTT22–10

IOTC (2014a) Report of the Sixteen Session of the IOTC Working Party on Tropical Tunas IOTC–2014–WPTT16–R[E]

IOTC (2014b) Indian Ocean Skipjack Tuna Stock Assessment 1950-2013 (Stock Synthesis) IOTC–2014–WPTT16–43 Rev_2

IOTC (2014c) Indian Ocean Skipjack Tuna Stock Assessment 1950-2013 (Stock Synthesis) IOTC–2014–WPTT16–43 Rev_3

Kolody, D., M. Herrera and J. Million. 2011. 1950-2009 Indian Ocean Skipjack Tuna Stock Assessment (Stock Synthesis). IOTC-2011-WPTT-14(Rev1)



Methot, R.D. and Wetzel C.R. (2013). Stock synthesis: A biological and statistical framework for fish stock assessment and fishery management, Fisheries Research 142: 86-99.

Methot, R.D. (2000). Technical description of the Stock Synthesis assessment program. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-43, 46 p.

Overall Performance Indicator score

~~85~~ **90**

Condition number (if relevant)

NA

5.2.4 Re-scoring table PI 2.4.2

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			
	Guide post	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 for FAD?	Yes	Yes No	No
	Met for FSC?	Yes	Yes	No
Rationale				

FAD set type

Commonly Encountered Habitats

The purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary.

~~The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of commonly encountered habitats in the Indian Ocean.~~

- SG60 is met.
- SG80 is met.

A strategy is not in place.

- SG100 is not met.

VMEs

There are several measures in place at IOTC level aimed to improve FAD management and use:

- Resolution 15/09 establishing an ad hoc working group on FADs (WGFAD) with a mandate to consider reducing the ecological impacts of FADs through improved design, such as non-entangling FADs and biodegradable material. The WGFAD met on 2017 and the next meeting is scheduled for October 2021. The WGFAD has the mandate from the Commission to develop a new marking scheme and to issue recommendations aimed to develop a FAD tracking and recovery policy. This policy shall define FAD tracking, reporting of lost FADs, arrangements to alert coastal States of derelict/lost FADs at risk of beaching in near real-time, how and who recovers the FADs, how the recovery costs are collected and shared.
- Res 19/02 entered into force in January 2020 and supersede Res 18/08. As previous Resolutions on FADs (Res13/08, 15/08, 17/08 and 18/08), this new CMM establishes procedures on a fish aggregating device (FAD) management plan, including more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species. This CMM aims to: (i)

reduce juvenile bigeye tuna and yellowfin tuna mortalities from fishing effort on FADs, (ii) improving FAD design to reduce the incidence of entanglement of marine turtles, sharks and other species, including the use of biodegradable materials. Some of the measures included in this CMM are listed below:

- The use of instrumented buoy is mandatory on all drifting FADs and prohibits the use of any other buoys, such as radio buoys, not meeting this definition.
- The maximum number of operational buoys followed by any purse seine vessel is set at 300 at any one time. The number of instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 500. No purse seine vessel shall have more than 500 instrumented buoys (buoy in stock and operational buoy) at any time.
- All purse seine vessel, supply or support vessel shall declare to its respective CPC, the number of instrumented buoys onboard, including each unique identifier of the instrumented buoy before and after each fishing trip.
- Reactivation of an instrumented buoy shall only be possible once it has been brought back to port, either by the vessel tracking the buoy/ associated supply or support vessel or by another vessel and has been authorized by the CPC.
- CPCs shall require vessels flying their flag and fishing on DFADs to annually submit the number of operational buoys followed by vessel, lost and transferred (total number of DFADs tagged at sea, by deploying an instrumented buoy on a log or another vessel DFAD already in the water) by 1° by 1° grid area and month strata and DFAD type under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).
- All CPCs shall ensure that all fishing vessels as referred to in paragraph 2 shall record fishing activities in association with FADs using the specific data elements found in Annex III (DFAD) and Annex IV (AFAD) in the section of the “FAD-logbook”
- CPCs having vessels flying their flag and fishing on FADs shall submit, to the Commission, on an annual basis, Management Plans for the use of FADs. Annex I provides guidelines for preparation of dFADs Management Plans. CPCs’ Management Plans shall be analysed by the IOTC Compliance Committee.
- CPCs shall submit to the Commission, 60 days before the Annual Meeting, a report on the progress of the management plans of FADs,
- To reduce the entanglement of sharks, marine turtles or any other species, CPCs shall require their flagged vessels to use non-entangling designs and materials in the construction of FADs
- To reduce the amount of synthetic marine debris, the use of natural or biodegradable materials in FAD construction should be promoted. CPCs shall encourage their flag vessels to use biodegradable FADs in accordance with the guidelines at Annex V with a view to transitioning to the use of biodegradable FADs, with the exception of materials used for the instrumented buoys, by their flag vessel from 1 January 2022. CPCs shall, from 1 January 2022, encourage their flag vessels to remove from the water, retain onboard and only dispose of in port, all traditional FADs encountered (e.g. those made of entangling materials or designs).
- CPCs are encouraged to conduct trials using biodegradable materials to facilitate the transition to the use of only biodegradable material for DFADS construction by their flagged vessels.
- CPCs shall ensure that the instrumented buoy attached to the DFAD contain a physical, unique reference number marking (ID provided by the manufacturer of the instrumented buoy) and the vessel unique IOTC registration number clearly visible. A new marking scheme shall be developed by the ad-hoc FAD working group.
- In order to support the monitoring of compliance with the limitation in the number of FADs, while protecting business confidential data, the instrumented buoy supplier company or the CPCs shall, starting 1 January 2020, report, or require their vessels to report, daily information on all active FADs to the Secretariat. Such information shall contain, date, instrumented buoy ID, assigned vessel and daily position, which shall be compiled at monthly intervals, to be submitted with a time delay of at least 60 days, but no longer than 90 days.
- The Commission shall establish a DFAD tracking and recovery policy at its annual session in 2021, on the basis of recommendations from the ad-hoc FAD working group. The policy shall define DFAD tracking, reporting of lost DFADs, arrangements to alert coastal States of derelict/lost DFADs at risk of beaching in near real-time, how and who recovers the DFADs, how the recovery costs are collected and shared.
- The IOTC Secretariat shall submit a report, on an annual basis, to the IOTC Compliance Committee on the level of compliance of each CPC with operational buoy limits, annual limits of instrumented buoys purchased.

As required by this CMM, both Seychelles and the EU-Spain, submitted to the Commission annual Management Plans for the use of FADs in 2020 and 2021, which were analyzed by the Commission (IOTC-2020-CoC17-09_Rev1 and

IOTC-2021-CoC18-10). Both CPCs have been complying with the limit on number of FADs in use and instrumented buoys to be acquired annually, FAD marking, data reporting and FAD tracking. The Echebatar fleet has followed with all requirements adopted in Res 19/02. Furthermore, Echebatar also presented evidence of the following actions related to FAD management, including research on the impact of lost FADs:

- **Reducing the number of FADs beyond the limits adopted in Res 19/02.** For 2021 and 2022, the Echebatar FAD Management Plan adopted in 2019 sets more restrictive objectives than the IOTC regulations on this issue. Since January 2021, each certified vessel has a maximum of 275 instrumented operational buoys that may follow at any one time, and the number instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 475 (Res 19/02 limits are 300 and 500, respectively). In 2022, Echebatar has the commitment to further increase reductions up to 250 instrumented operational buoys at any one time, and 450 instrumented buoys acquired annually.
- **Verifications on the number of FADs in use and acquired instrumented buoys.** There are several ways of verification: (i) FAD logbooks are completed by every Echebatar fleet, compiled by AZTI and sent to the flag State to be reported to the IOTC Secretariat; (ii) The instrumented buoy suppliers send daily data on the number of active buoys per vessels and day to AZTI. On a monthly basis, AZTI compiles this information and reports to the fishing companies and the flag States (so they can later inform the IOTC Secretariat). AZTI also collects information on the acquired instrumented buoys to verify the implementation of Res 19/02 in this regard; (iii) Echebatar internally verifies that its more restrictive limits (see bullet above) are followed.
- **Non-entangling FADs.** Since 2012 Echebatar adopted the ANABAC/OPAGAC Code of Good Practices. As part of monitoring the implementation of the code, for every fishing trip AZTI assesses the percentage of FADs (either set or visited) built following non-entangling designs and materials as outlined in Annex V of Res 19/02 (or previous superseded Resolutions). An annual report is prepared and shared with the fishing companies, including Echebatar. All Echebatar vessels have valid certificates for section 4 of the Standard UNE 195006:2016 on good practices on board, which is audited by AZTI on an annual basis. This Section includes the use of non-entangling FADs.
- **Biodegradable FADs.** The project known as BIOFAD 'Testing designs and identify options to mitigate impacts of drifting FADs on the ecosystem' funded by the European Maritime and Fisheries Fund (EMFF) has concluded, and the final report was presented (Zudaire et al, 2020) Echebatar has contributed to this project as detailed in the previous surveillance audit. Among other results, a tentative BIOFAD definition was provided. The assessment of the advantages and disadvantages of different biodegradable materials and designs was also considered. Further alternative materials were also tested as potential options for future sustainable FAD constructions. The performance and behaviour of BIOFAD was assessed and compared to NEFADs. Finally, feasibility of using new biodegradable materials was assessed to recommend several optimum BIOFAD prototypes. Both the client and AZTI representatives agreed on considering this as a successful project. The Bio-ropes tested during the project are still being used by Echebatar. The fishing companies have incorporated materials and designs tested as part of the BIOFAD project. However, not all the components were developed, for instance AZTI is currently testing BIOFLOATS (Echebatar is involved in these tests).
- **FAD recovery program (FAD Watch).** Despite no recovery policy has yet been adopted by the IOTC, in 2019 Echebatar started working with other tuna catching companies and stakeholders in the "FAD Watch programme". The FAD Watch project is a collaborative initiative to minimize the impact of FADs in coastal ecosystems of Seychelles. The FAD-Watch project was the first multi-sectorial initiative developed to prevent and mitigate FAD beaching across islands in Seychelles. It is the result of a collaborative work among the Spanish Tuna Purse Seiner fishing representatives (OPAGAC), Island Conservation Society (ICS), Islands Development Company (IDC) and Seychelles Fishing Authority (SFA). The FAD detection system was setup by OPAGAC for 6 buffer areas (Alphonse, Farquhar, Desroches, Poivre, Aride and Silhouette islands), which make possible alerting ICS when FADs crossed buffer areas within 5 and 3 nautical miles of any of these islands. For each intercepted FAD, ICS collected information about the location, habitat type, purse seiner vessel, FAD design, entangled fauna, and fate (removed or not; & disposal method). In order to evaluate the beaching rate and entangling potential of FADs of the target fleet, information was complemented both by buoy tracked data and by data collected on the frame of the voluntary agreement for the application of good practices. More details can be found at (Zudaire et al 2018). During 2020 Echebatar kept collaborating with the SFA, so the IDC could recover lost FADs (despite no MoU was signed in 2020). Finally, the signature of the FADWATCH MOU for year 2 was signed on May 2021. This agreement was signed by SIOTI, OPAGAC, ICS, IDC AND SFA. The proposed activities include the following:
 - Removal of FADs from reefs and beaches and proper storage by ICS island teams with assistance from IDC.
 - Collection of FADs by IDC barge
 - Proper disposal and/or recycling of FAD materials and satellite buoys on Mahé
 - Continuous data collection by ICS describing the types of FADs and the impact caused

- Preparation of annual technical and financial reports by a steering committee using the data collected to assess tasks completed and future needs.
- Fishing companies, through a service provider, to make arrangements to supply ICS with alerts (including date and time and buoy ID, service provider, position coordinates and speed) of probable FAD beaching events as and when a FAD comes within the 3 nautical miles buffer zone.
- During the first 3 months of the MOU, fishing companies to provide support for a service provider to assist local partners (ICS, SFA and IDC) for hardware, software and training required for implementation of FAD Watch, relating mainly to communication of FAD positions.
- ICS, SFA and other local partners in Seychelles to assist in providing suggestions to improve the design of eco-friendly FADs.
- **Assessing the interactions of lost FADs with corals communities in the Indian Ocean.** In 2021 Echebatar signed an agreement with AZTI to develop a study aimed at assessing the risk posed by derelict FADs. AZTI will complete the different phases involving mapping of coral communities, analysis of FAD drift, review of available information on the structure of reefs, risk assessment to identify areas affected by FAD beaching, analysis of the potential impact of derelict FAD on coral communities in the context of other risks, identification and analysis of measure to reduce potential impacts, review of the IOTC policy on recovery of lost FADs, and design and implementation of a study to provide empirical evidence on the nature and extent of damage to corals resulting from lost FADs.

Furthermore, Echebatar vessels are included in the ISSF PVR register. Compliance with sustainable-fishing practices as defined by ISSF is audited on an annual basis. According to the latest audits performed in 2021, all Echebatar vessels are following ISSF's best practices on non-entangling FADs and FAD management plans.

MSC defines "partial strategy" as 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 specific." The team considers that the measures and actions described above constitute a partial strategy, and that this partial strategy is expected to achieve the Habitat Outcome 80 level of performance for VMEs. **On that basis, SG60 and SG80 are met.**

FAD management of the overlapping purse seine fisheries shall be considered when scoring SG100. The AGAC fleet operating in the Indian Ocean is comprised by vessels flying the Spanish and Seychelles flags, as for the Echebatar fleet. Furthermore, these vessels are also implementing the ANABAC/OPAGAC Code of Good Practices and they are also participating in the FADWATCH project. In the case of the CFTO, all vessels are EU flagged (France and Italy). These countries presented FAD management plans to the IOTC and they have also implemented verification systems for their FAD tracking similar to the one implemented by the Echebatar fleet. The CFTO fleet is also participating in the FADWATCH project. It is, however, not a full strategy in the sense that most of the measures (e.g. limiting the number of active instrumented buoys, limiting the number of acquired buoys per year, enhancing the use of non-entangling FADs and the use of biodegradable materials) have not been specifically designed to manage the impact on lost FADs on VMEs (corals), or those which have been specifically designed are restricted to a small geographical area (e.g. FADWATCH) or are still under development (IOTC recovery policy). **SG100 is not met.**

~~The main variable that influences the potential of derelict FADs to reduce the global structure and function of coral reefs to a point where there would be serious or irreversible harm is their number. A number of IOTC regulations limit the number of FADs used by vessels.~~

- ~~Resolution 16/01 on an interim plan for rebuilding the Indian Ocean yellowfin tuna stock, that includes further limits of the number of active FADS (425) per vessel and limits on supply vessels of one per two licensed seiners;~~
- ~~Resolution 15/09 establishing a FAD working group with a mandate to consider reducing the ecological impacts of FADs through improved design, such as non-entangling FADs and biodegradable material;~~
- ~~Resolution 15/08 procedures on a FAD management plan, including a limitation on the number of FADs, more detailed specifications of catch reporting from FAD sets, & the development of improved FAD designs to reduce incidence of entanglement of non-target species, and at the same time will reduce the impacts of FADs on coral reefs.~~
- ~~Resolution 13/08 procedures on a FAD management plan, including more detailed specification of catch reporting from FAD sets, and the development of improved FADs designs to reduce the incidence of entanglement of non-target species.~~

Also to be taken into account are: the potential for significant localized impacts; the number of lost FADs interacting with corals over the 5 years certification period; and the potential for negative impacts over an extended period. The existing related measure is to test the use of biodegradable materials in FAD construction.

The combined effects of these measures will reduce the potential number of derelict FADs and together with better design should reduce the potential for damage. Also, important is the AZTI research project to recover lost FADs before they become derelict.

The UoA is of a limited scale. It consists of 5 seiners that utilize up to than 400 active FADs per vessel. The estimated number of FADs lost annually by the UoA is about 400 of which 50% may reach a shoreline, including coral reef or grounding in shoal water.

These points together with the analysis of the low potential for spatial impact on coral reefs (above), provide evidence that the measures are expected to reduce the footprint of the fishery and lower risk. This supports the conclusion that the measures make it highly unlikely that the derelict FADs from the Echebatar vessels reduce the structure and function of coral reefs to a point where there would be serious or irreversible harm.

The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of VME habitats in the Indian Ocean.

• SG60 is met.

The partial strategy in place consists a number of elements or measures: the potential impact of the Echebatar fishery being indirect (lost FADs) rather than direct (i.e. vessel or gear impacts); the limited scale of the Echebatar fishery with a low number of FADs compared to the sea area covered and the area of coral reefs that could potentially be affected; the regulations to limit the number of FADs; the mandate to improve FAD design (including the use of biodegradable materials); and trials to reduce the number of lost FADs that become derelict on coral reefs.

However, pending the introduction of FADs constructed with biodegradable material, it cannot be concluded that biodegradable FADs will lead to the habitat outcome being achieved in specific locations.

• SG80 is not met.

A strategy is not in place.

• SG100 is not met.

Minor Habitats

As explained above, the FAD sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary.

The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of minor habitats in the Indian Ocean.

• SG60 is met.

• SG80 is met.

A strategy is not in place.

• SG100 is not met.

FSC set type

Commonly Encountered Habitats

As explained above, the purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary.

The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of commonly encountered habitats in the Indian Ocean.

• SG60 is met.

• SG80 is met.

A strategy is not in place.

• SG100 is not met.

VMEs

As explained above, the FSC sets do not have an impact on VMEs. Neither measures or a partial strategy are necessary.

~~The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of VME habitats in the Indian Ocean.~~

- SG60 is met.
- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Minor Habitats

As explained above, the FSC sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary.

~~The cumulative impacts of the FSC and FAD set types, and the Maldives pole and line fishery, are accounted for and do not affect the status of minor habitats in the Indian Ocean.~~

- SG60 is met.
- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Management strategy evaluation				
b	Guide post	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 for FAD?	Yes	Yes	No
	Met for FSC?	Yes	Yes	No
Rationale				

FADs

Commonly Encountered Habitats

As explained above, the purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary,

- SG60 is met.
- SG80 is met.

A strategy is not in place.

- SG100 is not met.

VMEs

Echebstar implemented a limit of one supply vessel to serve 5 their purse seiners as well as a cap of 400 FADs per vessel. This exceeds and pre-empted IOTC Resolution 16/01, the number of FADs permitted in the fishery has been reduced by more than 20% in general, and the number of supply vessels to service FADs has also been reduced. The measures in place to reduce the number of FADs used in the fishery should reduce the potential for derelict ones to

negatively impact coral reefs. The Echebatar fleet has moved to 100% non-entangling FADs, so as to minimize impact with fish, sea turtles and on coral reefs.

These measures are considered likely to work as the potential number of lost FADs will be reduced and reduce potential impact if they become derelict on corals.

- SG60 is met.

The IOTC FAD working group has supported several studies of the use of biodegradable material in FADs and the results of these investigations were reported at the IOTC 2017 meeting.

Currently underway are efforts to develop methods to retrieve lost FADs before they encounter on coral reefs. Echebatar is following the project.

As noted above, a number of measures are in place that will address the FAD impact on coral reefs. The relatively limited area of coral reefs impacted by lost Echebatar FADs; the restricted number of Echebatar FADs (company policy); improved FAD design; and initiatives to prevent lost FADs reaching coral reefs provide an objective basis for confidence that the partial strategy will work.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Minor Habitats

As explained above, the FAD sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary,

- SG60 is met.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

FSC

Commonly Encountered Habitats

As explained above, the purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary,

- SG60 is met.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

VMEs

As explained above, the FSC sets do not have an impact on VMEs. Neither measures or a partial strategy are necessary,

- SG60 is met.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Minor Habitats

As explained above, the FSC sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary,

- SG60 is met.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Management strategy implementation				
C	Guide post		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 for FAD?		Yes	No
	Met for FSC?		Yes	No
Rationale				

FAD set type

Commonly Encountered Habitats

As explained above, the purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

VMEs

As required by Res 19/02, both Seychelles and the EU-Spain, submitted to the Commission annual Management Plans for the use of FADs in 2020 and 2021, which were analyzed by the Commission (IOTC-2020-CoC17-09_Rev1 and IOTC-2021-CoC18-10). Both CPCs have been complying with the limit on number of FADs in use and instrumented buoys to be acquired annually, FAD marking, data reporting and FAD tracking. Furthermore, as detailed in the progress on Condition 2, the client ensures that both its FAD tracking system and the use of non-entangling FADs are being verified externally (by AZTI). All Echebatar vessels have valid certificates on Section 4 of the Standard UNE 195006:2016, dealing with good practices on board (including the use of non-entangling FADs). Echebatar actively collaborates with different initiatives and projects aimed at transitioning to the use of biodegradable FADs, and the certified fleet has adopted some of the biodegradable tested materials. The client keeps collaborating with the FADWATCH project. Finally, a new agreement has been signed with AZTI to assess the risk posed by derelict FADs on coral communities in the Indian Ocean.

Furthermore, Echebatar vessels are included in the ISSF PVR register. Compliance with sustainable-fishing practices as defined by ISSF is audited on an annual basis. According to the latest audit results, all Echebatar vessels are following ISSF's best practices on non-entangling FADs and FAD management plans.

Echebatar pre-empted and exceed the requirement to implement of the IOTC measures to reduce the number of FADs and supply vessels. Also, the company FAD sets exclusively use 100% non-entangling FADs, so as to minimize impact on fish, sharks, sea turtles and coral reefs. Research on biodegradable FADs is well advanced. The project to stop lost FADs becoming derelict on corals has had some positive results and Echebatar is monitoring the approach. This provides some quantitative evidence that the measures/partial strategy are being implemented successfully.

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Minor Habitats



As explained above, the FAD sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary,

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

FSC set type

Commonly Encountered Habitats

As explained above, the purse seine fishery for tuna as a whole does not have an impact on commonly encountered habitats. Neither measures or a partial strategy are necessary,

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

VMEs

As explained above, the FSC sets do not have an impact on VMEs. Neither measures or a partial strategy are necessary,

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Minor Habitats

As explained above, the FSC sets do not have an impact on minor habitats. Neither measures or a partial strategy are necessary,

- SG80 is met.

A strategy is not in place.

- SG100 is not met.

Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs				
d	Guide post	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is clear quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met for FAD?	Yes	Yes	Yes
	Met for FSC?	NA	NA	NA
Rationale NA				

FAD set type

Coral reefs are the only VME identified in relation to the FAD fishery, and in reality there are no specific government or regulatory management requirements related to coral reef VMEs in the western Indian Ocean, or protection measures afforded to coral reef VMEs by other MSC UoAs/non-MSC fisheries in the western Indian Ocean. However, as noted previously, there have been numerous measures implemented for other purposes that are resulting in reduced impacts of the FAD set type fishery on VME coral reefs. **As detailed in SI© above, as part of the implementation of the ANABAC/OPAGAC Code of Conduct AZTI monitors the number of active instrumented buoys at any time, the number of acquired instrumented buoys, and the observers on board assess that non-entangling FADs are in use. All Echebatar**

vessels have valid certificates for the Standard UNE195006:2016 (audited by AZTI), which includes the use of non-entangling FADs. Furthermore, Echebatar vessels are included in the ISSF PVR register. Compliance with sustainable fishing practices as defined by ISSF is audited on an annual basis. According to the latest audit results, all Echebatar vessels are following ISSF's best practices on non-entangling FADs and FAD management plans.

Other MSC UoAs overlapping with the fishery include the Maldives Skipjack tuna pole and line fishery (Kiseleva et al 2017) the CFTO Indian Ocean Purse Seine Fishery (Sieben et al 2021) and the AGAC fishery (Akroyd et al 2021) in assessment. None of which have management measures in place related to VME habitats. Therefore, consideration of other MSC fisheries that operate in the region through harmonisation reviews did not raise any other measures that other fisheries had afforded to VMEs. The AGAC fleet operating in the Indian Ocean is comprised by vessels flying the Spanish and Seychelles flags, as for the Echebatar fleet, so they are subject to the same regulations. Furthermore, these vessels are also implementing the ANABAC/OPAGAC Code of Good Practices and they are also participating in the FADWATCH project. In the case of the CFTO, all vessels are EU flagged (France and Italy), so subject to the same regulations as the Echebatar Spanish flagged vessels. The CFTO fleet is also participating in the FADWATCH project. So, all the overlapping purse seine tuna fisheries subject to the same measures and initiatives to protect coral reefs from the impacts of lost FADs. On that basis, **SG60 and SG80 are met.**

There has been a significant reduction in the number of FADs in use in the Indian Ocean. During a recent meeting of the Indian Ocean Tuna Commission (IOTC), it was decided to reduce fishing allowances (quotas) of the yellowfin tuna by 15% beginning in 2017, it was also agreed that fishing gear and devices such as FADs will also be reduced from 550 to 425 per ship. According to Glenn Savy, the chief executive of the Island Development Company (IDC), this represents a significant improvement from 3,000 to 4,000 FADs being deployed by purse seiners before the reduction in their quota for such fishing devices.

(<http://www.seychellesnewsagency.com/articles/5802/FAD+Watch+Seychelles+to+intercept+fishing+devices+to+protect+reefs#sthash.MQDKfGQn.S7J7pjdL.dpuf>)

Note:

- The Echebatar fleet already uses less than the total allowable number of active FADs (375 vs. 425), and fishery wide the number of active FADs has been reduced by as much as 50%.
- There has been a reduction in the number of supply vessels to 50% of the number of licensed seiners (2 purse seiners to 1 supply vessel). The Echebatar fleet has a single supply vessel for its 5 seiners.
- Echebatar is monitoring the ICS project on the rate of FADs going on the coral reef of St Francois atoll and the pilot FAD retrieval program (with OPAGAC support).

Additionally:

- Resolution 15/09 establishing a FAD working group with a mandate to consider reducing the ecological impacts of FADs through improved design, such as non-entangling FADs and biodegradable material. The Echebatar fleet has moved to 100% non-entangling FADs and is moving towards the use of biodegradable material.

The above provides qualitative and some quantitative evidence that Echebatar complies with management requirements to protect coral reefs.

- SG60 is met.
- SG80 is met.

The quantitative evidence on the use of non-tangling FADs and a reduced number of FADs and supply vessels below the IOTC requirement provides clear quantitative evidence that Echebatar complies with management requirements to protect coral reefs.

- The SG 100 requirements are met.

FSC set type

For the FSC fishery, this issue is not scored as the UoA does not impact VME (Not Applicable)

References

Balderson, S.D. and L. Martin. 2016. Environmental impacts and causation of 'beached' Drifting Fish Aggregating Devices around Seychelles Islands: a preliminary report on data collected by Island

Conservation Society, Seychelles.

IOTC WP Ecosystem and Bycatch Meeting

http://www.iotc.org/sites/default/files/documents/2016/09/IOTC-2016-WPEB12-RE_-_FINAL.pdf

[Kiseleva et al 2017](#); [Akroyd et al 2021](#); [Sieben et al 2021](#); [Zudaire et al, 2020](#)

[IOTC-2020-CoC17-09_Rev1](#) and [IOTC-2021-CoC18-10](#)

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	7585
Condition number (if relevant)	3NA

5.2.5 Re-scoring table PI 3.2.2

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			
	Guide 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?	Yes	Yes	
Rationale				

The well-established IOTC decision making process has led to the definition of measures and strategies to achieve the fishery specific objective for the IO skipjack stock to be maintained at a sustainable catch level. While many resolutions and rules could be used as evidence, Reg (IOTC) 16/01 (on an interim plan for rebuilding the IO yellowfin tuna stock) and Reg (IOTC) 16/02 (on HCRs for skipjack tuna) are the best recent examples. Also relevant is the FAD working group (Reg (IOTC) 15/09).

The EU, Seychelles and coastal / island states relevant to the specific fishery incorporate IOTC regulations and both are represented in the decision-making process at the IOTC level.

• SG60 is met

Prior to 2015, absence of concern about the status of the skipjack stock meant there was limited consideration about the need for direct measures and strategies for the skipjack fishery. There was, however, the indirect impacts of the measures adopted to protect the yellowfin and bigeye stocks. The situation is now changing (e.g. Reg (IOTC) 16/02) and management of skipjack fits within the established IOTC process. An additional facet is the FAD working group. The established decision-making process led to the decision to establish the WG which may be considered as part of a strategy. In the EU, the decision-making process applied to the skipjack fishery falls within the overall approach to fisheries (CFP), the SFPA process and the incorporation of IOTC resolutions into the EU legal framework. A variety of EU stakeholders are involved in the process.

The Seychelles decision-making process has an impact on the livelihoods of domestic fishers (see MSC CR GSA 4.8). This is considered under 3.1.2.

Countries involved in private agreements and direct vessel licensing are members of IOTC who participate in the established decision-making processes.

The UoA vessels are subject to all IOTC regulations and requirements.

On the basis of the scores for P3 PIs not being based on an elemental approach, the role and importance of the IOTC processes provides the basis for considering that the UoA has established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.

• **SG80 is met**

Responsiveness of decision-making processes				
b	Guide post	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?	Yes	Yes-No	No
Rationale				

~~The most serious issues are dealt with by the IOTC which incorporates the other jurisdictions. It is generally acknowledged that the IOTC process is transparent and that the involvement of a wide range of stakeholders ensures that the decision-making process takes some account of the wider implications of the decisions. The Commission can establish a Technical Committee when a need for action is identified (e.g. The TCAC was established to tackle the issue of the Quota Allocation Criteria).~~ • **SG60 is met.** The evidence presented for SG60 is also applicable to consideration of IOTC at SG80.

~~The Rules of Procedure set mechanisms for dealing with resolutions made based on scientific evidence and designed to maintain tuna populations at IOTC target levels. Examples are Resolutions 15/08, 16/02 and 17/01 are evidence of the response of IOTC.~~

~~The LDAC process in the EU presents a forum for Spanish stakeholders to raise serious and other important issues in presentations and reports that are sent to the EC and the MS. The EU and / or the MS must reply to any recommendation, suggestion or information received from an RMAC within 2 months. Where the adopted final measures diverge from RMAC opinions, recommendations and suggestions, the EU and / or the MS must detail the reasons for the divergence.~~

~~The Seychelles decision process is covered under 3.1.2. Serious and important issues in fisheries under private agreements and vessel licensing are covered by the IOTC. All parties are fully informed of the issues under consideration and this facilitates their active participation in the decision-making process.~~

• **SG80 is met**

~~Concern has been expressed about the decision-making process in such as private agreements. As such, it cannot be considered that all issues are covered,~~

• **SG100 is not met**

To score this SI effectively, responsiveness to decision-making processes needs to be shown at the different levels.

At IOTC generally, the internal mechanisms of the IOTC support the conclusion that issues identified in the fishery are taken into account in the decision-making process. The IOTC process is adaptive through the Working Parties meeting agenda setting and also with the possibility for the Commission to establish a Technical Committee when a need for action is identified (e.g. Technical Committee on Management Procedure, Technical Committee on Allocation Criteria...). The wider implications of decisions are also examined by IOTC's subsidiary bodies, CPCs (including the EU and the Seychelles) and observers that might be present at these meetings and who inform or are informed of the issues ahead of time i.e through the IOTC process. Observers and CPC can therefore contribute and provide information regarding decisions, including any serious issues that may arise. The EU transposes IOTC Resolutions systematically as legal obligations for EU member states. Working parties are in place to tackle specific issues and CPCs including

the EU and Seychelles, France, Madagascar, Comoros and other states with which there are either bilaterals or SFPAs participate. SG60 is met.

In addition to what may be considered serious issues, other important issues are also raised at IOTC through process. This might include voluntary measures such as on biodegradable FADs and active FAD buoy tracking arising from consultation and research that has led to best practice being developed at the fishing company level such as for the ANABAC vessels (including Echebatar). ANABAC management has been proactive in this regard (see the Code of Good Practice) and the company-led initiatives have been presented at the EU LDAC and thereafter at the IOTC and incorporated into IOTC Resolutions 18/04 and 15/09 i.e. addressing an “important” issue in a proactive way before the use of excessive FAD numbers develops into a serious one (therefore meeting in part SG80). However, another important example for the fishery has been the timely introduction of a total catch limit for skipjack derived from the HCR (Res. 16/02) fixed according to the recommendation of the Scientific Committee (SC) and communicated to all CPC for the years 2018-2020. However, the catch limit set exceeded by 30% in 2018, and by 16% in 2019. In 2020, the new skipjack stock assessment found the stock biomass in a good state, and the Scientific Committee noted that “the recent catches that exceeded the (previously-set) limits established for the period 2018-2020, could have been sustained by favourable environmental conditions”. Therefore, the team considers the catch overages to be an important rather than a serious issue. However, the [23rd Session of the SC](#) held in December 2020 concluded that “the Commission needs to ensure that catches of skipjack tuna during this period (2021 – 2023) do not exceed the agreed limit”. This was also acknowledged in the recent adopted Res 19/03. Until this is done, for example through the implementation of a CPC catch allocation key, the IOTC decision-making processes do not respond to this other important issue. SG80 is not met.

Use of precautionary approach			
C	Guide post		Decision-making processes use the precautionary approach and are based on best available information.
	Met?		Yes
Rationale			

The use of the precautionary approach is explicit within decision making process within the IOTC, the EU and Seychelles. All the coastal / island states with private agreements or direct vessel licensing are members of IOTC or represented in IOTC (French OT) While the skipjack stock remains healthy, Res (IOTC) 16/02 together with a range of other resolutions provides the evidence of a precautionary approach to the management of the fishery.

• **SG80 is met**

Accountability and transparency of management system and decision-making process			
d	Guide post	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.
	Met?	Yes	Yes-No
Rationale			

IOTC Reports and statistics which provides information on the fishery's performance and management for the purse seine skipjack fishery are available for stakeholders to view and download from the website (www.iotc.org) at any point. Additionally, the Seychelles Fishing Authority website contains information on the fishery (<http://www.sfa.sc/>).

• **SG60 is met**

~~Despite information being available to stakeholders, it has been highlighted that it is not always clear as to how available information has been used or why it has not been used (Powers & Medley, 2016).~~

~~The EU's Long Distant Advisory Council (LDAC) and the need for explicit responses from the European Commission (EC) and Member States (MS) satisfies SG80 for the EU jurisdiction. However, specific information is limited for those fisheries conducted under private arrangements.~~

~~As such, explanations are not provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity~~

Furthermore, in February 2020, the EU and the Republic of Seychelles signed an agreement valid for 6 years (2020-2026) that establishes the principles, rules and procedures governing:

- economic, financial, technical and scientific cooperation in the fisheries sector with a view to promoting sustainable fishing in the Seychelles fishing zone to guarantee the conservation and sustainable exploitation of fisheries resources, and developing the Seychelles fisheries sector,
- the conditions governing access by Union fishing vessels to the Seychelles fishing zone,
- cooperation on the management, control and surveillance measures in the Seychelles fishing zone with a view to ensuring that the above rules and conditions are complied with, that the measures for the conservation and sustainable exploitation of fish stocks and management of fishing activities are effective, and that IUU fishing is prevented,
- partnerships between operators aimed at developing economic activities in the fisheries sector and related activities, in the common interest.

A Joint Committee shall be set up to monitor the application of this Agreement. The agreement and the two subsequent Council Regulations (Council Regulation 2020/272 and Council Regulation 2020/271) were published at the Official Journal of the European Union. Council Regulation 2020/271 sets the allocation of fishing opportunities under the Protocol on the implementation of the sustainable fisheries partnership agreement between the EU and Seychelles (2020-2026). At the EU level, all decisions shall be consulted with the multi-stakeholder Long Distance Advisory Council (LDAC).

Besides, it is noticeable that in March 2021 Seychelles has become the first country to submit its report to the [Fisheries Transparency Initiative](#) (FITI). The FITI is a global partnership that seeks to increase transparency and participation for a more sustainable management of marine fisheries. By making fisheries management more transparent and inclusive, the FITI promotes informed public debates on fisheries policies and supports the long-term contribution of the sector to national economies and the well-being of citizens and businesses that depend on a healthy marine environment. The FITI is not operated by one organisation, nor does it represent the work of a single interest group. Instead, the diversity of different stakeholders (ensuring equal participation from government, companies and civil society) is a central feature of how the FITI works, for national implementations as well as international governance. The FITI is a voluntary initiative; however, once a country has decided to participate, mandatory requirements must be followed. The Seychelles first report to the FITI is available online (click [here](#) to download it). During the FITI process, SFA published the two agreements with the government of Mauritius, which allowed Seychelles-flagged vessels to fish in Mauritian water and Mauritius-flagged vessel to fish in Seychelles' waters (the agreement with the EU was already available to the public at the EU website).

At client's level, and in accordance with the Echebatar Strategy & Operational Plan for a Sustainable Purse Seine Tuna Fishery in the Indian Ocean 2019-2023, a new website was created: <https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/>. All meetings, minutes, documents produced by the Echebatar Sustainability Working Group (ESWG) and other related documents are shared. Further, analysed annual catch data from recent years (observed and total estimated catch) based on data recorded by observers on board the Echebatar fleet can be downloaded at this site, together with semi-annual landing reports, active fishing licences from each of the certified vessels and other relevant documents. Interested stakeholders may register on this site to have access to the regularly updated information related the different sustainability activities where the company is involved. Thus, information on Private Agreements is available at the Echebatar web site (<https://echebatar.com/en/echebatar-obtains-msc-certification/msc-up-to-date/2019-annual-surveillance-audit/documents/> - Echebatar: Fleet Documents> info on each individual vessel).

The separate agreements with coastal states are provided in the original MSC certification report (DeAlteris et al 2018), and they will be published and whenever there is a modification, it will be published to the audit team during the corresponding follow-up audit to be reported and published in the report

Based on the information presented above, the team considers that **SG80 is met.** ~~SG80 is not met~~

However, the FiTI report highlights several opportunities for improvement. The Seychelles National multi-stakeholder Group determined 34 recommendations on how to further strengthen fisheries transparency in the country. For instance, there are still three private agreements which are not available to the public: those signed between Seychelles and (i) Taiwan Deep-sea Tuna longline boat owners and exporters Association (TTA), (ii) Top Fortune International (TFI), and (iii) Dongwon Industries Co.Ltd. In particular, the National Multi-Stakeholder Group makes the following recommendations to the Seychelles authorities to improve transparency regarding foreign fishing access agreements:

- The Ministry of Fisheries and Blue Economy (MFBE) should publish online all foreign fishing access agreements and associated protocols
- MFBE should publish online all studies or reports related to the evaluation or oversight of these agreements, which have either been undertaken by national authorities or foreign parties.
- SFA should publish any assessment regarding compliance of fishing vessels with the terms and conditions set forth in their respective access agreement, once available.
- MFBE should publish information from previous (prior to 2019) and recent national stakeholder consultations undertaken with respect to the preparation, negotiation or monitoring of foreign fishing access agreements. Information related to future national stakeholder consultations should be published in a timely manner.

SG100 is not met

Approach to disputes				
e	Guide post	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?	Yes	Yes	Yes
Rationale				

There is no evidence to suggest that the IOTC, EU, Seychelles and other countries with private agreements for the UoA and the wider purse seine skipjack fishery in the Indian Ocean have shown disrespect for the law and there are no reports indicating that individual jurisdictions and coastal / island states have repeatedly violated any law or regulation that has implications for the sustainability of the skipjack fishery.

• SG60 is met

There is no evidence to suggest that any of the jurisdictions or the private agreements / licenses have faced legal challenges that have implications for the sustainability of the skipjack fishery and the purse seine fishery

• SG80 is met

The range of consultation, including the improved approach in the Seychelles, within the embrace of the IOTC, indicates that there is a strong proactive approach (including the optout clause) to avoiding legal disputes. This is emphasised by the acceptance of the recommendations of the second review panel and the decision to undertake a quintennial performance review. As with the certified Maldives fishery, the fact that no legal disputes have arisen provides sufficient evidence that the management system is acting proactively to avoid legal disputes

• SG100 is met

References

MSC 2014 MSC Fisheries Certification –Requirements v2.0

Powers J. and P.A.H. Medley. 2016. 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.

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	75
Condition number (if relevant)	11-8

5.3 Conditions

5.3.1 Progress on existing conditions

Table 5.3.1.1. Progress on condition 1

Performance Indicator	2.3.3 ETP species information
Score	70
Justification	Sib Information is adequate to measure trends and support a strategy to manage impacts on ETP species More than three years of information is needed to measure trends and support a strategy to manage impacts on ETP species. and ensure that ETP bycatch levels remain at levels consistent with those for 2014-2016.
Condition (revised date according to MSC derogations)	During the re-assessment (in 2023 2024), the client must demonstrate that information is adequate to measure trends and support a strategy to manage impacts on ETP species.
Condition start	November 2018
Condition deadline	May 2024 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2021 to May 2024)
Milestones (revised dates according to MSC derogations)	Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows: Years 1-3 (November 2019, May 2022, May 2023). Echebatar must provide evidence at the 1-4 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Expected score = 70. Year 4 (2023 / 2024). During the re-assessment, Echebatar must provide evidence that the processed data available for the period 2014 – 20 is adequate to measure trends and support a strategy to manage impacts of the fishery on ETP species. Expected score = 80.
Progress on Condition (2 nd surveillance audit)	Echebatar presents an annual analysis of the observed and estimated catches of its fleet at its website. Furthermore, ESGW 2021 summarises landing composition between 2006 and 2020, and catch effort (number of sets to FADs and FSC per vessel) and observer coverage between 2014 and 2020 (see section 4.1.7 for more details). Results show that 62% of all sets (FADs and FSCs) performed by the Echebatar fleet between 2014 and 2020 (10,126 sets) were observed (6,285 observed sets). Observer coverage in 2019 remained at levels comparable to 2017 and 2018 (around 80% of all sets were observed,

both in FAD and FSC sets). This proportion was reduced to around 50% in 2020 (60% in FAD sets and 35% in FSC sets) due to the restrictions on observers boarding vessels resulting from the COVID-19 pandemic regulations applied in the Seychelles. AZTI confirmed that they were forced to close their office at the Seychelles in March 2020 due to the pandemic. This situation is still affecting in 2021, although it is expected to improve along the year.

ESWG 2021 also presents observers' data collected between 2016 and 2020 on species composition of the observed catches for sets targeting FADs (table 6 from ESWG 2021). However, estimates for total catches were not included. These estimates are presented on annual basis, but it has been recognized that data presented on an annual basis are still preliminary (that was the case for 2020). For instance, preliminary data for 2020 on FAD sets reports 1 interaction with a whale shark, while reviewed data presented in ESWG 2021 reports 0 interactions with this species on FAD sets but 3 interactions on FSC sets.

Data on catch composition and interactions with ETP species by the Echebatar fleet compiled in SWG (2021) are in accordance with previous existing information on bycatches presented in Ruiz et al (2018) for the European, and Associated flag, purse-seine tuna fishery in the Indian Ocean for the period 2008-2017.

Echebatar is implementing all best practices on collecting and reporting information on interactions adopted in the ANABAC/OPAGAC Code of Good Practices as evidenced by the fact that all Echebatar vessels have valid certificates on Section 4 of UNE195006:2016.

The ESWG is also promoting tagging studies on the silky shark (see **section 4.1.7** for more details), which is, by far, the most impacted ETP species by the certified fleet. Preliminary results were compiled in ESWG (2020) and submitted to the IOTC-WPEB in 2021 (Onandia et al 2021). Tagging will continue in 2021 and final results are expected by the end of 2021. Once completed, these studies help to increase the information available to measure trends and support a strategy to manage impacts.

Year 1

The requirement for the first annual audit is clear (i) the data available on catch is sufficient to assess the risk to ETP species and identify trends and (ii) the protocols and practices on data collection must be sufficient to give confidence that robust data will continue to be collected in the future.

Updated observers' data for 2017 and 2018 has confirmed that ETP species impacted by the UoA are sharks (mainly silky and oceanic whitetip shark), Manta and devil rays and sea turtles (see tables 4.2.5, 4.2.6, 4.2.7 and 4.2.8).

Emphasis has been placed on improving the efficiency of the observer programme and the quantity and quality of the data. Table 4.2.4 shows the increasing trend on data reported for observed sets, with observed sets raising up to 87% and 90% of the total FAD and FSC sets respectively in 2018. This had also led to better input of the observer data into the system and subsequent analysis with priority given by SFA to Echebatar data (see, in Appendix 7.2.1, confirmation by the SFA in relation to the agreement reached to increase coverage for the certified fleet). In the SFA offices in Seychelles, efforts have been increased in the collection of observer data. Additionally, the vessel skippers have been instructed to collect the information from observers for back up prior to disembarkation, while all vessel crew have been trained by AZTI in relation to the MSC certification including the protocol and importance of data collection (AZTI 2019). The latter is in the context of the ANABAC/OPAGAC Code of Good Practices implemented on the certified fleet (ANABAC/OPAGAC 2017) and also part of the ISSF commitments.

Additional information on the Seychelles purse seine fishery observer program is available at Lucas et al 2017. Data shown and discussed in section 4.2.7.1 on the UoA observed catch composition and total estimated catches in 2017 and 2018 prove that information is being collected with an adequate level of detail. Further, this information is available at the Echebatar website: <https://echebatar.com/en/echebatar-obtains-msc-certification/msc-up-to-date/2019-annual-surveillance-audit/documents/> (click here for downloading data on 2017, and here for downloading data for 2018). This proves that the client is comprised with transparency in relation to this issue.

At the time of preparing the Public Certification Report (DeAlteris et al 2018), the availability of data on observed UoA catches and total estimated UoA catches was restricted to 2014, 2015 and 2016. During the current surveillance audit, the client has provided analysed data from 2017 and 2018, while data from 2019 were still under preparation and will be audited in the following surveillance audit. However, during the site visit the client argued that data from observers are quarterly reported to avoid problems in terms of providing data on a regular basis.

As shown in sections 4.2.7.1.2 and 4.2.7.3, it is possible to start to identify trends in capture. However, given the low % of observed sets in 2014 -2016 data and potential changes in the pattern of the fishing operations since the implementation of the yellowfin tuna quota (See section 4.2.7.1), 3 more years data are required to confirm these and support a strategy.

As part of the Echebatar Strategic approach (Echebatar 2019b), there are other activities also aimed to improve information.

IPG 11 (Information is adequate for the assessment of impacts and their management) of the SIOTI action plan (SIOTI 2019) relates to 2.3.3 ETP species information.

The Year 1 and Year 2 targets for SIOTI were:

- *Y1: Scientific report on the mortality of ETP species after their release from fishing gear, and an analysis of the likely impact of such mortality on Indian Ocean populations.*

	<ul style="list-style-type: none"> Y2: Study on the impact of purse seine gear on ETP species and likely consequence for Indian Ocean populations and improved vessel-level reporting of ETP interactions. The year 2 SIOTI report found that the FIP was on target An OPAGAC FIP supported study in 2018 (IOTC-2018-WPDCS14-26) https://www.iotc.org/sites/default/files/documents/2018/11/IOTC-2018-WPDCS14-26_Rev1.pdf as also reported under IPG4, estimated levels of bycatch and ETP species interactions with purse seine gear relative to other gears in the Indian Ocean. The findings of this study indicate the ETP interactions are lower for purse seine than other gears. However, levels of post-release mortality were not directly estimated, with only existing estimates used in the analysis, which were not available for all gears. SIOTI is in discussions with WWF to support further work on this in 2019, especially given the historical bycatch data provided under IPG9 and 10 and increased levels of observer data reporting in recent years. A major focus of the work will be to improve the estimates of the earlier work, including estimation of uncertainty. The TOR is being drafted and the work will be initiated by bringing scientific expertise to a workshop later in 2019. The OPAGAC study also makes clear recommendations for improved reporting. During the site visit, Echebatar representatives confirmed that they are proposing a number of initiatives that were presented to the SIOTI meeting held in Paris on November 4 & 5. These proposed activities are: <ul style="list-style-type: none"> <input type="checkbox"/> Tagging of released sharks <input type="checkbox"/> Mapping of the differences in the proportion of silky sharks caught by set <input type="checkbox"/> Correlation of the silky shark by catch with the total catch per set
Status	<p>The client provides detailed data on observed interactions, as well as those estimated for the entire fleet. However, the current pandemic situation represents an important challenge for the implementation of the observer programs and it is key to see if the pre-pandemic levels recover. In addition, final results of the silky shark tagging studies, currently underway, are expected later this year.</p> <p>Thus, the progress on this condition was found to be AHEAD TARGET since the surveillance audit took place in May 2021 while the current deadline for the second milestone on Condition 1 is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension.</p>

Table 5.3.1.2. Progress on condition 2

Performance Indicator	2.4.1 – Habitats outcome
Score	75
Justification	<p>Sib. VME habitat status. 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.</p> <p>While there is evidence that it is unlikely that derelict FADs reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm, due to the potential impact over a number of years and lack understanding of the real nature of the issue, it cannot be concluded that this is highly unlikely. More evidence is required.</p>
Condition (revised date according to MSC derogation)	By the fourth annual surveillance audit (May 2023), the client must demonstrate that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm.
Condition start	November 2018
Condition deadline	May 2023 (due to the 6-month MSC Derogation for the pandemic, the deadline was postponed from November 2022 to May 2023).
Milestones (revised dates according to MSC derogation)	<p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic, Year 2 has now been postponed to May 2021. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar must provide evidence at the first annual surveillance that a plan has been implemented to ensure that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm. Expected score = 75.</p> <p>Year 2 (May 2021). Echebatar must provide evidence at the second annual surveillance that the plan has been fully implemented with a description of the actions undertaken. Expected score = 75.</p>

	<p>Year 3 (May 2022). Echebatar must provide evidence at the third annual surveillance that actions continue and that results of the activities are being collected and analysed. Expected score = 75.</p> <p>Year 4 (May 2023). Echebatar must provide evidence at the fourth annual surveillance to prove that FADs are highly unlikely to reduce structure and function of the coral reefs (VME) habitats with lost FADs to a point where there would be serious or irreversible harm. Expected score = 80.</p>
Progress on Condition (2 nd surveillance audit)	<p>Res 19/02 entered into force in January 2020 (superseding Res 18/08). As required by this CMM, both Seychelles and the EU-Spain, submitted to the Commission annual Management Plans for the use of FADs in 2020 and 2021, which were analyzed by the Commission (IOTC-2020-CoC17-09_Rev1 and IOTC-2021-CoC18-10). Both CPCs have been complying with the limit on number of FADs in use and instrumented buoys to be acquired annually, FAD marking, data reporting and FAD tracking. The Echebatar fleet has followed with all requirements adopted in Res 19/02. Furthermore, Echebatar also presented evidence of the following actions related to FAD management, including research on the impact of lost FADs:</p> <p>1) <u>Reducing the number of FADs beyond the limits adopted in Res 19/02.</u> For 2021 and 2022, the Echebatar FAD Management Plan adopted in 2019 sets more restrictive objectives than the IOTC regulations on this issue. Since January 2021, each certified vessel has a maximum of 275 instrumented operational buoys that may follow at any one time, and the number instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 475 (Res 19/02 limits are 300 and 500, respectively). In 2022, Echebatar has the commitment to further increase reductions up to 250 instrumented operational buoys at any one time, and 450 instrumented buoys acquired annually.</p> <p>2) <u>Verifications on the number of FADs in use and acquired instrumented buoys.</u> There are several ways of verification: (i) FAD logbooks are completed by every Echebatar fleet, compiled by AZTI and sent to the flag State to be reported to the IOTC Secretariat; (ii) The instrumented buoy suppliers send daily data on the number of active buoys per vessels and day to AZTI. AZTI compiles this information and reports to the fishing companies and the flag States (so they can later inform the IOTC Secretariat). The auditor could check during the audit the monthly verification report prepared by AZTI. AZTI also collects information on the acquired instrumented buoys to verify the implementation of Res 19/02 in this regard; (iii) Echebatar internally verifies that its more restrictive limits (see bullet above) are followed. During the audit, Echebatar representatives showed how this system is being implemented by the Company.</p> <ul style="list-style-type: none"> 3) <u>Non-entangling FADs.</u> Since 2012 Echebatar adopted the ANABAC/OPAGAC Code of Good Practices. As part of monitoring the implementation of the code, for every fishing trip AZTI assesses the percentage of FADs (either set or visited) built following non-entangling designs and materials as outlined in Annex V of Res 19/02 (or previous superseded Resolutions). An annual report is prepared and shared with the fishing companies, including Echebatar. All Echebatar vessels have valid certificates for section 4 of the Standard UNE 195006:2016 on good practices on board, which is audited by AZTI on an annual basis. This Section includes the use of non-entangling FADs. <p>4) <u>Biodegradable FADs.</u> The project known as BIOFAD 'Testing designs and identify options to mitigate impacts of drifting FADs on the ecosystem' funded by the European Maritime and Fisheries Fund (EMFF) has concluded, and the final report was presented (Zudaire et al, 2020) Echebatar has contributed to this project as detailed in the previous surveillance audit. Among other results, a tentative BIOFAD definition was provided. The assessment of the advantages and disadvantaged of different biodegradable materials and designs was also considered. Further alternative materials were also tested as potential options for future sustainable FAD constructions. The performance and behaviour of BIOFAD was assessed and compare to NEFADs. Finally, feasibility of using new biodegradable materials was assessed to recommend several optimum BIOFAD prototypes. Both the client and AZTI representatives agreed on considering this as a</p>

successful project. The Bio-ropes tested during the project are still being used by Echebatar. The fishing companies have incorporated materials and designs tested as part of the BIOFAD project. However, not all the components were developed, for instance AZTI is currently testing BIOFLOATS (Echebatar is involved in these tests).

5) FAD recovery program (FAD Watch). During 2020 Echebatar collaborated with the SFA, so the IDC could recover lost FADs (despite no MoU was signed in 2020). No formal reporting reports could be handed to Echebatar for this surveillance audit, but the IDC reported that some lost FADs were recovered before they became derelict on corals. Finally, the signature of the FADWATCH MOU for year 2 was signed on May 2021. This agreement was signed by SIOTI, OPAGAC, ICS, IDC AND SFA. The geographical scope where this project will be implemented includes 5 islands of Seychelles: Aride, Alphonse, Desroches, Silhoutte and Farquhar. The proposed activities include the following:

- a. Removal of FADs from reefs and beaches and proper storage by ICS island teams with assistance from IDC.
- b. Collection of FADs by IDC barge
- c. Proper disposal and/or recycling of FAD materials and satellite buoys on Mahé
- d. Continuous data collection by ICS describing the types of FADs and the impact caused
- e. Preparation of annual technical and financial reports by a steering committee (Annex 1) using the data collected to assess tasks completed and future needs.
- f. Fishing companies, through a service provider, to make arrangements to supply ICS with alerts (including date and time and buoy ID, service provider, position coordinates and speed) of probable FAD beaching events as and when a FAD comes within the 3 nautical miles buffer zone.
- g. During the first 3 months of the MOU, fishing companies to provide support for a service provider to assist local partners (ICS, SFA and IDC) for hardware, software and training required for implementation of FAD Watch, relating mainly to communication of FAD positions.
- h. ICS, SFA and other local partners in Seychelles to assist in providing suggestions to improve the design of eco-friendly FADs.

6) Assessing the interactions of lost FADs with corals communities in the Indian Ocean. The client has just signed an agreement with AZTI to develop a study aimed at assessing the risk posed by derelict FADs. AZTI will complete the different phases involving mapping of coral communities, analysis of FAD drift, review of available information on the structure of reefs, risk assessment to identify areas affected by FAD beaching, analysis of the potential impact of derelict FAD on coral communities in the context of other risks, identification and analysis of measure to reduce potential impacts, review of the IOTC policy on recovery of lost FADs, and design and implementation of a study to provide empirical evidence on the nature and extent of damage to corals resulting from lost FADs.

Furthermore, Echebatar vessels are included in the [ISSF PVR register](#). Compliance with sustainable-fishing practices as defined by ISSF is audited on an annual basis. According to the latest audit results, all Echebatar vessels are following ISSF's best practices on non-entangling FADs and FAD management plans.

Year 1	<p><i>A number of actions provide the evidence that a plan has been implemented with the objective of ensuring that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm.</i></p> <p><i>One key issue for Echebatar strategy was the definition of a FAD Management Plan (Echebatar 2019c). Echebatar will review the number of FADs that it operates. Among other measures, it is expected that the reduction of total FAD will reduce the number of lost FADs.</i></p> <p><i>Echebatar fully complies with IOTC FAD limits. Indeed, in 2016 the company unilaterally reduced the number of FADs it used below the number permitted by the IOTC. The number of FADs and supply vessels permitted by IOTC has reduced since the assessment.</i></p> <p><i>In relation to the Echebatar FAD Management Measures, the following actions are defined in relation to number of buoys:</i></p> <ul style="list-style-type: none"> • <i>All FADs should be deployed and tracked with instrumented buoys, which should be made operational on-board.</i> • <i>Until 31 December 2020, Echebatar will respond to IOTC Res 19/02 with a maximum number of 300 operational buoys followed per purse seiner vessel at any one time, with a maximum annual purchase per purse seiner vessel of 500 instrumented buoys.</i>
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- From 1st January 2021, Echebatar will voluntarily reduce the number of operational buoys per purse seiner vessel followed at any one time to 275 with a maximum annual purchase per purse seiner vessel of 475 instrumented buoys.

- From 1st January 2022, Echebatar will voluntarily reduce the number of operational buoys followed per purse seiner vessel at any one time to 250 with a maximum annual purchase per purse seiner vessel of 450 instrumented buoys.

Echebatar will construct FADs from bio-degradable materials to reduce the potential risk to corals. To reduce the risk of damage from lost FADs, all FADs deployed by Echebatar will be constructed from bio-degradable materials that are presently under study, for its rapid implementation. According to IOTC resolution 19/02, by year 2022 all deployed FADs will be biodegradable FADs.

Echebatar fully cooperates with the BIOFAD project SC07 "Testing designs and identify options to mitigate impacts of drifting FADs on the Ecosystem –EASME/EMFF/2017/1.3.2.6 - FWC EASME/EMFF/2016/008 Provision of SAF Beyond EU waters". This project seeks to test the use of specific biodegradable materials and designs for the construction of drifting FADs in natural environmental conditions. Options to mitigate drifting FADs impacts on the ecosystem will also be identified, and the socio-economic viability of the use of BIO FADs (i.e. non-entangling and biodegradable) in the purse seine tropical tuna fishery will be assessed. AZTI publicly declared

(https://echebatar.com/wp-content/uploads/2019/09/AZTI_letter_ECHEBASTAR_participation_BIOFAD_0209201920v2.pdf) that Echebatar vessels has contributed to the project with the activities shown in table below during the period from April 2018 to September 2019. Besides, Echebatar provides the echo-sounder buoys needed (and the data collected by them) to attach to the experimental biodegradable FADs to be deployed in the project. This contribution is an in-kind contribution of Echebatar to the project.

Progress on this BIOFAD project can be consulted at Zudaire & Murua (2018), and preliminary results have been recently presented (August 22, 2019) to IOTC in Zudaire et al (2019).

FAD Traceability

A number of activities are relevant to establish a system to account for lost FADs and reduce the uncertainty about their actual number:

- Echebatar only deploys FADs with satellite tracking buoys.
- Echebatar is working with AZTI so that by early 2020, all 2019 FAD purchases, activation, status and recovery will be fully documented and available for inspection.
- Echebatar has contracted AZTI to develop a data base on the FADs purchased and activated by the company to avoid losses (see Echebatar 2019c, Section 11).

As part of the ANABAC/OPAGAC Code of Good Practices (ANABAC/OPAGAC 2017), AZTI is responsible for implementing, compiling and analysing data from the FAD logbook to support a FAD management system for the ANABAC/OPAGAC vessels. AZTI is also responsible to verify the implementation of the good practices on FADs adopted by these vessels. AZTI regularly presents the results of this activities and verification at the Steering Committee for the Code of Conduct, see AZTI (2019) for a detailed account of the meetings held since 2013.

- The SIOTI action plan for Years 3 and 4 states:

Y3: All FADs operated by FIP participants are tracked, losses are registered and best practical efforts made for their location and recovery.

Y4: A review of the FAD reporting system indicates that the loss of FADs is minimised and they are highly unlikely to impact on VMEs; FAD management study results are published

FAD recovery

Echebatar will continue to work with other tuna catching companies and stakeholders in "FAD Watch programme" and seek to work with local stakeholders in other countries to replicate the experience. The FAD Watch project is a collaborative initiative to minimize the impact of FADs in coastal ecosystems. The FAD-Watch project is a first multi-sectorial initiative developed to prevent and mitigate FAD beaching across islands in Seychelles, in which the coastal recovery is applied as a mitigation measure. It is the result of a collaborative work among the Spanish Tuna Purse Seiner fishing representatives (OPAGAC), Island Conservation Society (ICS), Islands Development Company (IDC) and Seychelles Fishing Authority (SFA). The FAD detection system was setup by OPAGAC for 6 buffer areas (Alphonse, Farquhar, Desroches, Poivre, Aride and Silhouette islands), which make possible alerting ICS when FADs crossed buffer areas within 5 and 3 nautical miles of any of these islands. For each intercepted FAD, ICS collected information about the location, habitat type, purse seiner vessel, FAD design, entangled fauna, and fate (removed or not; & disposal method). In order to evaluate the beaching rate and entangling potential of FADs of the target fleet, information was complemented both by buoy tracked data and by data collected on the frame of the voluntary agreement for the application of good practices. More details can be found at (Zudaire et al 2018). In November 2019, a MoA was signed to include the FAD WATCH project as par of the SIOTI action plan (click here to download the MoA: <https://echebatar.com/wp-content/uploads/2019/11/SIOTI-FAD-WATCH-MOA-FINAL-DOCUMENT.pdf>). This MoA was signed by the SFA, ICS, IDC and SIOTI.

- The SIOTI (2019) reports that the FAD Watch programme that locates and intercepts FADs that may become derelict in Seychelles waters was expanded to 42 vessels amongst 5 islands.

Other Points

- Since 2016, Echebatar tuna fishing fleet has adopted (<https://www.echebatar.com/assets/pesca/NON-ENTANGLING-FADS.pdf>) the use of the new FAD designs described in the ISSF Guide for Non-Entangling FADs in an effort to reduce shark and/or turtle. More info on the ISSF non-entangling and biodegradable FADs (ISSF, 2019)

- Echebatar has contracted AZTI to complete research programmes to determine deployment areas that are highly likely to result in stranding of derelict FADs on coral reefs.

To conclude, Echebatar is working on: 1) Reducing the number of FADs (the Company has set more restrictive objectives than the IOTC regulations on this issue); 2) FAD traceability and reduce the risk of FADs damaging corals (BIOFAD, account for lost FADs and reduce the uncertainty about their actual number); 3) FAD recovery program (FAD Watch). All these actions outlined in the Echebatar Strategy & Operational Plan for a Sustainable purse seine Tuna Fishery in the Indian Ocean 2019-2013 (Echebatar 2019a) and detailed in the FAD Management Plan of the Company (Echebatar 2019c). The client presented evidence of the implementation of different actions considered in the FAD Management Plan, but this is still a work in progress.

Status	Based on the information presented above, the team found that the client has presented evidence that all activities included in the plan are in place. Thus, the progress towards closing this condition was found to be ON TARGET .
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Table 5.3.1.3. Progress on condition 3

Performance Indicator	2.4.2 Habitats management strategy
Score	75
Justification	<p>Sla. Management strategy in place. There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome SG80: 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.</p> <p>The local impacts of derelict FADs on coral reefs may be significant, especially as a FAD may have a negative effects over an extended period. The measures to-date reduce the potential number of interactions. However, as yet biodegradable FADs have not been introduced into the fishery although development work continues. Until this is the case, it cannot be considered that an important element of a partial strategy are in place as the UoA has not implemented the precautionary measure (MSC FCR SA 3.14.2.2).</p>
Condition (revised date according to MSC derogations)	By the fourth annual surveillance audit (May 2023), the client must provide evidence that a partial strategy in place that is expected to result that it will be highly unlikely that derelict FADs could reduce structure and function of the coral reefs to a point where there would be serious or irreversible harm.
Condition start	November 2018
Condition deadline	May 2023 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2021 to May 2023).
Milestones (revised dates according to MSC derogations)	<p>These are linked to Condition 2.</p> <p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar must provide evidence at the first annual surveillance that a partial strategy has been defined and implemented to ensure that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm. Expected score = 75.</p> <p>Year 2 (May 2022). Echebatar must provide evidence at the third annual surveillance that the partial strategy has been fully implemented with a description of the actions undertaken. Expected score = 75.</p> <p>Year 3 (May 2023). Echebatar must provide evidence at the fourth annual surveillance that a partial strategy is in place. Expected score = 80.</p>
Progress on Condition (2 nd surveillance audit)	As detailed in the progress on Condition 2, a new procedure on a FAD management plan (IOTC Resolution 19/02) entered into force in January 2020 (see section 4.1.3 for more details). As required by this CMM, both Seychelles and the EU-Spain, submitted to the Commission annual Management Plans for the use of FADs in 2020 and 2021, which were analyzed by the Commission (IOTC-2020-CoC17-09_Rev1 and IOTC-2021-CoC18-10). Both CPCs have been complying with the limit on number of FADs in use and instrumented buoys to be acquired annually, FAD marking, data reporting and FAD tracking. Furthermore, as detailed in the progress on Condition 2, the client ensures that both its FAD tracking system and the use of non-entangling FADs are being verified externally (by AZTI). Echebatar actively collaborates with different initiatives and projects aimed at

	<p>transitioning to the use of biodegradable FADs, and the certified fleet has adopted some of the biodegradable tested materials. The client keeps collaborating with the FADWATCH project. This project aims to prevent and mitigate the beaching and entanglement of FADs in coral reefs in 5 islands of the Seychelles. Finally, a new agreement has been signed with AZTI to assess the risk posed by derelict FADs on coral communities in the Indian Ocean.</p> <p>Furthermore, Echebatar vessels are included in the ISSF PVR register. Compliance with sustainable-fishing practices as defined by ISSF is audited on an annual basis. According to the latest audit results, all Echebatar vessels are following ISSF’s best practices on non-entangling FADs and FAD management plans.</p> <p>Finally, recent MSC-reports for the overlapping purse seine tuna fisheries has just been published and both fisheries score PI2.4.2(a) at 80 (Sieben et al 2021 for the CFTO fishery and Akroyd et al 2021 for the AGAC fishery). The AGAC fleet operating in the Indian Ocean is comprised by vessels flying the Spanish and Seychelles flags, as for the Echebatar fleet, so they are subject to the same regulations. Furthermore, these vessels are also implementing the ANABAC/OPAGAC Code of Good Practices and they are also participating in the FADWATCH project. In the case of the CFTO, all vessels are EU flagged (France and Italy), so they are subject to the same regulations as the Echebatar Spanish flagged vessels. The CFTO fleet is also participating in the FADWATCH project. So, the measures and actions taken for all these fleets in relation to reduce the impact of FADs on VMEs are practically the same.</p>
	<p>Year 1</p> <p><i>As detailed in Progress on Condition 2, Echebatar is working on:</i> 1) Reducing the number of FADs (the Company has set more restrictive objectives than the IOTC regulations on this issue); 2) FAD traceability and reduce the risk of FADs damaging corals (BIOFAD, account for lost FADs and reduce the uncertainty about their actual number); 3) FAD recovery program (FAD Watch). <i>Further, all these actions were outlined in the Echebatar Strategy & Operational Plan for a Sustainable purse seine Tuna Fishery in the Indian Ocean 2019-2013 (Echebatar 2019a) and detailed in the FAD Management Plan of the Company (Echebatar 2019c). The client presented evidence of the implementation of different actions considered in the FAD Management Plan, but this is still a work in progress.</i></p>
<p>Status</p>	<p>The team considers that the measures and actions described above constitute a partial strategy, and that this partial strategy is expected to achieve the Habitat Outcome 80 level of performance for VMEs. Thus, the condition is ahead target and CLOSED, so PI 2.4.2(a) shall be re-scored (see re-scoring table in section 5.2)</p>

Table 5.3.1.4. Progress on condition 4

<p>Performance Indicator</p>	<p>2.4.3 Habitats information</p>
<p>Score</p>	<p>75</p>
<p>Justification</p>	<p>Slb. Information adequacy for assessment of impacts. Information is adequate to allow for identification of the main impacts of derelict FADs on coral reefs, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>While there is good information on the spatial extent of interaction between derelict FADs and coral reefs in the Seychelles, similar data is not available for other countries. A precautionary approach would suggest that the potential for impacts to occur should be further investigated. There is limited information on the spatial extent, timing and location of FAD interactions with coral reefs, and this is not adequate to understand the nature of the impacts of the gear on coral habitat.</p>
<p>Condition (revised date according to MSC derogations)</p>	<p>During the re-assessment (in 2023 2024), the client must provide evidence that information is adequate to allow for identification of the main impacts of derelict FADs on coral reefs, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p>
<p>Condition start</p>	<p>November 2018</p>

<p>Condition deadline</p>	<p>May 2024 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2022 to May 2024).</p>
<p>Milestones (revised dates according to MSC derogations)</p>	<p>These are linked to Condition 2.</p> <p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar must provide evidence at the first annual surveillance that the partial strategy includes the approach to improving the information base. Expected score = 75.</p> <p>Year 2-3 (May 2022-2023). Echebatar must provide evidence at the third and fourth annual surveillance that information is being collected. Expected score = 75.</p> <p>Year 4 (2023 / 2024). During the re-assessment, Echebatar must provide evidence that the collected information has been analysed with the identification of the main impacts of derelict FADs on coral reefs, and an understanding of the spatial extent and timing of the interactions. Expected score = 80.</p>
<p>Progress on Condition (2nd surveillance audit)</p>	<p>As detailed in the progress on Condition 2, the client is following the requirements adopted in Res 19/02 on FAD data collection, reporting and marking. Furthermore, both the FAD tracking system in place and the use of non-entangling FADs are being verified externally (by AZTI). The client actively collaborates with different initiatives and projects aimed at transitioning to the use of biodegradable FADs, and the certified fleet has adopted some of the biodegradable tested materials. The client keeps collaborating with the FADWATCH project. This project aims to prevent and mitigate the beaching and entanglement of FADs in coral reefs in 5 islands of the Seychelles. Finally, a new agreement has been signed with AZTI to assess the risk posed by derelict FADs on coral communities in the Indian Ocean.</p> <p><i>The following activities related to Condition 2 and Condition 3 respond to Condition 4.</i></p> <p>FAD Traceability A number of activities are relevant to establish a system to account for lost FADs and reduce the uncertainty about their actual number:</p> <ul style="list-style-type: none"> • Echebatar only deploys FADs with satellite tracking buoys. • Echebatar is working with AZTI so that by early 2020, all 2019 FAD purchases, activation, status and recovery will be fully documented and available for inspection. • Echebatar has contracted AZTI to develop a data base on the FADs purchased and activated by the company to avoid losses (see Echebatar 2019c, Section 11). • As part of the ANABAC/OPAGAC Code of Good Practices (ANABAC/OPAGAC 2017), AZTI is responsible for implementing, compiling and analysing data from the FAD logbook to support a FAD management system for the ANABAC/OPAGAC vessels. AZTI is also responsible to verify the implementation of the good practices on FADs adopted by these vessels. AZTI regularly presents the results of this activities and verification at the Steering Committee for the Code of Conduct, see AZTI (2019) for a detailed account of the meetings held since 2013. • The SIOTI action plan for Years 3 and 4 states: Y3: All FADs operated by FIP participants are tracked, losses are registered and best practical efforts made for their location and recovery. Y4: A review of the FAD reporting system indicates that the loss of FADs is minimised and they are highly unlikely to impact on VMEs; FAD management study results are published <p>FAD recovery</p> <ul style="list-style-type: none"> • Echebatar will continue to work with other tuna catching companies and stakeholders in "FAD Watch programme" and seek to work with local stakeholders in other countries to replicate the experience. The FAD Watch project is a collaborative initiative to minimize the impact of FADs in coastal ecosystems. The FAD-Watch project is a first multi-sectorial initiative developed to prevent and mitigate FAD beaching across islands in Seychelles, in which the coastal recovery is applied as a mitigation measure. It is the result of a collaborative work among the Spanish Tuna Purse Seiner fishing representatives (OPAGAC), Island Conservation Society (ICS), Islands Development Company (IDC) and Seychelles Fishing Authority (SFA). The FAD detection system was setup by OPAGAC for 6 buffer areas (Alphonse, Farquhar, Desroches, Poivre, Aride and Silhouette islands), which make possible alerting ICS when FADs crossed buffer areas within 5 and 3 nautical miles of any of these islands. For each intercepted FAD, ICS collected information about the location, habitat type, purse seiner vessel, FAD design, entangled fauna, and fate (removed or not; & disposal method). In order to evaluate the beaching rate and entangling potential of FADs of the target fleet, information was complemented both by buoy tracked data and by data collected on the frame of the voluntary agreement for the application of good practices. More details can be found at (Zudaire et al 2018). In November 2019, a MoA was signed to include the FAD WATCH project as par of the SIOTI action plan (click here to download the MoA: https://echebatar.com/wp-content/uploads/2019/11/SIOTI-FAD-WATCH-MOA-FINAL-DOCUMENT.pdf). This MoA was signed by the SFA, ICS, IDC and SIOTI. <p>Year 1</p>

	<ul style="list-style-type: none"> The SIOTI (2019) reports that the FAD Watch programme that locates and intercepts FADs that may become derelict in Seychelles waters was expanded to 42 vessels amongst 5 islands. Further, Echebatar has contracted AZTI to complete research programmes to determine deployment areas that are highly likely to result in stranding of derelict FADs on coral reefs.
Status	Based on the information presented above, the team found that the client has presented evidence that relevant information to assess the main impacts of derelict FADs on coral reefs is being collected. Thus, the progress on this condition was found to be AHEAD TARGET since the surveillance audit took place in May 2021 while the current deadline for the second milestone on Condition 4 is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension.

Table 5.3.1.5. Progress on condition 5

Performance Indicator	2.5.3 Ecosystem information
Score	75
Justification	<p>Slb. Investigation of UoA impacts. Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail.</p> <p>Sld. Information relevance. 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.</p> <p>The effects of FADs used in the UoA/UoC on the behaviour, migration patterns and feeding of tuna and other key predators (e.g. silky shark and oceanic whitetip shark) is a subject of concern. Dagorn et al (2013) conclude that there is no unequivocal empirical evidence that FADs per se represent an 'ecological trap' that inherently disrupts the ecosystem, although further research should focus on this issue.</p>
Condition (revised date according to MSC derogations)	<p>Slb. During the re-assessment (2023 / 2024), the client must provide evidence that the main impacts of the FADs used in the UoA/UoC on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail.</p> <p>Sld. During the re-assessment (2023 / 2024), the client must provide evidence that there is adequate information on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.</p>
Condition start	November 2018
Condition deadline	May 2024 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2022 to May 2024).
Milestones (revised dates according to MSC derogations)	<p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar must provide evidence at the first annual surveillance that the options to investigate the potential impact of the FADs used in the UoA/UoC on the ecosystem have been identified and the preferred option for investigation has been implemented. Expected score = 75.</p> <p>Year 2 (May 2022). Echebatar must provide evidence at the third annual surveillance that the preferred option for investigation continues to be implemented Expected score = 75.</p> <p>Year 3 (May 2023). Echebatar must provide evidence at the fourth annual surveillance of the preliminary results from the preferred option for investigation. Expected score = 75.</p> <p>Year 4 (2023 / 2024). During the re-assessment, Echebatar must provide evidence that main impacts of the FADs used in the UoA/UoC on key ecosystem elements can be inferred, and some have been investigated in detail. Expected score = 80.</p>

A new analysis of the interaction of the purse seine tuna fishery in the Indian Ocean with the ecosystem as defined by the MSC standard for sustainable fisheries (Juan-Jordá, 2021). This study covers different topics, including:

- (i) A comprehensive review of MSC PI 2.5 (fishery impacts on the marine ecosystems),
- (j) A description of the key elements of marine ecosystems and the ecological impacts from purse seine fishing,
- (k) Examines scoring rationales for PI 2.5 of 13 MSC assessments of purse seine tuna fisheries.
- (l) Past and on-going research across the different oceans to provide evidence on the potential ecosystem impacts from purse seine fisheries on the structure and function of marine ecosystems
- (m) Assessment of whether there is adequate information on the impacts of the Echebstar fishery on individual key ecosystem elements to allow some of the main consequences to be inferred.

In relation to topic (l- past and on-going research...), Juan-Jorda (2021) considers the following:

- *The ecological impacts of fishery removals of top predators via the alteration of trophic relationships on the structure and function of the marine ecosystem have been relatively well investigated and understood in the EPO and WPO, while the opposite is the case for the AO and IO.*
- *The ecological impacts of fishery removals of species (either top predators or other species in the foodweb) via the truncation of size composition or via the alteration of diversity on the structure and function of marine ecosystem have not been investigated in detail and remain poorly understood in all the oceans, with few exceptions.*
- *The effect of large scale climatic and oceanographic physical forcing, including climate change, on ecosystem productivity and the dynamics of tunas have been relatively well investigated and some aspects are well understood, yet it remains to connect this pool of knowledge with operational fisheries management.*
- *The ecological impact of FAD use via selective fishing on the genetic, biology and ecology of the targeted tropical tunas has been increasingly studied, yet there remains major gaps in knowledge.*
- *There has been considerable research (experimental tagging studies, and studies using fisher's echosounder buoy data) examining the effects of FADs (mostly presence of dFADs) on the behaviour, movement patterns of tunas and their consequences on the biology of the species (e.g., growth). More studies are required, however, to understand better the effects of increasing number of dFADs and FAD densities on the behaviour, movement patterns of tunas.*
- *Comparatively the ecological impact of FAD use on the genetic, biology and ecology of the non-targeted tunas (e.g. sharks) remains poorly known, yet it is an expanding field of research.*

Based on the conclusions presented above the author advises SIOTI on different options to support basic ecosystem research to better understand and quantify the different ecological impacts of purse seine fisheries on the structure and function of marine ecosystems and inform the implementation of the Ecological Approach to Fisheries Management (EAFM).

In relation to topic (m- assessment of whether there is adequate information on the impacts of the Echebstar fishery...), Juan -Jorda (2021) considers the following:

“The report highlights how the lack of solid research and ecosystem modelling (trophic-based or size-based ecosystem models) for the Indian Ocean (IO) prevents detailed investigation of the impact of biomass removals of all fisheries combined (or the relative removals by Echebstar) on the ecosystem structure and function, and to assess if these effects are causing serious or irreversible harm in the marine ecosystem in the IO.

Progress on Condition
(2nd surveillance audit)

Accordingly, informed understanding of the pelagic food web dynamics and the impact of fishing must be derived from the Pacific Ocean (PO) where most of the ecosystem modelling in the context of tuna fisheries has been carried out.

The lack of specific ecosystem indicators and ecosystem models in the IO makes it difficult to simulate and infer the main consequences of the impacts of the Echebatar fishery on the ecosystem. This means there is no hard evidence that it is highly unlikely to disrupt the key elements of the ecosystem.

Considerable research has been completed to understand how natural environmental variability and climate change affect the dynamics of top predatory species such as tunas in the IO. More research and ecosystem modelling are needed however to evaluate different environmental and climate scenarios, in combination with different fishing scenarios, and their effect on the dynamics of top predatory species. This would allow the main consequences of environmental changes and fishing on the ecosystem to be inferred.

The report also highlights there have been an increasing number of experimental studies investigating the effects of dFADs on pelagic species behaviour and movement patterns in the PO and IO. There remains limited understanding on (i) the influence of dFADs on the residency of tunas and other non-tuna species, and (ii) how the increased number of dFADs may affect the school sizes of tunas and other species.

Accordingly, there remain conflicting interpretations and results on the behavioural impacts of dFADs (and the different densities of dFADs) on tunas and related species and potential consequences on their biology. This lack of understanding makes it difficult to infer all the main consequences of the impact of dFAD use on tuna species, and even more so on non-tuna species such as sharks for which research is even more limited.

In perspective, as the Echebatar fishery only accounts for a small proportion (about 12 %) of the dFADs deployed in the IO, it may be inferred that it is highly unlikely to disrupt the behaviour, movements patterns and condition of pelagic species to a point where there would be a serious irreversible hard. Yet there is no hard evidence of this”.

The study considers 3 potential ecosystem impacts (actually 4, but the ecological impact of fishing via the introduction of microplastic pollution in the food web was not considered for the assessment):

- The ecological impacts of fishery removals of top predators on the structure and function of the marine ecosystems
- The effect of natural environmental variability (including climate change) on ecosystem productivity and tuna dynamics.
- The ecological impacts of FAD use on the genetic, biology and ecology of species (tunas and non-tunas).

The table below presents a summary of available information and research on ecosystem impacts (Juan-Jordá, 2021):

Type of ecosystem impacts relevant to tropical purse seine fisheries	Ecosystem impacts with relevant information and research	
	IO	Other equatorial ocean
Ecological impacts of fishery removals of top predators via the alteration of trophic relationships on the structure & function of the marine ecosystem	Not investigated in detail and poorly understood	EPO & WPO: Relatively well investigated and understood. Atlantic: Not investigated in detail and understood
Ecological impacts of fishery removals of species (top predators / other species in the foodweb) via the truncation of size composition on the structure & function of marine ecosystem.		North Pacific Ocean: Some size-based models have been developed and investigated in some detail. EPO, WPO & Atlantic Ocean: Not investigated in detail and poorly understood.
Ecological impacts of fishery removals of species (top predators / other species in the foodweb) via the alteration of diversity on the structure and function of marine ecosystem.		EPO & WPO: Some aspects investigated Atlantic: Not investigated in detail and understood
Effect of large scale climatic and oceanographic physical forcing (natural environmental variability) on ecosystem productivity and tuna dynamics	Relatively well investigated with some aspects understood.	WPO & EPO: Relatively well investigated and understood.
Effects of climate change on ecosystem productivity & tuna dynamics		
Ecological impact of FAD use via selective fishing on the genetic, biology & ecology of tunas	<ul style="list-style-type: none"> • Some elements are well investigated and relatively well understood. • There has been considerable research (experimental tagging studies using fisher's echosounder buoy data) examining the effects of dFAD presence of dFADs) on the behaviour, movement patterns of tunas and consequences on the biology of the species (e.g. growth). • More studies are required to understand better the effects of increased dFADs and FAD densities on the behaviour, movement patterns of tunas 	
Ecological impact of FAD use via selective fishing on the genetic, biology & ecology of non-tunas	<ul style="list-style-type: none"> • Research (experimental tagging studies, and studies using fisher's echosounder buoy data) examining the effects of dFADs (mostly presence of dFADs) on the behaviour, movement patterns of non-tuna species, especially ETP sharks, and their consequences on the biology of the species (e.g. growth) relatively scarce. • More studies are required to understand better the effects of increased dFADs and FAD densities on the behaviour, movement patterns of non-tunas 	
Ecological impact of fishing via the introduction of microplastic pollution into the food web	Not assessed.	

Finally, Juan-Jordá (2021) also includes a shadow scoring for PI 2.5.1 and PI 2.5.3 for the Echebatar fishery, considering the 3 potential ecosystem impacts detailed above as scoring elements. Despite the study acknowledges information gaps in relation to research on ecosystem impacts (see paragraphs quoted above and table shown above), it also presents rationales on how Echebatar fishery could score 80 for PI 2.5.3 (and PI 2.5.1).

On the other hand, scores on PI 2.5 for the three overlapping purse seine tuna fisheries are very similar and they all have a condition set on PI2.5.3. However, when reviewing scoring rationales for the three purse seine overlapping fisheries (Echebatar, AGAC and CFTO) it becomes clear that different key ecosystem elements were identified by the different teams. The CFTO fishery has just finished its assessment in June this year, while the PCDR for the AGAC fishery has also been published this June. A harmonization process on how to assess PI 2.5 should be triggered once AGAC finishes its process, since it is not considered advisable to restructure the evaluation of the PI 2.5 at this stage of the assessment process. This process shall take into consideration the study performed by Juan-Jordá (2021), including the 9 potential ecosystem impacts that may be considered under PI 2.5 and the four-step guideline to facilitate PI2.5 assessments of tuna purse seine fisheries.

Furthermore, Juan-Jordá (2021) also identifies five potential interactions and cross cutting issues between P2 PIs. Therefore, it could be advisable to engage with the MSC to clarify better the MSC Fishery Standard and Guidance in relation to what type of fishery impacts need to be reviewed under the component of Habitats (P2.4) and the component of

	<p>Ecosystem (P2.5) in the context of tuna fisheries, as already recommended in Juan-Jordá (2019).</p> <p><i>The Year 1 milestone is explicit that "(...) options to investigate the potential impact of FADs...have been identified and...implemented." It is understood that the scope for independent action by Echebatar is limited and it has therefore chosen to work with SIOTI to investigate and progress this area. The SIOTI FIP Action Plan review (Year 2) considered options to investigate the potential impact of FADs on the ecosystem and developed a preferred option to proceed (SIOTI 2019). Specifically, the production of a working paper on Ecosystem Approach to Fisheries Management (EAFM) to the IOTC WP on Ecosystems and Bycatch (WPEB), to include consideration of FADs and potential impacts on the ecosystem and means of mitigation, management and investigation. The working paper (Juan-Jordá, 2019) was commissioned in April, 2019, and was presented in October, 2019 (see: https://echebatar.com/wp-content/uploads/2019/11/Support-for-the-development-of-an-ecosystem-approach-to-fisheries-management-for-Indian-Ocean-fisheries.pdf). The working paper identifies key information gaps in enabling an ecosystem approach to tuna fishery management in the Indian Ocean and includes a review of the key risk areas associated potentially with FAD use. According to Juan-Jordá (2019), the ecological impacts of fisheries in marine ecosystems can be broadly categorized in 4 types of impacts:</i></p> <ol style="list-style-type: none"> (1) Impacts on the individual targeted species (2) Impacts on the individual non-targeted species including ETP species (3) Impacts on habitats of ecological significance (4) Impact on the structure and function of marine ecosystems <p><i>This condition was considered at length during the site visit and the FIP and commissioned working paper were the subject of detailed review. The FIP mentions "ecological trap" only in relation to PI2.4, not PI2.5 to which this condition applies. With respect to PI 2.5 and potential impacts on the structure and function of ecosystems, the FIP refers explicitly to the commissioned working paper under PI2.5. The paper outlines the key areas of impact by purse seine fisheries, effectively as relate to all MSC P2 PISG. It describes in detail many PI2.4 matters (e.g., use of biodegradable FADs and mitigation of FAD beaching on coral reefs). The paper notes (p29) that testing whether FADs affect the behaviour and large-scale movements of tunas requires data that are not currently available. It considers what types of data and research would be needed to progress understanding but particularly management. It is notable that amongst any detailed considerations of science and management, the paper also recommends (p49) that "MSC Fishery Standard P2.4 Habitats and P2.4 Ecosystems need to be clarified for the context of tuna fisheries - Engage with the MSC to clarify better the MSC Fishery Standard and Guidance in relation to what type of fishery impacts need to be reviewed under the component of Habitats (P2.4) and the component of Ecosystem (P2.5) in the context of tuna fisheries."</i></p>
<p>Status</p>	<p>The team considers that Juan-Jordá (2021) represents an important contribution in different issues related to PI 2.5 (i.e., review of potential ecosystem impacts to be considered, potential interactions and cross cutting issues between P2 PIs, review of past and on-going ecosystem research, assessment of available information to score these PIs...). Based on the information presented above, the team considers that progress on this condition is AHEAD TARGET since the surveillance audit took place in May 2021 while the current deadline for the second milestone on Condition 5 is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension. The team also recommends that a harmonization process on how to assess PI2.5 for purse seine tuna fisheries is undertaken as soon as the AGAC fishery assessment is completed, and also believes that the engagement of the MSC in this process would be advisable.</p>

Table 5.3.1.6. Progress on condition 6

<p>Performance Indicator</p>	<p>3.1.2 – Consultation, roles and responsibilities</p>
<p>Score</p>	<p>75</p>
<p>Justification</p>	<p>Sib.- Consultation processes. 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.</p> <p>Evidence (Welch & Kerrigan (2015), Standing (2016), stakeholder interviews – SFBOA, SFA, MAF & Blue Economy) indicates the limited input of local stakeholders in the Seychelles decision making process. Where local stakeholders have expressed views, it is not clear how these have been taken into account. At the site visit, It was reported that meetings between the Minister and stakeholders are not minuted.</p> <p>The lack of a mechanism to indicate if and how stakeholder information is used in the management system impacts transparency on how Seychelles fishery managers obtain and consider information and local knowledge.</p>
<p>Condition (revised date according to MSC derogations)</p>	<p>By the fourth annual surveillance audit, the management system in the Seychelles includes consultation processes that regularly seek and accept relevant information, including local</p>

	<p>knowledge. The management system demonstrates consideration of the information obtained.</p>
Condition start	November 2018
Condition deadline	May 2023 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2021 to May 2023).
Milestones (revised dates according to MSC derogations)	<p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar will provide evidence to the audit team in the first annual surveillance audit that the options to improve the consultation process in the management of the Seychelles tuna fisheries have been discussed. Expected score = 75</p> <p>Year 2 (May 2022). Echebatar will provide evidence to the audit team in the third annual surveillance audit that the consultation process for tuna management in the Seychelles has met regularly with stakeholders and a formal record of those meetings as made available to all stakeholders is provided to the team. Expected score = 75.</p> <p>Year 3 (May 2023). Echebatar will provide evidence to the audit team in the fourth annual surveillance audit that the management system for tuna management in the Seychelles has demonstrated consideration of the information received from the consultation process. Expected score = 80</p>
Progress on Condition (2 nd surveillance audit)	<p>It is expected that a National Tuna Management and Development Plan starts in July/August 2021 (see below progress on Condition 7). As confirmed by the SFA representative interviewed during the audit, this consultancy will involve stakeholder consultations, in accordance with the Seychelles Fisheries Sector Policy and Strategy 2019 and the Fisheries Comprehensive Plan.</p> <p>The representatives of the Ministry of Fisheries and Blue Economy and the SFA confirmed that for most of the important meeting (i.e., discussions on the quota allocation, preparation of the IOTC meetings...) the Ministry organizes multi-stakeholder meetings. As an example, the representative of the Ministry of Fisheries shared with the team the emails exchanged with part of the fishing industry (Spanish industrial purse seine owners) for preparing the Special Session of the IOTC held on March 8-11, 2021. The representative interviewed confirmed may different stakeholders are involved (e.g., canning factories, fishing sector...). According to the information shared during the interview, so far the Ministry had organized 2 meeting this year: one prior to the Special Session of the IOTC and another for the submission of proposals. Besides, one to one meetings under request are organized with specific stakeholders. According to the information shared, the Ministry circulates the documents to be discussed in advance, and no decisions are taken during the meetings. In case of disagreement, the Ministry analyses the situation and takes a decision, but there is no formal procedure for reporting decisions. The minutes of these meetings are not public.</p> <p>It is noticeable that in March 2021, the Seychelles has become the first country to submit its report to the Fisheries Transparency Initiative (FiTI). The FiTI is a global partnership that seeks to increase transparency and participation for a more sustainable management of marine fisheries. The diversity of different stakeholders (ensuring equal participation from government, companies and civil society) is a central feature of how the FiTI works, for national implementations as well as international governance. The FiTI is a voluntary initiative; however, once a country has decided to participate, mandatory requirements must be followed. The Seychelles first report to the FiTI is available online (click here to download it). The report was prepared by an ad-hoc multi-stakeholder group (the Seychelles National Multi-stakeholder Group, this groups was already mentioned in the previous surveillance report). The FiTI report highlights several opportunities for improvement (see section 4.1.3 for more details). The Seychelles National multi-</p>

	<p>stakeholder Group has determined 34 recommendations on how to further strengthen fisheries transparency in the country.</p> <p>The implementation of the recommendations included in the first FiTI report which are applicable to the certified fishery, together with the implementation of the activities aimed to achieve the goals established at the Seychelles Fisheries Sector Policy and Strategy 2019 and the Fisheries Comprehensive Plan will be assessed in the following surveillance audits, including the consultation process to be undertaken as part of the development of the National Tuna Management and Development Plan.</p>
<p>Year 1</p>	<p><i>The Government of Seychelles has recently published the 'Seychelles Fisheries Sector Policy And Strategy 2019' (MFAg 2019a). This document states that: "The development of this Policy is a result of stakeholder consultations, literature review and internal departmental consultations. (...) The Policy was validated through a national stakeholder workshop which took place on the 4th and 5th March 2019 and submitted to the Cabinet of Ministers for Government approval".</i></p> <p><i>"The participatory approach to management of fisheries" is among the different challenges identified by the Policy. This challenge is defined as follows: "Despite a growth in the number of fishery-related associations, there is a lack of collective bargaining, coordination and cohesion to effect change that will directly benefit fishers, improve sustainability and business growth".</i></p> <p><i>The overall goal of the Policy is: "To provide effective, efficient, transparent and accountable service delivery through a participatory approach to ensure long-term sustainable fisheries and aquaculture management and conservation so that the sector continues to play a key role in the sustainable development of the country and the socio-economic well-being of the Seychellois nation".</i></p> <p><i>Also, some of the objectives set are directly related to participatory and consultation processes:</i></p> <ul style="list-style-type: none"> - <i>Manage fisheries resources through ecosystem-based approaches and ensure that policies, legislations and infrastructure development are aligned towards achieving sustainability, taking into account climate change, international commitments and global developments;</i> - <i>Foster optimum utilisation of fisheries and aquaculture resources to ensure ecological and socioeconomic sustainability in resource-use and domestic developments, while recognising traditional norms;</i> - <i>Promote the principles of visibility, transparency, participation and inclusivity in decision-making processes which will enable the industry to develop to its full potential within a supportive regulatory framework</i> <p><i>This sector Policy is structured around 10 Policy objectives (PO), each of which is underpinned by more specific strategic actions and policy directives.</i></p> <p><i>Two of the defined elements of Policy 1 (Good governance and institutional strengthening) are:</i></p> <ul style="list-style-type: none"> • <i>Engage with formal and informal resource groups at the government and community level to foster stakeholder engagement in the policy making and implementation;</i> • <i>Consult with non-governmental organisations and the fishing industry on new management measures and developments and support the development of associations, cooperatives and federations;</i> <p><i>Three of the defined elements of Policy 2 (Sustainable management of fisheries and climate resilience) are:</i></p> <ul style="list-style-type: none"> • <i>Encourage fisheries sector stakeholders to better represent themselves and participate meaningfully in co-management through stronger associations, cooperatives and federation into an apex national organization;</i> • <i>Mainstream effective fisheries licensing and limited-entry within management plans in a progressive manner with close consultation and agreement of the relevant stakeholders;</i> • <i>Establish mechanisms that encourage fisheries statisticians, researchers, and managers to publicly engage with fishers and other stakeholders to explain their findings and advice.</i> <p><i>Arising from the strategy, Seychelles has prepared a 'Fisheries Comprehensive Plan' (MFAg, 2019b)</i></p> <p><i>One of the four guiding principles for the plan is:</i></p> <ul style="list-style-type: none"> • <i>A shared partnership approach that will create smart partnerships at all levels (national and organisational), where Government still provides policy leadership. This partnership should encompass individuals, groups, communities, civil society, the private sector, local and central Government, as part of an overall participatory approach;</i> <p><i>The Plan is a detailed presentation of many actions that are programmed to take place in order to meet the MFAg (2019a). However, the only specific reference to stakeholders is under 8. Fishery Association.</i></p> <ul style="list-style-type: none"> • <i>Encourage the establishment a national structure to increase unity and cooperation in the fisheries sector among the associations that will play an active role in advancing the interests of the industry at national and international level. The structure should also aim to preserve and promote the collective interests of the different associations in Seychelles.</i> <p><i>Following conformation of the Plan the next step to be taken is the passing of a new Fisheries Law. The drafting is a work in process which (according to notes handed by the client) includes:</i></p> <ul style="list-style-type: none"> • <i>5l the interests of artisanal fishers shall be taken into account, including their participation in management of their respective fisheries;</i> • <i>5n an understanding of and broad and accountable participation by stakeholders in the conservation, management, development and sustainable use of fisheries resources shall be promoted to the extent practicable, including the principles of visibility, transparency, participation and inclusivity in the decision-making process; and</i> • <i>8 (2) The CEO may cause to be prepared Fisheries Management Plans at national or local levels for any fishery or fisheries within the scope of this Act, and shall do so for any fishery designated as a priority in accordance with subsection (1), and in doing so shall ensure that consultations with stakeholders are undertaken. The SFA representative interviewed during the site visit (see Appendix 7.2.1 for more details) confirmed that a new fisheries consultation body was set up in 2019 at the Seychelles: the National Fisheries Committee. This is a consultation body comprised by different sectors, such as finance, environment, blue economy, trade, fisheries, etc. The role of this committee is to provide guidance on fisheries policy matters. However, the team could not get any other details in relation to this multi-stakeholder advisory council (composition, activity/meetings, minutes...).</i> <p><i>The implementation of activities aimed to achieve the goals established at the Policy (MFAg, 2019a) and Plan (MFAg, 2019b) will be assessed in the following surveillance audits, including the activity of the newly created National Fisheries Committee.</i></p>
<p>Status</p>	<p>Based on the information presented above, the team considers that progress on this condition is AHEAD TARGET since the surveillance audit took place in May 2021 while</p>

	the current deadline for the second milestone on Condition 6 is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension.
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Table 5.3.1.7. Progress on condition 7

Performance Indicator	3.2.1 – Fishery-specific objectives
Score	75
Justification	Sla Objectives. 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 There are no explicit short and long-term objectives for the Seychelles skipjack tuna fishery.
Condition (revised date according to MSC derogations)	By the fourth annual surveillance audit, 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.
Condition start	November 2018
Condition deadline	May 2023 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2021 to May 2023).
Milestones (revised dates according to MSC derogations)	Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows: Year 1 (November 2019). Echebatar will provide evidence to the audit team in the first annual surveillance audit that—there has been consideration on the process of the establishment of the potential of short and long-term objectives for the Seychelles skipjack tuna fishery in IOTC. Expected score = 75. Year 2 (May 2022). Echebatar will provide evidence to the audit team in the third annual surveillance audit on the progress of the establishment of explicit short and long-term objectives for the Seychelles skipjack tuna fishery within the management system for the national purse fishery for skipjack tuna. Expected outcome: 75 Year 3 (May 2023). Echebatar will provide evidence to the audit team in the fourth annual surveillance audit that short and long-term objectives have been defined and are explicit within the Seychelles management system for the skipjack fishery. Expected score = 80
Progress on Condition (2 nd surveillance audit)	<p>The National Tuna management and development plan is being funded by the World Bank Third South West Indian Ocean fisheries governance and shared growth project (SWIOfish3). During the interview held with the SFA representative, it was confirmed the SFA is currently finalizing the Terms of Reference for this Consultancy which is expected to be ready by end of June. The planned start date for this consultancy is July/August 2021. This is a long term consultancy which will involve extensive stakeholders consultations, and given the situation regarding the pandemic, this may be a problem.</p> <p>As a coastal state, Seychelles provides licenses to foreign fleets to access its EEZ, as well as having a national registered industrial fleet. In parallel, Seychelles is also developing a short range domestic fresh tuna fishery. However, all these actions are not subject to a proper plan, hence the objective of the National Tuna management and development plan is to address this and come up with strategy and a possible transition plan.</p> <p>The closing date for the SWIOfish3 is June 30, 2023. This date is consistent with the new condition deadline: May 2023.</p>

	<p>Year 1</p>	<p>The Government of Seychelles recently published the 'Seychelles Fisheries Sector Policy And Strategy 2019' (MFAg 2019). The Policy defines a number of objectives including:</p> <ul style="list-style-type: none"> • Manage fisheries resources through ecosystem-based approaches and ensure that policies, legislations and infrastructure development are aligned towards achieving sustainability, taking into account climate change, international commitments and global developments; • Foster optimum utilisation of fisheries and aquaculture resources to ensure ecological and socioeconomic sustainability in resource-use and domestic developments, while recognising traditional norms; <p>Policy 1: Good governance and institutional strengthening includes:</p> <ul style="list-style-type: none"> • Promote fisheries management and aquaculture development based on the Ecosystems Approach to Fisheries, the Ecosystems Approach to Aquaculture, the FAO Code of Conduct on Responsible Fishing, the FAO voluntary instrument for Securing Sustainable Small-Scale Fisheries and the guidelines laid down therein, as well as the FAO Technical Guidelines for Aquaculture Development, as well as the relevant provisions of the SADC/IOC Protocol on Fisheries; • Promote and support the adoption of global BMPs so that the industry is ecologically sustainable and becomes internationally competitive; <p>Policy 2: Sustainable management of fisheries and climate resilience includes</p> <ul style="list-style-type: none"> • Manage all fisheries subsectors with a view to incorporate eco-labelling and certification so as to ensure stock sustainability and subsector economic viability; • Consider national and international climate-change research findings within resource assessments and incorporate appropriate adaptation measures within fisheries and aquaculture regulation to increase resilience to climate change; • Undertake an assessment of the vulnerability of the fisheries sector to climate change and adaptation measures that may be possible; • Encourage the development of a select set of long-term indicators that would monitor the climate change impacts within the fisheries sector; <p>Policy 6: Seychellois stake holding in the industrial fisheries sector includes: The industrial fisheries sector is to be developed in a gradual, cooperative and collaborative manner to increase local partnership for the increasing good of all Seychellois, and partners. Opportunities throughout the industrial fishing sector value-chain shall be equitably accessed and provisions made to encourage more local participation and greater local stake holding. The Government will promote an enabling environment to increase stake holding and pave the way for interventions that will achieve fully inclusive Seychellois participation. To address Seychellois stake holding in the sector, the Government will undertake the following strategies:</p> <ul style="list-style-type: none"> • Prioritize the issue of tuna industrial fishing licences to those operations incorporating joint venture approaches; • Evaluate the possibility to allocate industrial fisheries rights to Seychellois nationals in a bid to promote resource ownership and participation in the industry; • Fix minimum levels of local participation for different segments of the fisheries value-chain; • Establish funding sources to support local entrepreneurs within the industrial sector; • Review the responsibilities of Seychelles-flagged vessels and encourage flagging with greater national benefits; • Encourage shore-based facilities by Seychellois; • Establish an appropriate legal framework for joint venture partnership with local companies; • Undertake a review of the access of foreign fishing vessels to Seychelles waters in collaboration with operating partners so as to increase both the national and operating partners' benefits; <p>All the Policy goals reflected above can be considered either for PI3.1.1 or, some of them, as long-term objectives for PI3.2.1. However, the Fisheries Act (2014) introduces the concept of Fishery Management Plans (FMP), and there is no FMP for the tropical tunas fisheries in the Seychelles. According to the client, the SFA is committed to the preparation of an FMP for the tuna fishery, and recent progress on developing new Policies (MFAg 2019a) and Plans (MFAg 2019b) shows a proactive attitude on behalf the MFAg.</p>
<p>Status</p>	<p>Based on the information presented above, the team considers that progress on this condition is AHEAD TARGET since the surveillance audit took place in May 2021 while the current deadline for the second milestone on Condition 7 is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension.</p>	

Table 5.3.1.8. Progress on condition 8

<p>Performance Indicator</p>	<p>3.2.2 – Decision-making processes</p>
<p>Score</p>	<p>75</p>
<p>Justification</p>	<p>Sld. 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. Limited specific information is available on the fisheries conducted under private arrangements.</p>
<p>Condition (revised date according to MSC derogations)</p>	<p>By the fourth annual surveillance audit: Sld. Information on the fishery’s performance and management action relevant to the Seychelles fishery and private agreements is available on request, and explanations are</p>

	<p>provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>
Condition start	November 2018
Condition deadline	May 2023 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2021 to May 2023).
Milestones (revised dates according to MSC derogations)	<p>Original milestones had November 2020 as Year 2, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 2 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (November 2019). Echebatar will provide evidence to the audit team in the first annual surveillance audit that there has been consideration of the mechanism for making information on private agreements available for review by stakeholders. Expected score = 75.</p> <p>Year 2 (May 2022). Echebatar will provide evidence to the audit team in the third annual surveillance audit that information on private agreements is available to stakeholder. Expected score = 75.</p> <p>Year 3 (May 2023). Echebatar will provide evidence to the audit team in the fourth annual surveillance audit that information on private agreements is available to stakeholders and explanations have been provided for any actions or lack of action associated with findings and relevant recommendations Expected score = 80</p>
Progress on Condition (2 nd surveillance audit)	<p>The company's website (https://echebatar.com/echebatar-certificada-por-msc/msc-up-to-date/) were meetings, minutes, documents produced by the ESWG and other related documents are shared has been maintained updated. Thus, information on Private Agreements is available at the Echebatar web site (https://echebatar.com/en/echebatar-obtains-msc-certification/msc-up-to-date/2019-annual-surveillance-audit/documents/ - Echebatar: Fleet Documents> info on each individual vessel).</p> <p>In February 2020, the EU and the Republic of Seychelles signed an agreement valid for 6 years (2020-2026) that establishes the principles, rules and procedures governing:</p> <ul style="list-style-type: none"> - economic, financial, technical and scientific cooperation in the fisheries sector with a view to promoting sustainable fishing in the Seychelles fishing zone to guarantee the conservation and sustainable exploitation of fisheries resources, and developing the Seychelles fisheries sector, - the conditions governing access by Union fishing vessels to the Seychelles fishing zone, - cooperation on the management, control and surveillance measures in the Seychelles fishing zone with a view to ensuring that the above rules and conditions are complied with, that the measures for the conservation and sustainable exploitation of fish stocks and management of fishing activities are effective, and that IUU fishing is prevented, - partnerships between operators aimed at developing economic activities in the fisheries sector and related activities, in the common interest. <p>A Joint Committee shall be set up to monitor the application of this Agreement. The agreement and the two subsequent Council Regulations (Council Regulation 2020/272 and Council Regulation 2020/271) were published at the Official Journal of the European Union. Council Regulation 2020/271 sets the allocation of fishing opportunities under the Protocol on the implementation of the sustainable fisheries partnership agreement between the EU and Seychelles (2020-2026).</p> <p>The first FiTI report from Seychelles has been accomplished and it is published at the SFA website: https://www.sfa.sc/index.php/doc/publications/fiti-reports/category/33-fiti-reports. Seychelles is now the first country in the world to submit its report to the FiTI. During the</p>

	<p>FiTI process, SFA published the two agreements with the government of Mauritius, which allowed Seychelles-flagged vessels to fish in Mauritian water and Mauritius-flagged vessel to fish in Seychelles' waters. On the other hand, there are still three private agreements which are not available to the public: those signed between Seychelles and (i) Taiwan Deep-sea Tuna longline boat owners and exporters Association (TTA), (ii) Top Fortune International (TFI), and (iii) Dongwon Industries Co.Ltd. The National Multi-Stakeholder Group makes 4 recommendations to the Seychelles authorities to improve transparency regarding foreign fishing access agreements (page 62 of the FiTI report).</p>
<p>Year 1</p>	<p><i>The issue of private agreements is covered in the Echebatar Strategy & Operational Plan for a Sustainable Purse Seine Tuna Fishery in the Indian Ocean 2019 -2023 (Echebatar 2019b) that was made available to stakeholders with publication on the Echebatar web site. Specifically, in relation to fishery agreements, the Strategy states:</i></p> <p><u>Strategy</u></p> <ul style="list-style-type: none"> • <i>To provide stakeholders with comprehensive information on Echebatar activities under private fishing agreements.</i> • <i>To promote greater transparency in the private agreements at an international and regional level.</i> <p><u>Operational Plan</u></p> <ul style="list-style-type: none"> • <i>We will publish on our web site the texts of all the agreements that have been made to allow our vessels to operate in the fishery waters of coastal nations and SIDs.</i> • <i>We will inform stakeholders of the activities of our vessels in the fishery waters of coastal nations and SIDs by date and catch, with up-dates in the 6-monthly report.</i> • <i>We will advocate full implementation of the Tuna Transparency Initiative (TTI) in the Long Distance Fleet Advisory Council (LDAC) of the EU.</i> <p><i>One of the actions to achieve this goal was to set up a website (https://echebatar.com/echebatar-certificadapor-msc/msc-up-to-date/) where meetings, minutes, documents produced by the ESWG and other related documents are shared. Further, analysed catch data for 2017 and 2018 (observed and total estimated catch) based on data recorded by observers on board the Echebatar fleet can be downloaded from this site, together with semi-annual landing reports and active fishing licences from each of the certified vessels. Interested stakeholders may register on this site to have access to the regularly updated information related the different sustainability activities where the company is involved. Thus, information on Private Agreements is now available at the Echebatar web site (https://echebatar.com/en/echebatar-obtains-msc-certification/msc-up-to-date/2019-annual-surveillance-audit/documents/ - Echebatar: Fleet Documents> info on each individual vessel). The separate agreements with coastal states are provided in the original MSC certification report (DeAlteris et al 2018), and they will be published and whenever there is a modification, it will be published to the audit team during the corresponding follow-up audit to be reported and published in the report. No changes to the separate agreements with coastal States were identified by the team since the initial assessment, apart from the fact that the Seychelles-EU Protocol fisheries could not be officially ratified in time before the current agreement expired on January 18, 2020, as explained in section 4.2.3.4.</i></p>
<p>Status</p>	<p>Based on the information presented above, the team considers that the progress on this condition is ahead target and the condition can be CLOSED, so PI 3.2.2(d) shall be re-scored (see re-scoring table in section 5.2)</p>

Table 5.3.1.9. Progress on condition 9

<p>Performance Indicator</p>	<p>PI 1.2.1 Harvest strategy</p>
<p>Score</p>	<p>70</p>
<p>Justification</p>	<p>See re-scoring table for PI 1.2.1 on section 5.4 (table 5.4.1)</p>
<p>Condition (revised date according to MSC derogations)</p>	<p>By the 2nd year of the Re-certification cycle (anticipated to be in May 2026), the client must demonstrate 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 reflected in PI 1.1.1 SG80 (i.e., it is highly likely that the stock is above the PRI and is at or fluctuating around a level consistent with MSY).</p>
<p>Condition start</p>	<p>November 2019</p>
<p>Condition deadline</p>	<p>May 2026 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2023 to May 2026).</p>
<p>Milestones (revised dates according to MSC derogations)</p>	<p>Original milestones had November 2020 as Year 1, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on</p>

Covid-19 Fishery Conditions Extension, Year 1 has now been postponed to May 2022. The revised milestone dates are as follows:

Year 1 (May 2022). By the 3rd surveillance audit, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on ensuring adoption of appropriate measures consistent with scientific advice and responsive to the state of the stock such that management objectives reflected at PI1.1.1 are met. Expected score 75.

Year 2 (May 2023). By the 4th surveillance audit, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on ensuring adoption of appropriate measures consistent with scientific advice and responsive to the state of the stock such that management objectives reflected at PI1.1.1 are met. Expected score 75.

Year 3 (2023/2024). During the Re-assessment, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on ensuring adoption of appropriate measures consistent with scientific advice and responsive to the state of the stock such that management objectives reflected at PI1.1.1 are met. Expected score 75.

Year 4 (May 2025): By the 1st year of Re-certification cycle, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on ensuring adoption of appropriate measures consistent with scientific advice and responsive to the state of the stock such that management objectives reflected at PI1.1.1 are met. Expected score 75.

Year 5 (May 2026): By the 2nd year of Re-certification cycle, Echebatar must provide evidence that the harvest strategy for skipjack tuna in the Indian ocean 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. Evidence will relate to stock status and PI 1.1.1 requirements and to IOTC decision-making in response to advice. Expected score 80.

As a result of the audit the team got evidence that the client has implemented the following actions:

1. Echebatar participated in the IOTC meetings of November and February specifically to deal with the harvest strategy for tunas.
2. In preparing for SS4 Echebatar presented its point of view to SIOTI in an effort to get a common position between the producer and processor members but it did not prove possible to achieve a consensus.
3. In addition, Echebatar has been in regular contact with the Maldives and IPNLF.
4. Through ANABAC, contact has been made with the Government of Spain and the EU. 5. Worked with SIOTI in developing two parts of its 2021 work plan.
5. Prepared draft ToR for consideration by SIOTI (AZTI-SIOTI, 2020): Harvest Control Rules for the Indian Ocean Skipjack Fishery with subsequent report (https://echebatar.com/wp-content/uploads/2021/05/Final-ReportIO_SKJ_HCR.pdf)

Progress on Condition
(2nd surveillance audit)

Current score for this PISG was awarded at the previous surveillance audit on the basis of recent catches exceeding the catch limit generated by the HCR, but the latest information on stock status shows that whilst overcatch is still an issue that should be addressed, it is now better reflected in the scoring of PI 1.2.2 Sic and PI 3.2.2 Sib. The assessment team believes that existing information presented in IOCT (2020) and Fu (2020), together with the latest actions at IOTC level (e.g. activity developed by the TCAC during 2020 and 2021, new Res 21/03...see progress on Condition 10 for more details) indicates that it is appropriate to consider that PISG80 of PI 1.2.1 is met. This would be on the basis that currently the stock is on target; SSB2019 was estimated to be of 1.13 SSBTGT (0.98–1.28). The stock is not overfished and overfishing is not taking place. This assessment includes catch data covering the period 1950-2019, meaning that recent overages occurred in 2018 and 2019 were considered. Over the history of the fishery, biomass has been well above and the fishing mortality has been well below the established limit reference points. Based on the results of the stock assessment of skipjack tuna in 2017,

	<p>the Commission, following Resolution 16/02, adopted an annual catch limit of 470,029 tonnes for the years 2018 to 2020. The harvest strategy, as in monitoring (IOTC, 2015b), stock assessment (IOTC,2020) and a HCR (Res 16/02, to be superseded by Res 21/03), as well as management measures, as in a TAC (Res 16/02), are in place and it was mathematically tested that this strategy would be responsive to the state of the stock indicating that the elements of the harvest strategy actually work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.</p> <p>However, this score must agree with scores provided by the overlapping fisheries, and recent conversations with the Maldives team (performing their surveillance audit while this report is being prepared) confirmed that they disagree on considering that this score can be upgraded to 80. This was also decision the decision adopted by the CFTO team, as a result the lowest score was maintained by all teams and the condition remains open.</p>
Status	<p>Based on the actions implemented by the client and at IOTC level, the team considers that the progress towards closing this condition is AHEAD TARGET because of the MSC Covid-19, since the surveillance audit took place in May 2021 while the current deadline for the first milestone on this Condition is May 2022, following the 6-month MSC Derogation and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension.</p>

Table 5.3.1.10. Progress on condition 10

Performance Indicator	PI 1.2.2. Harvest control rules and tools
Score	75
Justification	See re-scoring table for PI 1.2.2 on section 5.4 (table 5.4.2)
Condition (revised date according to MSC derogations)	By the 2 nd year of the Re-certification cycle (anticipated to be in May 2026), the client must demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Condition start	November 2019
Condition deadline	May 2026 (due to the 6-month MSC Derogation due the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the deadline was postponed from November 2023 to May 2026).
Milestones (revised dates according to MSC derogations)	<p>Original milestones had November 2020 as Year 1, however, after applying the 6-month MSC Derogation due to the pandemic and the 1-year MSC Derogation 6 on Covid-19 Fishery Conditions Extension, Year 1 has now been postponed to May 2022. The revised milestone dates are as follows:</p> <p>Year 1 (May 2022). By the 3rd surveillance audit, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on implementing measures that are effective in ensuring catch limits for skipjack tuna set using the HCR adopted in IOTC Res16/02 (or any successor) are not exceeded. Expected score 70.</p> <p>Year 2 (May 2023). By the 4th surveillance audit, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on implementing measures that are effective in ensuring catch limits for skipjack tuna set using the HCR adopted in IOTC Res16/02 (or any successor) are not exceeded. Expected score 70.</p> <p>Year 3 (2023/2024). During the Re-assessment, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on implementing measures that are effective in ensuring catch limits for skipjack tuna set using the HCR adopted in IOTC Res16/02 (or any successor) are not exceeded. Expected score 70.</p>

	<p>Year 4 (May 2025): By the 1st year of Re-certification cycle, Echebatar must provide evidence that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on implementing measures that are effective in ensuring catch limits for skipjack tuna set using the HCR adopted in IOTC Res16/02 (or any successor) are not exceeded. Expected score 70.</p> <p>Year 5 (May 2026): By the 2nd year of Re-certification cycle, Echebatar must provide evidence that available evidence indicates that the tools in use to ensure catch limits for skipjack tuna set using the HCR are appropriate and effective in achieving the exploitation levels required under the HCR set in IOTC Res 16/02 (or any successor).</p>
<p>Progress on Condition (2nd surveillance audit)</p>	<p>As a result of the audit the team got evidence that the client has implemented the following actions:</p> <ol style="list-style-type: none"> 1. Echebatar participated in the IOTC meetings of November and February specifically to deal with the harvest strategy for tunas. 2. In preparing for SS4 Echebatar presented its point of view to SIOTI in an effort to get a common position between the producer and processor members but it did not prove possible to achieve a consensus. 3. In addition, Echebatar has been in regular contact with the Maldives and IPNLF. 4. Through ANABAC, contact has been made with the Government of Spain and the EU. 5. Worked with SIOTI in developing two parts of its 2021 work plan. <p>5. Prepared draft ToR for consideration by SIOTI (AZTI-SIOTI, 2020): Harvest Control Rules for the Indian Ocean Skipjack Fishery with subsequent report (https://echebatar.com/wp-content/uploads/2021/05/Final-ReportIO_SKJ_HCR.pdf)</p> <p>There is an increasing trend in catches above the catch limit generated by the Harvest Control Rule (470,029 t) over the past 4 years, therefore additional management measures should ideally be considered. At its 24th Session (2020), the Commission noted that total catches of skipjack in 2018 (607,701 t) were 30% higher than the catch limit generated by the Harvest Control Rule (470,029 t) and agreed that it should consider addressing deficiencies relating to the harvest control rule for skipjack tuna, in particular, paragraph 11 of Resolution 16/02, (IOTC, 2021a). IOTC has not as yet being able to manage the catches according to the HCR, however during a meeting held in June 2021 by the Technical Committee on Allocation Criteria, various aspects of quota allocation were discussed. In as such, members did support the on-going IOTC practice of factoring in past over-catch in establishing future catch limits and agreed that this concept of adjustment should be reflected in the allocation regime that is currently under discussion (IOTC, 2021b).</p> <p>In addition, the IOTC recognizes the need to ensure that catch limits calculated applying the HCR are respected. A specific discussion on how to allocate the catch limits of the SKJ took place during 2020 and 2021 (EU and Maldives proposals can be consulted). During the latest Session of the Commission held in June this year (S25) a new CMM on the SKJ HCR was adopted (Res 21/03) (IOTC, 2021c) superseding Res 16/02. Res 21/03 acknowledges this need and opens the door to future specific CMMs tackling this matter, despite no specific pre-agreed measures were included. The assessment team understand that this does not merit a re-scoring on P11.2.2(c), since no pre-agreed actions were agreed, but it can be argued as evidence that the harvest strategy is responsive.</p> <p>Also, resolution 21/01 on an interim plan for rebuilding the Indian ocean yellowfin tuna stock in the IOTC area of competence will also serve as a limiting measurement for the skipjack catches, as these species are often caught together (IOTC, 2021c).</p>
<p>Status</p>	<p>Based on the information presented above, the team considers that progress on this condition is AHEAD TARGET since the surveillance audit took place in May 2021 while the current deadline for the first milestone on Condition 10 is May 2022.</p>

5.3.2 New Condition

Table 5.3.2.1– (NEW) Condition 11

Performance Indicator	<p>3.2.2 Decision-making processes</p> <p>Scoring issue b (SG80): 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.</p>
Score	75
Justification	<p><i>Extract:</i> An important example for the fishery has been the timely introduction of an annual catch limit for skipjack derived from the HCR (Res. 16/02) fixed according to the recommendation of the Scientific Committee (SC) and communicated to all CPC for the years 2018-2020. However, the catch limit set exceeded by 30% in 2018, and by 16% in 2019. In 2020, the new skipjack stock assessment found the stock biomass in a good state, and the Scientific Committee noted that “the recent catches that exceeded the (previously-set) limits established for the period 2018-2020, could have been sustained by favourable environmental conditions”. Therefore, the team considers the catch overages to be an important rather than a serious issue. However, the SC concluded that “the Commission needs to ensure that catches of skipjack tuna during this period (2021 – 2023) do not exceed the agreed limit” (IOTC, 2020). Until this is done, for example through the implementation of a CPC catch allocation key, the IOTC decision-making processes do not respond to this other important issue, SG80 is no met for IOTC</p>
Condition	<p>By the 2nd year of Re-certification cycle (anticipated to be in May 2026), the client fishery should demonstrate that at IOTC level, decision-making processes regarding skipjack stock management respond to important issues, specifically to skipjack catches in excess of the annual catch limit corresponding to the HCR, in a transparent, timely and adaptive manner. This could be done by implementing the harvest strategy set out in Resolution 16/02 and in Condition 1, or by some other means as appropriate.</p>
Milestones	<p>Years 1 – 4 (2022 – 2025): The client must provide evidence (from the 3rd surveillance audit until the 1st year of the re-certification cycle) that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on responding to the issue of total catches in excess of the agreed Catch Limit, by progressing with the harvest strategy (as per Conditions on PI1.2.1 and PI 1.2.2) or some other evidence (Score: 75).</p> <p>Year 5 (May 2026): By the 2nd year of Re-certification cycle, the client fishery should provide evidence that regarding the skipjack stock management, IOTC decision-making processes have responded to the possibility of catches in excess of the set total annual catch by implementing the harvest strategy, or by some other suitable means. (Score: 80).</p> <p>Note: condition timeline harmonised with milestones for 1.2.1 and 1.2.2 conditions</p>
Consultation Condition	<p>Recent Resolution 21/03 adopted at S25 held on June 2021 recognizes that “reaching the management objectives defined in Resolution 16/02 requires that the catch limits adopted by the skipjack HCR are implemented effectively and the need for the Commission to ensure that catches of skipjack tuna during this period do not exceed the agreed limit”. Furthermore, the Resolution states that “the Commission may consider to develop and adopt Conservation and Management Measure(s) to ensure catches of skipjack tuna are maintained at or below the overall catch limit established by the HCR and to apply fishing mortality reductions if the stock falls below the Threshold level (i.e $B_{curr} < 0.4B_0$), with due consideration to the aspirations and special requirements of Developing Coastal States and Small Island Developing States, no latter than the annual session of the IOTC in 2022”.</p> <p>Therefore, it could be verified that the closure of this conditions does not require from the IOTC to re-arrange its research, management or funding priorities. The CAB is satisfied that</p>

the closure is both achievable by the client and realistic in the period specified, in accordance with FCP7.19.8.

5.4 Client Action Plan

Echebatar Condition 11 CAP			
Milestone	Action	Roles & Responsibilities	Outputs
<p>Years 1 – 4 (2022 – 2025): The client must provide evidence at that, independently or jointly with industry groups, it has worked with relevant management authorities to press for IOTC action on responding to the issue of total catches in excess of the agreed Catch Limit, by progressing with the harvest strategy (as per Conditions on PI1.2.1 and PI 1.2.2) or some other evidence (Score: 75).</p>	<p>Through the ESWG, Echebatar will:</p> <ul style="list-style-type: none"> actively promote the need for action by the IOTC, Spain and Seychelles, SIOTI and OPAGAC to reduce the risk that the purse seine sector fishing skipjack tuna in the Indian Ocean meets the allocated quota. complete and / or promote research on appropriate harvest control tools. Participate in all IOTC meetings as an observer. 	<p>Echebatar Sustainability Working Group in liaison, as appropriate with others, most notably</p> <p>other MSC certified tuna fisheries (currently Maldives and CFTO and provisionally AGAC),</p> <p>SIOTI,</p>	<p>Minutes of monthly ESWG meetings,</p> <p>written communications,</p> <p>submissions to IOTC from such as SIOTI,</p> <p>management measures for quotas as implemented by Seychelles and Spain,</p>
<p>Year 5 (May 2026): The client fishery should provide evidence that regarding the skipjack stock management, IOTC decision-making processes have responded to the possibility of catches in excess of the set total annual catch by implementing the harvest strategy, or by some other suitable means. (Score: 80).</p>	<p>Fully participate in all SIOTI meetings</p> <p>Prior to each annual surveillance audit, ESWG will prepare a briefing paper with evidence to support a finding that (i) it has met the defined milestones and (ii) the IOTC has responded to the issues related to appropriate harvest control tools.</p>	<p>ANABAC,</p> <p>the Government of Spain</p> <p>and the Government of Seychelles.</p>	<p>IOTC reports (catches, compliance, scientific committee)</p> <p>IOTC discussions and resolutions.</p>

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7 Appendices

7.1 Evaluation processes and techniques

7.1.1 Site visits

The second annual surveillance audit for the first period of certification was conducted offsite between May 19-27, 2021.

Both members of the assessment team participated in all meetings listed in **Table 7.1.1.1**. Besides, Alberto Martin from the MSC participated as observer. All meetings were held according to schedule, but the one with Roy Clarisse (Principal Secretary for fisheries), which initially was scheduled for May 22, but that due to scheduling problems had to be postponed to day 27.

Table 7.1.1.1. Details of the meetings held during the remote visit for the 2SA of the Echebstar fishery

Date	Venue	Time (CEST)	Company/ Institution	Attendees
Wednesday 19	Call	9-12	Echebstar	Jose Luis Jauregui, Marga Andrés, Ane Iriondo, Ian Scott
	Call	16-17		
Thursday 20	Call	9-10:30	Seychelles Fisheries Authority (SFA)	Roy Clarisse
	Call	11-12:30	AZTI	Josu Santiago...
Friday 21	Call	9-10:30		Vincent Lucas
	Call	11-12	Echebstar	Jose Luis Jauregui, Marga Andrés, Ane Iriondo, Ian Scott
Thursday 27	Call	09:00-09:45	Ministry of Fisheries and Blue Economy	Roy Clarisse

7.1.2 Stakeholder participation

The site visit for the surveillance audit was announced at the MSC website on April 14, 2021. In addition, the notification of the surveillance audit was sent to a list of stakeholders identified during the initial assessment and reviewed before current surveillance audit. This list included different contacts from management institutions, research institutions, NGOs and CABs from overlapping fisheries.

Further, the team with the assistance of the client elaborated a list of key stakeholders to be interviewed and were contacted via email and telephone to ensure their participation and arrange the meetings. The list of institutions and people finally interviewed during the site visit is detailed in **Table 7.1.1.1**. Besides, on May 26 the team sent an email to the Spanish General Secretariat for Fisheries requesting specific information on the compliance and quota consumption of the Echebstar vessels flying the Spanish flag, together with an update on the methodology to produce nominal catch statistics for the industrial tuna purse seine fleet of the EU-Spain operation in the IOTC Area of Competence. This email was responded on July 6 and the information gathered was used in the current report.

7.2 Stakeholder input

The main stakeholder input was the information collected during the meetings held at the site visit and the documents sent by the stakeholders as a result of the requests made by the team during those meetings or via email (in the case of the SGP). Besides, ISSF sent comments to Bureau Veritas following the announcement of the surveillance audit of the fishery. This document and the responses provided by the team are presented below (see section "ISSF input"). Apart from the ISSF's comments, no other stakeholder inputs were received by email using the template provided by MSC.

Table 7.2.1 presents the main topics discussed with the different stakeholders during the different meetings. All relevant information collected on updates or modifications affecting the fishery is summarized in **section 4.2** of the current report,

while harmonisation activities with overlapping fisheries are presented in **Appendix 7.4**. All documents used for the assessment are listed in **Section 6** (References).

Table 7.2.1. Details of the main topics discussed during the remote visit carried out as part of the current surveillance audit

Stakeholder	Topics discussed
Client	Results of harmonization activities prior to the surveillance audit Feedback (and evidence if deemed necessary) on: <ul style="list-style-type: none"> - Updates on: (i) certified fleet and client group; (ii) traceability; (iii) regulatory framework; (iv) compliance; (v) stock status and assessments of tropical tunas; (vi) impacts of the pandemic (e.g. observer program) - Progress made by the client on the completion of the conditions set to the fishery
Ministry of Fisheries of Seychelles	Feedback (and evidence if deemed necessary) on: <ul style="list-style-type: none"> - General feedback on the performance of the certified fleet - Mechanisms for controlling YFT quota uptakes - Participation of the Ministry of Fisheries in the IOTC in 2020. Impacts of the pandemic on the normal functioning of the Commission. - Recent 'Seychelles Fisheries Sector Policy and Strategy' and 'Fisheries Comprehensive Plan' included goals to increase consultation and participation of stakeholders in the fisheries management. Details on the activities implemented would be greatly appreciated (e.g. details about the National Fisheries Committee and its performance). - Any other relevant modification in relation to the regulatory framework and/or management authorities in Seychelles?
Seychelles Fishing Authority	Feedback (and evidence if deemed necessary) on: <ul style="list-style-type: none"> - Number of sea and port inspections, infringements and sanctions to the certified Seychellois vessels in 2019 and 2020 - Mechanisms for controlling YFT quota uptakes: data from the certified fleet - Any relevant modification in relation to the regulatory framework and/or management authorities in Seychelles?
AZTI	Feedback (and evidence if deemed necessary) on: <ul style="list-style-type: none"> - Update on AZTI's participation in IOTC-SC in 2020. Impacts of the pandemic on the normal functioning of the IOTC-SC and relevant Working Parties (WPTT, WPEB...). - Status of the main discussions within the WPTT, expectations for 2021 - Discussion on the status and recent stock assessments for SKJ, YFT and BET - Discussion on the implementation of the Res 19/01 and Res 16/02 - Activities performed by AZTI related to the implementation on the AGC/OPAGAC code of good practices - Relevant projects led by AZTI on FAD management in the IO: list, outputs... - Implementation of the observer program on board the certified fleet: monitoring, results... - Outputs from the Echebatar FAD management plan

ISSF input

Performance Indicator (PI) input

Performance Indicator (PI)	Condition	Input summary	Input detail	Evidence or references	Stakeholder input code	CAB response to stakeholder input	CAB response code
Principle 1 - Sustainable fish stocks							
			ISSF provided comments and recommendations prior to the first surveillance audit. These were provided through Echebatar transparency portal and were not included in the MSC surveillance audit as formal stakeholder input. At this stage, ISSF believes the recommendations provided continue to be relevant as input to consider by the surveillance team. An updated version of these is provided for each corresponding PI				
1.2.1 - Harvest strategy	Condition 9. By the first annual surveillance audit following re-certification (anticipated to be in 2024), the client must demonstrate 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 reflected in PI 1.1.1 SG80 (i.e., it is highly likely that the stock is above the PRI and is at	Echebatar action plan should consider including ISSF's recommendations on Harvest Strategies in the action plan to the extent possible.	As regards the Client Action Plan to meet Principle 1 conditions on the adoption of HS and HCR for IO skipjack, ISSF recommends the following specific actions that Echebatar can add to those already listed in the CAP: 1) Publicly support the high-level appeals for RFMOs developed by global NGOs that are participants in the NGO Tuna Forum. In 2021, companies will have the opportunity to engage in other direct RFMO advocacy tactics to demonstrate market support for specific tuna sustainability asks. NGO participants in the NGO Tuna Forum will be reaching out to market partners with these opportunities in the coming months. 2) Continue to advocate for accelerated progress on the adoption and implementation of management procedures/harvest strategies that include HCRs through IOTC, such as through continued direct engagement with national delegations to IOTC or through alignment initiatives with other MSC-certified or MSC-aspiring fisheries which also advocate for management procedures/harvest strategies that include HCRs for Indian Ocean tuna stocks. 3) Urge the delegations of EU and Seychelles and of all other CPCs associated with Echebatar at IOTC to develop proposals for and take a strong public position	https://ngotunaforum.org/ISSF's IOTC Position Statement 2021-02: https://iss-foundation.org/downloads/22206/	Implications unknown	This is a comment addressed to the client, not to the CAB. ISSF has direct communication with Echebatar, so we recommend ISSF to communicate this issues directly to Echebatar.	Not accepted (information for PI score has not changed)

	<p>or fluctuating around a level consistent with MSY).</p>		<p>on:</p> <ul style="list-style-type: none"> • Accelerating action on developing comprehensive, precautionary Management Procedures, and agree on permanent Limit and Target Reference Points for tropical and temperate tunas, particularly yellowfin, by 2022. • Conducting Management Strategy Evaluations (MSE) for albacore, bigeye, skipjack and yellowfin tuna stocks. <p>4) Have meetings, calls or other direct contact with all other relevant IOTC CPC delegations where Echebatar has business interests to advocate for the these points so to accelerate the adoption of management procedures/harvest strategies that include HCRs by the IOTC.</p> <p>5) Publicly support ISSF Position Statements that contain detailed asks on management procedures/harvest strategies that include HCRs to the virtual sessions of the IOTC in 2021 as well as IOTC future in-person meetings, and document that support (e.g. by submitting a letter or some other communication citing the Position Statement).</p> <p>6) Support technical work of IOTC and its Scientific Committee, as well as capacity workshops on Management Strategy Evaluation in the IO region so as to increase the leverage of IOTC members for the discussion and adoption of robust management procedures/harvest strategies that include HCRs.</p>				
<p>1.2.2 - Harvest control rules and tools</p>	<p>Condition 10. By the first annual surveillance audit following re-certification (anticipated to be in 2024), the client must demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</p>	<p>Echebatar action plan should consider including ISSF's recommendations on Harvest Strategies in the action plan to the extent possible</p>	<p>Same recommendations as for previous PI apply here. Additionally, ISSF recommends the following: Urgently monitor and manage catches of skipjack to ensure catches in 2021 and subsequent years do not exceed the catch limit adopted applying the skipjack tuna Harvest Control Rule specified in Resolution 16/02 as per IOTC Circular 2021-09. Thus, Echebatar could consider adopting specific harvest strategies to contribute that overall catch limit is not exceeded. For example, Echebatar could consider adopting a voluntary Skipjack catch limit for its fleet relative to the baseline of Echebatar's catches during 2018-2020.</p>	<p>https://ngotunaforum.org/ISSF's IOTC Position Statement 2021-02: https://iss-foundation.org/downloads/22206/</p>	<p>Implications unknown</p>	<p>P1 assesses the impacts of all fishing activities on the entire stock. A voluntary self-imposed measure as the one proposed by ISSF here would not make any difference to score of P11.2.1 or P11.2.2</p>	<p>Not accepted (information for PI score has not changed)</p>

Principle 2 - Minimising environmental impacts

<p>2.1.2 - Primary species management</p>	<p>Based on Medley et al (2021) it is expected that YFT scoring, as when considered as a Principle 1 stock, would not meet SG80</p>	<p>Medley et al. (2021) provides the following assessment of IO YFT harvest strategy for PI 1.2.1 SI b Harvest strategy evaluation: "The catch limits if enforced will likely result in stock recovery over the next 10 years. Some reduction in catch is highly likely, and, based on prior experience, it should be possible to reduce fishing mortality through the provisions to below FMSY. This meets SG60. What actual reduction will be achieved in practice remains in doubt, and whether this will be sufficient (or more than sufficient) is uncertain. Recent recruitment has been low and if this continues, rebuilding may take more time. A full stock assessment took place in 2018 and was updated in 2019. This did not provide evidence that the rebuilding plan was working yet, so SG80 has not been met". Based on this rationale it could be inferred that Yellowfin tuna does not meet SG80 for PI 2.1.2 SI b Management strategy evaluation.</p> <p>Moreover, Medley et al. (2021) also includes the following reasoning under PI 1.2.1 SI a resulting in a score below SG80: "Much of the strategy is untested and it is unclear whether the harvest strategy will be fully effective, particularly as a number of provisions, like well-defined catch limits, are still in development and have not been implemented yet" and "It is not clear yet that elements of the harvest strategy are working together towards achieving management targets. For example, fleets exempted from the rebuilding requirements seem to be increasing their catches, which is undermining the strategy. The decisions represented by the resolutions did not quite align with SC advice, the rebuilding timeframe was not clearly defined, and it is not yet certain catch reductions will be achieved in a timely manner. It is worth noting that management strategy evaluation procedures are being developed which could lead to a more robust strategy". This rationale also provides basis to infer that Yellowfin tuna might not achieve SG80 for PI 2.1.2 SI c Management strategy implementation.</p> <p>ISSF acknowledges efforts at the UoA level described in the Public Certification Report and 1st Annual Surveillance Report (e.g. both Spain- and Seychelles-flagged vessels abiding by their respective allocated catch limits, number of FADs and supply vessels used below</p>	<p>P.A.H. Medley, J. Gascoigne and G. Scarcella. 2021. An Evaluation of the Sustainability of Global Tuna Stocks Relative to Marine Stewardship Council Criteria (Version 8). ISSF Technical Report 2021-01. International Seafood Sustainability Foundation, Washington, D.C., USA</p>	<p>Implications unknown</p>	<p>As described in Section 4.2.7.2 of the current report, there is no new assessment for the IO-YFT since previous surveillance audit. Score for IO-YFT on PI2.1.1 is based on the latest IOTC assessment. New certified and in-assessment fisheries (CFTO and AGAC) which have just published recent reports coincide on score 80 for this stock.</p>	<p>Not accepted (information for PI score has not changed)</p>
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			the permitted number); but we are concerned that the weaknesses in the rebuilding plan and harvest strategy at the stock level described above may prevent the fishery from meeting SG80 for this PI. ISSF also notes that the scoring for this SI is different for other overlapping fisheries (i.e. CFTO, OPAGAC), which may require further harmonization efforts.				
2.3.3 - ETP species information	PI 2.3.3 ETP species information. By the fourth annual surveillance audit, the client must demonstrate that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	Promote joint efforts to characterize and quantify ETP impacts by all Indian Ocean MSC-certified tuna fisheries including those undergoing full assessment	Although some fisheries do not meet the MSC guidance requirements that trigger the evaluation of cumulative impacts, this does not mean that existing cumulative impacts might not be significant. This is the case of ETP species, as current guidance considers that the combined impact needs to be evaluated "only in cases where either national and/or international requirements set catch limits for ETP species". However, we consider that cumulative impacts to ETP species mortality should be assessed in reference to the species' biological limits, stock assessment results, and management advice, regardless of whether catch limits are in place or not (e.g. when management advice requests to reduce catches but catch limits are not agreed). Since the recommendations provided by ISSF during the first surveillance, several tuna fisheries in the Indian Ocean are actively proceeding towards a full MSC assessment. Also, a number of fisheries in the Indian Ocean reached the ACDR stage in 2020 and will become overlapping fisheries to be considered under harmonization. Thus, we encourage joining efforts among certified and prospective MSC tuna fisheries towards the assessment and development of a management strategy for cumulative impacts on ETP species and habitats in the Indian Ocean.	Implications unknown	Cumulative impacts on PI 3.1.1 shall only be considered when limits are set (Sila), as recognized by ISSF. This is not the case here. The client, apart from keeping updated and detailed information on the interactions with ETP species collected by the observers on board, is presenting relevant information in relation to the most impacted ETP species: the silky shark. See studies referred in the report.	Not accepted (information for PI score has not changed)	

<p>2.4.1 - Habitats outcome 2.4.2 - Habitats management strategy 2.4.3 - Habitats information 2.5.3 - Ecosystem information</p>	<p>Conditions 2, 3, 4 and 5. By the fourth annual surveillance audit, the client must demonstrate that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm (condition 2) showing that a partial strategy is in place (condition 3) with adequate information (condition 4). And similarly, the client must demonstrate that adequate information is available to infer ecosystem status (condition 5).</p>	<p>Echebatar action plan should consider including ISSF recommendations on FAD management plans to tackle those topics into the client action plan to the extent possible</p>	<p>Same comments as for Condition 1 apply here with regard to cumulative effects on habitats from purse seine FAD fishery. In addition, ISSF is concerned by the lack of knowledge of the number of FADs that are being considered lost and beached by purse seine fisheries in the Indian Ocean and thus potential habitat impacts. ISSF suggests complete background information is provided in the surveillance report covering the following: GENERAL FISHERY DESCRIPTION A complete dFAD fishery description section must include information on all fishery's operations, including the use of FADs. For example, information required to correctly evaluate impacts would include: number of FADs deployed annually, design and materials of FADs, FAD marking system used (if any), number of FAD tracking buoys purchased annually and/or average number of buoys active.</p> <p>FAD MANAGEMENT STRATEGY ISSF recommends that the surveillance report includes a description of the fishery's FAD management strategy. A comprehensive FAD management plan would comprise data collection and analysis to address FAD impacts on habitat and P2 species, including cumulative effects with other tuna fisheries in the Indian Ocean (see comment on cumulative impacts). Such FAD management plan could be informed by, and developed to comply with all best practices identified in, ISSF's Technical Report 2019-11 on Recommended Best Practices For FAD Management In Tropical Tuna Purse Seine Fisheries. Moreover, the fishery's FAD management plan could be further informed by ISSF Technical Report 2018-19A Workshop for the Reduction of the Impact of Fish Aggregating Devices' Structure on the Ecosystem. Please see below the six elements of FAD management that ISSF considers to be of utmost importance, as well as some practical examples the fishery could adopt to implement them. For further examples and recommendations, please see ISSF Technical reports 2019-11 and 2020-11. Moreover, ISSF recommends that the client fishery develops a public FAD Management Plan in the line of what is required by ISSF Conservation Measure 3.7 Transactions with Vessels or Companies with Vessel-Based FAD Management Policies (effective June 2021). (1) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type Provision to IOTC of routine FAD fishery statistics (e.g.</p>	<p>ISSF non-entangling and biodegradable FADs guide https://issf-foundation.org/knowledge-tools/guides-best-practices/non-entangling-fads/download-info/non-entangling-and-biodegradable-fads-guide-english/ ISSF Technical Report 2019-11 https://issf-foundation.org/knowledge-tools/technical-and-meeting-reports/download-info/issf-2019-11-recommended-best-practices-for-fad-management-in-tropical-tuna-purse-seine-fisheries/ ISSF Technical Report 2018-19 https://issf-foundation.org/knowledge-tools/technical-and-meeting-reports/download-info/issf-2018-19a-workshop-for-the-reduction-of-the-impact-of-fish-aggregating-devices-structure-on-the-ecosystem/ ISSF Technical Report 2020-11 https://issf-foundation.org/knowledge-tools/technical-and-meeting-reports/download-info/issf-2020-11-recommended-best-practices-for-tropical-tuna-purse-seine-fisheries-in-transition-to-msc-certification-with-an-emphasis-on-fads/ CM 3.7 https://issf-foundation.org/what-we-do/verification/conservation-measures-commitments/bycatch-mitigation-3-7-transactions-with-vessels-or-companies-with-vessel-based-fad-management-policies/ F22</p>	<p>Implications unknown</p>	<p>As far as the team is aware Echebatar is fulfilling with the 6 elements pointed by ISSF. Actually, all Echebatar vessels are in the ISSF PVR list. According to the results of the last audit the Echebatar fleet are following ISSF's best practices on non-entangling FADs and FAD management plans. MRAG is auditing these vessels to make sure that they are complying with the ISSF's requirement to be included in the PVR list. AZTI is also in charge of verifying the FAD tracking measures. The team could check some of the monthly reports sent to the company and interviewed AZTI representatives that confirmed that everything is being implemented in accordance with regulations. Furthermore AZTI is also in charge of auditing the implementation of the ANABAC Code of Best Practices and the Standard UNE195006:2016 (which includes the Code as part of the Standard). AZTI issues annual declarations of conformity of compliance with the Code which include the verification that FAD design is in accordance with existing regulations. We do not consider that a detailed account of all FAD activities should be included in the surveillance report.</p>	<p>Not accepted (information for PI score has not changed)</p>
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		<p>activity on FADs, number of active FADs, etc.) as per IOTC Res.15/01, 15/02, and 19/02 requirements which is essential to assess and manage the impacts of FAD fisheries. ISSF suggests that information on FAD fishery statistics, as per IOTC requirements, as well as information on observer data (100 % coverage) are provided to flag States and the IOTC.</p> <p>(2) Voluntarily report additional FAD buoy data for use by RFMO science bodies In order to meet ISSF’s best practices on this aspect, ISSF recommends the client fishery provides information on position and acoustic record for the whole track or, alternatively, at least one position and echosounder record per day to scientific research institutes or to the IOTC.</p> <p>(3) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made In order to meet IOTC’s Recommendations and ISSF’s best practices for limiting the number of FADs and to strengthen the effectiveness of these FAD measures, ISSF recommends committing to actions such as (i) deploying only FADs with satellite tracking buoys , (ii) not activating remotely the buoys of inactive FADs in the water (i.e. dormant FADs), (iii) allowing buoys to report at least once per day while they are in the water, and (iv) adopting alternative possible measures such as FAD closures to reduce their impact.</p> <p>(4) Use only non-entangling FADs to reduce ghost fishing o A new ISSF non-entangling and biodegradable FADs guide was published in August 2019 and, thus, ISSF encourages fisheries to commit to the new definition of fully non-entangling FAD (without any netting) as per IOTC Resolution 19/02 requirement. This will allow following the best practice of Technical Paper 2019-11 to commit to using only non-entangling FADs as well as to comply with IOTC Resolution 19/02 o ISSF encourages incorporating in the FAD management plan actions to reduce and remove entangling FADs from the water, including encountered FADs not owned by the fishery client.</p> <p>(5) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies ISSF recommends the FAD management plan incorporates specific actions to address the impact of FAD losses. For example, ISSF suggests the fishery under assessment works towards an early adoption of biodegradable FADs in the Indian Ocean and the</p>			
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		<p>construction and deployment of simpler, smaller biodegradable FADs.</p> <p>Moreover, ISSF encourages FAD fisheries to further develop good practices to reduce the loss and abandonment of FADs as described in Technical Paper 2019-11 and Technical Paper 2018-19. For example, by (i) providing FAD track data till the end of their lifetime to identify areas of high incidence of stranding events, (ii) providing positional data on beached FADs to enable targeted recovery, and (iii) participating in cooperative efforts to recover FAD from the water and remove stranded FADs. The assessment report should include a detailed description of the number of FADs recovered by the fishery and the recovery strategy/plan in place and technology used.</p> <p>(6) For silky sharks (the main bycatch issue in FAD sets) implement further mitigation efforts</p> <p>ISSF praises the positive results obtained in recent projects to evaluate post release shark mortality, and encourages Echebatar to continue research and adoption of further measures to reduce shark bycatch. ISSF supports the adoption by the fishery under assessment of measures to reduce shark bycatch (e.g. developing and implementing a Code of Good Practices for bycatch) and suggests the fishery further develops measures to ensure that silky shark mortality is reduced (e.g. directing more effort to school sets and decrease FAD sets, avoiding small sets or with high bycatch/tuna ratio, releasing sharks from the net when safe and practical, implementing live and safe release of sharks (and rays) from the deck).</p> <p>ISSF encourages FAD fisheries to further test and develop shark and rays release techniques from the deck (with a special focus on big individuals) and to identify the tools/tactics used to the safe release of sharks (hoppers, stretchers, release ramps, etc.).</p> <p>Other comments: The Echebatar Action Plan states “Commit to removing entangling FADs that are found in the water” but the identified actions do not fully meet the spirit of ISSF best practice. ISSF encourages further developing the actions under this section of the client action plan to clarify that the measures are not limited to not placing buoys on entangling FADs, but that Echebatar also commits to retrieving any entangling FADs they encounter regardless of the frequency of these encounters.</p>			
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<p>2.4.1 - Habitats outcome</p>	<p>Condition 2. By the fourth annual surveillance audit, the client must demonstrate that FADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm.</p>	<p>1-The strategy should include a quantitative assessment of its potential results 2-Echebatar should expedite transition to 100% use of Biodegradable FADs in order to have a fully functional strategy to mitigate FAD habitat impacts</p>	<p>1- "From 1st January 2021, Echebatar will voluntarily reduce the number of operational buoys per purse seiner vessel followed at any one time to 275 with a maximum annual purchase per purse seiner vessel of 475 instrumented buoys". Taking into account the significant percentage of FADs that are lost and their fate is unknown, we would recommend to evaluate if the implemented action plan would reduce the risk of serious or irreversible harm. Also, we suggest that the strategy should be structured around specific quantitative objectives, and that more detailed information on the FAD watch program results is included as part of the surveillance report. 2- "Echebatar must provide evidence to the second annual surveillance that the plan has been fully implemented with a description of the actions undertaken". The client action plan included the use of Biodegradable FADs as a means of mitigating impacts on VMEs. We acknowledge Echebatar's participation in pilot projects to test Biodegradable FADs at this stage, and we highly encourage Echebatar to use the outcome of these trials to accelerate their transition towards the use of biodegradable FADs.</p>	<p>Implications unknown</p>	<p>We agree on the need to present more detailed data on the FAD Watch program, we have requested them. Echebatar is presenting evidence of non-entangling FADs (declaration of conformity issued by AZTI, and also the details provided at the PVR list website). Echebatar is also presenting evidence that they have participated in the BIOFAD project and that they still collaborating with AZTI on the development of BIO-FLOATS (confirmed by AZTI representatives interviewed)</p>	<p>Not accepted (information for PI score has not changed)</p>
<p>2.4.2 - Habitats management strategy</p>	<p>Condition 3. By the third annual surveillance audit, the client must provide evidence that a partial strategy in place that is expected to result that it will be highly unlikely that derelict FADs could reduce structure and function of the coral reefs to a point where there would be serious or irreversible harm.</p>	<p>Echebatar should expedite transition to 100% use of Biodegradable FADs in order to have a fully functional strategy to mitigate FAD habitat impacts</p>	<p>Year 2. "Echebatar must provide evidence to the second annual surveillance that the partial strategy has been fully implemented with a description of the actions undertaken". The client action plan included the use of Biodegradable FADs as a means of mitigating impacts on VME. We acknowledge Echebatar's participation in pilot projects to test Biodegradable FADs at this stage, and we highly encourage Echebatar to use the outcome of these trials to accelerate their transition towards the use of biodegradable FADs.</p>	<p>Implications unknown</p>	<p>Echebatar is using textiles tested as part of the BIOFAD project. There are still challenges in a 100% biodegradable FAD, for instance instrumented buoys are excluded from the obligation to transition to biodegradable adopted in Res 19/02. In any case, the team consider that current measures constitute a partial strategy that scores 80 for the SI(a) PI 2.4.2, as detailed in the current report</p>	<p>Not accepted (information for PI score has not changed)</p>

<p>2.4.3 - Habitats information</p>	<p>Condition 4. By the fourth annual surveillance audit, the client must provide evidence that information is adequate to allow for identification of the main impacts of derelict FADs on coral reefs, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear</p>	<p>A lack of data and knowledge on lost and stranded FADs by purse seiner makes it difficult to evaluate the effects of derelict FADs on habitats.</p>	<p>Same comments as for Condition 1 apply in regard to cumulative effects by derelict FADs on habitats by all certified and prospective MSC tuna purse seine FAD fisheries. ISSF is concerned by the lack of data and knowledge of the number of FADs that are being considered lost and beached by purse seine fisheries in the Indian Ocean and their potential impacts on habitats. ISSF would recommend increasing the scope of information and areas being considered for FAD habitat impacts, taking into account the numbers of FADs escaping the fishery with unknown fate. ISSF would encourage Echebatar, in conjunction with other fisheries with MSC aspirations, to collect information and evaluate if current cumulative effects of all Purse Seine fisheries in the Indian Ocean would highly unlikely reduce structure and function of habitats to a point where there would be serious or irreversible harm.</p>		<p>Implications unknown</p>	<p>AZTI has just signed an agreement with AZTI to increase the knowledge on the effect of derelict FADs on coral communities in the Indian Ocean. The ToR addresses many of the concerns raised by ISSF in relation to beaching FADs.</p>	<p>Not accepted (information for PI score has not changed)</p>
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7.3 Revised surveillance program

The surveillance level determined in the PCR was 6 (4 on-site surveillance audits). However, due to the current Covid-19 health crisis (preventing travel) and the MSC Derogation 6 on Covid-19 Fishery Conditions Extension, the CAB conducted an off-site audit at the second surveillance.

In addition, the number of auditors (as explained in the first Surveillance audit report) has been brought down from 3 (as indicated in the PCR) to 2.

No further modifications to the surveillance level and type are proposed for future surveillance audits. It is expected that subsequent surveillance audits will take place close to the anniversary date of the fishery.

See tables below for the scheduled surveillance program.

Table 7.3.1. Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 6	Off-site surveillance audit	Off-site surveillance audit (due to the pandemic)	On-site surveillance audit	On-site surveillance audit & re-certification site visit

Table 7.3.2. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
3	May, 2022	March 2022	NA
4	May, 2023	March 2023	NA

Table 7.3.3. Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
3	On-site	2 auditors	FCP 7.28.6.1 states that in the initial certification period, the number of auditors for surveillance activities shall be at least 2. There is no requirement on including 3 auditors in the team as far the selected team fulfils the qualification and competency criteria in table PC3 (FCP v.2.1). The team selected by BV meets those requirements.
4	On-site	3 auditor on-site	No amendment since the PCR since the site visit of the last surveillance audit will be joined with the site visit for the re-assessment of the fishery.

7.4 Harmonised fishery assessments

The MSC Fisheries Certification Process v2.2 (FCP) sets out procedures for ensuring consistency of outcomes in overlapping fisheries (see Annex PB of the FCP). The intention of this process is to maintain the integrity of MSC fishery assessments. To assess the harmonisation requirements per PI, the team applied the table GPB1 in FCP2.2.

MSC overlapping fisheries have been identified as fisheries targeting tropical tunas and operating in the Indian Ocean. MSC Fisheries with overlapping UoAs are detailed below in **table 7.4.1** and the relevant PIs requiring harmonisation are detailed. A summary of the information supporting the decision of which PIs are subject to harmonisation is presented in **¡Error! No se encuentra el origen de la referencia..**

Table 7.4.1- Overlapping fisheries: status and PIs to harmonise. Source: [MSC website](#) consulted on 24/03/2021

Fishery name (& CAB)	Certification status and latest report available	PIs to harmonise
Maldives pole & line skipjack tuna	Certified since 2012 (<i>Latest report published: Surveillance report (23 Sep 2020)</i>)	P1: all P2: 2.1.1a (main components), 2.2.1a (main components), 2.3.1a (limits), P3: all at IOTC level of jurisdiction
CFTO Indian Ocean Purse Seine skipjack Fishery	Certified in June 2021 (Control Union) <i>Latest report published: Public Certification Report (02 June 2021)</i>	P1: all P2: 2.1.1a (main components), 2.2.1a (main components), 2.3.1a (limits), 2.4.1b (VME recognition), 2.4.2a, c (at SG100) P3: all at IOTC level of jurisdiction
AGAC four oceans integral purse seine tropical tuna fishery	In assessment (Lloyds Register) <i>Latest report published: Public Comment Draft Report (12 July 2021)</i>	P1: all P2: 2.1.1a (main components), 2.2.1a (main components), 2.3.1a (limits), 2.4.1b (VME recognition), 2.4.2a, c (at SG100) P3: all at IOTC level of jurisdiction

Table 7.4.2.- Overlapping fisheries: supporting information

Supporting information	
<p>P1: The target stock is the same, hence harmonisation on all PIs is required.</p> <p>P2: Apart from using the harmonisation requirements listed in Table GPB1 in FCP 2.2., P2-PIs were assessed in respect to Table provided in the MSC directions for harmonisation between overlapping fisheries (see https://mscportal.force.com/interpret/s/article/What-are-the-MSC-requirements-on-harmonisation-multiple-questions-1527586957701).</p> <p>P3: The international component of the management system (IOTC) is the same so must be harmonised. The national components vary between the 4 overlapping fisheries.</p>	
Was either FCP v2.2 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising?	YES, no agreement was reached on the need to score PI 1.2.1 to 80, so the lowest score was maintained by all teams.
Date of harmonisation meeting	<ul style="list-style-type: none"> - Exchange of emails regarding PI 3.2.2 between the involved CABs took place between late 2020 and May 2021. - Exchange of emails regarding PI 1.2.1 started in June 2021. - Exchange of emails regarding the need to harmonise scores for PI 1.2.3 and PI 1.2.4 started in July 2021.
If applicable, describe the meeting outcome	
- A decision to set a condition on PI 3.2.2 (as raised by the CFTO team) was achieved.	

- The BV team assessing the Echebatar fishery found that condition on PI 1.2.1 should be closed based on the outcome of the latest assessment performed and the latest activities developed at IOTC level (e.g. activity developed by the TCAC during 2020 and 2021, new Res 21/03, new Res 21/01). However, this score must agree with scores provided by the overlapping fisheries, and recent conversations with the Maldives team (performing their surveillance audit while this report is being prepared) confirmed that they disagree on considering that this score can be upgraded to 80. This was also decision the decision adopted by the CFTO team, as a result the lowest score was maintained by all teams and the condition remains open.

- The BV team assessing the Echebatar fishery found scoring differences in PI 1.2.3 and PI 1.2.4 between the new certified/in-assessment fisheries (CFTO and AGAC) and the 'old' fisheries (Maldives and Echebatar). After email exchange between the different teams and CABs, it was concluded that since no significant differences exist (all scores are above 80) there was no need to agree on the same scores. However, this team decided to revise the scoring for these two PIs to ensure consistency with scores of the overlapping fisheries. As a result PI 1.2.3 was re-scored from 90 to 80, while PI 1.2.4 was re-scored from 85 to 90.

The scores awarded by the different MSC overlapping fisheries to the PIs subject to harmonisation are presented in **Table 7.4.3**, and any differences in scoring are explained in **Table 7.4.4**.

Table 7.4.3- Overview of PI scores for overlapping fisheries with explanation for those PIs where there are material differences in outcome. (*) Not harmonised for P2-habitat components as completely different fishery (pole and line versus purse seine)

PIs	Maldives	Echebatar	AGAC	CFTO	Rationale for scoring differences
1.1.1	100	100	100	100	N/A
1.2.1	70	70	70	70	N/A
1.2.2	75	75	75	75	N/A
1.2.3	90	80	80	80	During the harmonisation process, the Maldives team confirmed that they will re-score this PI to 80 after their current surveillance audit. All fisheries will score the same.
1.2.4	85	90	90	95	During the harmonisation process, the Maldives team confirmed that they will re-score this PI to 95 after their current surveillance audit. Thus, a scoring difference of 5 points will remain for this PISG. This difference is based on the consideration on whether the stock assessment is being externally reviewed, SG(e).
2.1.1(a)	YFT-80 BET-80	YFT-80 BET-80	YFT-80 BET-80	YFT-80 BET-80	N/A
2.2.1(a)	No main secondary species are impacted by the Echebatar fishery, so harmonisation for this P2-component is not triggered.				N/A
2.3.1(a)	None of the assessments have limits; cumulative impacts not triggered.				N/A

2.4.1(b)	Coral reefs as VMEs recognised among all fisheries that have dFAD components.				N/A
2.4.2(a)	(*)	Harmonisation of scoring at SG100 not triggered (SG100 not met for any of the overlapping fisheries)			N/A
2.4.2(c)	(*	Harmonisation of scoring at SG100 not triggered (SG100 not met for any of the overlapping fisheries)			N/A
3.1.1	90	80	80	80	Maldives-specific difference
3.1.2	95	75	95	85	Flag/gear specific differences. In the case of Echebatar the condition points to consultation processes at Seychelles.
3.1.3	80	100	100	100	Maldives-specific differences
3.2.1	80	75	85	80	Flag/gear specific differences. In the case of Echebatar the condition points to lack of fishery-specific objectives at Seychelles level.
3.2.2	95 (expected to be re-scored at 75 at the next surveillance audit)	75	75	75	Harmonised before current surveillance audit. New score based on the low capacity of the IOTC to enforce IO-SKJ catch limits and respond to recent catch overages.
3.2.3	75	85	80	80	Maldives-specific condition on SId because of systematic non-compliance on artisanal vessels logbook completion. Score differences on SI© for the three purse seine fisheries are based on different evidence provided by the different clients and flags.
3.2.4	80	80	90	80	AGAC considers that the IOTC management system is subject to regular internal and external review, while all the other fisheries also take into consideration private agreements, so SG100 for SI(b) is not met.

Table 7.4.4- rationale for scoring differences

If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.2 Annex PB1.3.6)

The only significant scoring differences are found in some P3-PIs, but PB1.3.6.1 is not applicable since scoring differences in P3-PIs can be explained based on flag/gear differences.

If exceptional circumstances apply, outline the situation and whether there is agreement between or among teams on this determination

No exceptional circumstances apply.