

# Indian Ocean Tuna Longline (Bumblebee/FCF) Three-Year Evaluation Report

Version 1.3, November 2022

## FIP Information

Fill in the following table. The management authority is the regulatory authority with fishing management responsibilities; there may be multiple authorities where joint jurisdictional responsibilities occur.

Target species scientific name(s) and common name(s) [state target stock(s), if relevant]	Albacore tuna ( <i>Thunnus alalunga</i> ) Bigeye tuna ( <i>T. obesus</i> ) Yellowfin tuna ( <i>T. albacares</i> )
Fishery location	Indian Ocean
Gear type(s)	Longline vessels
Estimated FIP Landings (weight in tons)	30,000
Vessel type(s) and size(s)	Large Industrial Longliners
Number of vessels	Around 220 Vessels (The current list includes 170 Taiwan, 30 China and 20 Seychelles flagged vessels) The full list of potential flags: China, Taiwan, Malaysia, Seychelles, Oman Fishing Areas: EEZs of Mauritius, Seychelles, Madagascar & High Seas
Management authority	Indian Ocean Tuna Commission
Assessor name(s)	Charlotte Tindall
Assessor Organization/Affiliation	Charlotte Tindall Consulting
Date of report completion	27 April 2023

## FIP Background (Optional)

*This section is optional. If the assessor completes this section, use it to provide additional information about the context in which the FIP operates.*

This FIP covers a large Longline fishery in the Indian Ocean supplying FCF Ltd and Bumblebee Foods. It represents roughly 220 vessels that are flagged to Taiwan, China and the Seychelles (although in the past it has also included vessels flagged to China, Taiwan, Malaysia, Seychelles and Oman). FCF do not own any vessels. The vessels fish in the EEZs of Mauritius, Seychelles and Madagascar as well as fishing on the High Seas of the Indian Ocean

## Stakeholder Consultation & Meetings

Name	Affiliation	Date and Subjects Discussed
Tom Evans	Key Traceability	<p><u>Tuesday, 21<sup>st</sup> March 2023</u></p> <ul style="list-style-type: none"> <li>• Update on P1 scoring, particularly issues with Yellowfin</li> <li>• Update on P2: discussed plans for trialing Electronic Monitoring on 5 vessels, then scaling up; some observer data available</li> <li>• Plans to move towards full assessment at the end of 2024</li> <li>• Update on P3: main issues are enforcement and monitoring and surveillance.</li> </ul>
Hao Mai Metilda Chu Tom Evans Daniel Yang	FCF Ltd FCF Ltd Key Traceability Key Traceability	<p><u>Wednesday 19<sup>th</sup> April 2023</u></p> <ul style="list-style-type: none"> <li>• The main achievements of the FIP: ETP Policy and EM Installation</li> <li>• The key challenges of the FIP: Communicating with FCF associate vessels</li> <li>• The focus of the FIP going forward: EM and fine tuning mitigation measures</li> <li>• Data discussions: Observer data, EM installation</li> <li>• ETP Policy: Skipper training, audits</li> </ul>

## Summary of Findings and Recommendations

This is a very large fishery with around 220 longline vessels operating throughout the Indian Ocean including the High Seas and EEZs of Mauritius, Seychelles, Madagascar that sell fish to FCF Ltd. Vessels are flagged mainly to Taiwan, China and Seychelles (but there have also been vessels involved in the past flagged to Malaysia and Oman). It is challenging to roll out policies and communicate across such a large fleet with disparate ownership. FCF Ltd have attempted to address this through holding supplier engagement events and by developing an ETP/Shark finning policy which will be rolled out through an audit and training programme. Given the challenges FCF Ltd have taken the decision to implement Electronic Monitoring across the fleet so that policies can be monitored. There is an objective to install EM on 5-10% of vessels this year (2023) and an analysis of 20-30% representation of hooks. To date EM has been fitted on four vessels in the fishery and data should be available by the end of the year. This will give much needed clarity on target, by-catch and ETP species, and can also be used to monitor implementation of the FIP conservation policies. The FIP has engaged in advocacy to the IOTC and flag states to improve the status of Yellowfin tuna and develop and implement effective harvest strategies (including harvest control rules). Additional advocacy is needed to stress the urgency on rebuilding Yellowfin as well as Bigeye tuna stocks and ensuring harvest control rules respond in a timely manner when there is a decline in stocks. The following recommendations are given:

### Recommendations:

#### Principle 1:

- Use more up to date and representative observer data (or Electronic Monitoring data) to confirm which are the target species for this fishery.
- Accurately assess Oilfish and escolar if these turn out to be target species, and if Malaysian vessels rejoin the FIP.
- Continue to advocate for effective action to rebuild yellowfin and bigeye tuna stocks.
- Continue to advocate for finalization and implementation of harvest strategies and harvest control rules for yellowfin, bigeye and albacore tuna.

#### Principle 2:

- Advocate for improved management and status of Southern Bluefin Tuna (which is currently identified as a main primary species).
- Representative observer or EM data is required to analyze and confirm the main primary, secondary and ETP species, as well as numbers and fate of ETP species discarded.
- Conduct a PSA for escolar and for any other main secondary species that are identified.
- Include the mandatory use of tori lines on all vessels to reduce seabird bycatch.
- Ensure skipper training is delivered to all vessel captains and maximize the number of skippers that receive in-person training.
- Ensure via audits that by-catch mitigation measures and identification posters are available on all vessels.
- Work towards all vessels becoming members of the PVR Register.
- Provide results of the due diligence on implementation of by-catch mitigation measures.
- Analyze EM trial data for Principle 2 indicators ASAP as planned.
- Implement EM on 20-30% of hooks ASAP as planned and analyze data.
- Advocate for all flag states in the FIP to have and implement national plans of actions on sharks and seabirds

#### Principle 3:

- Provide evidence or advocate for fisheries specific objectives for Madagascar
- Provide evidence or advocate for transparent decision making processes in Malaysia
- Provide evidence or advocate for compliance and enforcement for Oman
- Provide evidence or advocate for management performance evaluation for Oman

## Summary of MSC Performance Indicator Scores

Fisheries that contain combinations of multiple target species, gear types, and/or governing jurisdictions (UoAs) have the option to complete the [Multi-species/Gear/Jurisdiction Indicator Score spreadsheet](#) but **please note that the table below must provide the lowest score for each performance indicator. For Multi-species/Gear/Jurisdiction FIPs, the assessor may choose to address only the scoring issues for the lowest scoring UoA(s) for that performance indicator in the rationale.**

Principle	Component	Performance Indicator		Previous Score [2022]	Current Score [2023]	Rationale or Key Points
1	Outcome	1.1.1	Stock status	60-79	60-79	<p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b></p> <p>1.1.1.a) <b>It is not clear if the stock is above the point where recruitment would be impaired (PRI).</b> The latest stock assessment (2021) indicated that Indian Ocean Yellowfin stocks are currently overfished (SB2020/SBmsy = 0.87) (IOTC, 2022a). The SB is estimated to be 31% of the unfished/virgin biomass. The stock level has not reached the limit point (interim limit reference point) of 0.4Bmsy or lower than 20% of the virgin biomass; but the assessment concluded that there is a 68% chance that the stock is overfished and overfishing occurring. <b>(SG80)</b></p> <p>1.1.1.b) <b>The stock is not fluctuating around a level consistent with MSY.</b> The 2018 assessment stated that overfishing is occurring (F2020/Fmsy = 1.32). MSY was calculated as 349,000t, while average catches from 2017-2021 were 435,225t. <b>(SG60-79)</b></p> <p><b>1.1.2 will have to be scored as part of stock rebuilding.</b></p>
				>80	60-79	<p><b>Bigeye tuna (<i>Thunnus obesus</i>)</b></p> <p>1.1.1.a) <b>It is highly likely that the stock is above the Point of Recruitment Impairment (PRI).</b> The latest stock assessment (2022) concluded that the Bigeye tuna stock is currently overfished with the standing stock biomass less than that required to sustain MSY SB2021/SBmsy (95% CI) = 0.9 (IOTC, 2022b). The SB is estimated to be 25% of the unfished/virgin biomass. The stock level has not dipped lower than 20% of the virgin biomass; but the assessment concluded that there is a 79% chance that the stock is overfished and overfishing occurring. It is likely that the stock is above the point where recruitment would be impaired (PRI), but there is not a high degree of certainty. <b>(SG80)</b></p> <p>1.1.1.b) <b>The stock is not fluctuating around a level consistent with MSY.</b> The 2022 assessment stated that overfishing is occurring (F2021/Fmsy = 1.43). <b>(SG60-79)</b></p> <p><b>1.1.2 will have to be scored as part of stock rebuilding.</b></p>

				>80	>80	<p><b>Albacore (<i>Thunnus alalunga</i>)</b></p> <p>1.1.1a) <b>There is a high degree of certainty (&gt;80% probability) that the stock is above the Point of Recruitment Impairment (PRI).</b> The latest stock assessment (2022) concluded that the Albacore stock is not currently overfished with the standing stock biomass greater than that required to sustain MSY SB2020/SBmsy (80% CI) = 1.56 (IOTC, 2022c). It is therefore highly likely that the stock is above the point where recruitment would be impaired (PRI). <b>(SG 80)</b></p> <p>1.1.1b) <b>The stock is fluctuating around a level consistent with MSY.</b> The previous stock assessment (2022) indicated that fishing mortality was able to sustain MSY (F2022/Fmsy = 0.68). <b>(SG80)</b></p> <p><b>Recommendations:</b></p> <p>Although this has been defined as a Fishery targeting Yellowfin, Bigeye and Albacore tuna, the observer data (provided for 2016-2017 for Taiwanese and Malaysian vessels) suggests that the target species are in fact Albacore (36.5%), Oil fish (26.31%) and Escolar (12.7%). Yellowfin only makes up 0.82% and Bigeye 2.58%. it was reported by the FIP that this was due to Malaysian vessels targeting Oil fish and selling their by-catch tuna to FCF. The Malaysian vessels are not currently on the vessel list by may reenter the FIP. The P1 species need to be confirmed with more representative data across the fleet:</p> <ul style="list-style-type: none"> <li>• Use more up to date and representative observer data to confirm which are the target species for this fishery;</li> <li>• Complete P1 assessment for Oil fish and Escolar if these turn out to be target species, and if Malaysian vessels rejoin the FIP.</li> </ul>
	1.1.2	Stock rebuilding	N/A	<60	<p>&lt;60</p> <p>[Consistent with ISSF, 2023a]</p> <p>60-79</p> <p>[Consistent with ISSF, 2023a]</p> <p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b></p> <p>The Commission has an interim plan for the rebuilding of yellowfin stocks, requiring reductions in 2022 catches based on 2014 catch levels (Resolution 21/01). However, catches have not decreased in the period 2016-2021 to the level required for rebuilding. ISSF, 2023a concludes that it is unlikely that rebuilding will be achieved in two generations and SG60 is not met. <b>(SG&lt;60)</b></p> <p><b>Big eye tuna (<i>Thunnus obesus</i>)</b></p> <p>The Commission has adopted a management procedure for bigeye tuna (Resolution 22/03) which has an objective of reaching Bmsy with a probability of 60% by 2034-2038. The Resolution also requires a TAC to be set, but this does not have to be until 2024. ISSF, 2023a concludes that a rebuilding plan is in place but as it has not yet been applied there is no evidence that it is likely to be successful.</p>	

						<p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>Continue to advocate for effective action to rebuild Yellowfin and Bigeye tuna stocks.</li> </ul>
	Management	1.2.1	Harvest Strategy	<60	60-79	<p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b> The IOTC harvest strategy for Yellowfin tuna currently consists of monitoring, stock assessment and interim limit and reference points.</p> <p>1.2.1a) Based on the 2021 stock assessment which concluded that the current biomass is not sufficient to sustain MSY, the harvest strategy is not expected to achieve management objectives. <b>(SG&lt;60)</b></p> <p>1.2.1b) The harvest strategy is not likely to work based on prior experience (current status of the stock). <b>(SG&lt;60)</b></p> <p>1.2.1c) Monitoring is in place in the form of stock assessments which can be used to assess whether the harvest strategy is working. <b>(SG 60)</b></p> <p>1.2.1d) Currently a management procedure is in development which has suggested objectives of SB exceeding SBMSY in 50% of simulations within 10 and 15 years (and allowing for a TAC to be set every 3 years with &lt;15% annual change). <b>(SG&lt;100)</b></p> <p>1.2.1e) This does not need to be scored as sharks are not a target species. <b>[not scored]</b></p> <p>1.2.1f) Discards for yellowfin tuna are thought to be low. Observer data specifically from Taiwanese vessels found that around 1.5% of Yellowfin are discarded.</p>
				<60	>80	<p><b>Bigeye tuna (<i>Thunnus obesus</i>)</b> Resolution 22/03 sets out a management procedure for bigeye which sets an objective of the stock status to be in the Kobe green quadrant over 60% of the time and includes reference points (Detailed in Resolution 15/10) and a 3-year TAC setting procedure with maximum annual 15% change in TAC.</p> <p>1.2.1a) The IOTC harvest strategy set out in Resolution 22/03 has the potential to be responsive to the stock. (SG 80)</p> <p>1.2.1b) The harvest strategy within Resolution 22/03 will not be fully implemented until the first TAC is set in 2024 so there is no evidence yet that it is achieving its objectives. (SG60-80)</p> <p>1.2.1c) Monitoring is in place in the form of stock assessments which can be used to assess whether the harvest strategy is working. (SG 60)</p> <p>1.2.1d) As it has not yet been fully implemented, the management procedure has not yet been fully tested or evaluated (SG&lt;100)</p> <p>1.2.1e) This does not need to be scored as sharks are not a target species. [not scored]</p>

[Consistent with ISSF, 2023b]

				60-79	60-79	<p>1.2.1f) Discards for Bigeye tuna are thought to be low. Observer data specifically from Taiwanese vessels found that around 4.7% of Bigeye are discarded.</p> <p><b>Albacore (<i>Thunnus alalunga</i>)</b>  The IOTC harvest strategy for Albacore currently consists of monitoring, stock assessment, management resolutions and interim limit and reference points. Management Resolutions include: 15/11 on the limitation of fishing capacity; 14/02 for the conservation and management of tropical tunas in the IOTC area; Resolution 14/05 on the record of fishing vessels; and 13/09 on the conservation of Albacore in the IOTC area.</p> <p>Currently a management procedure is in development which has tested objectives of the stock status is the Kobe green quadrant over 50%, 60% and 70% of the time; and includes a 3-year TAC setting procedure with maximum annual 15% change in TAC. However, the management procedure has not yet been finalized so it cannot be argued that the strategy is responsive to the stock, or has been fully tested, evaluated or reviewed.</p> <p>1.2.1a) Based on the 2022 stock assessment which concluded that the current biomass is above that which can sustain MSY, but as the management procedure has not been finalised the strategy is not currently responsive to the state of the stock. <b>(SG60)</b></p> <p>1.2.1b) The harvest strategy is likely to work based on prior experience (current status of the stock). <b>(SG80)</b></p> <p>1.2.1c) Monitoring is in place in the form of stock assessments which can be used to assess whether the harvest strategy is working. <b>(SG60)</b></p> <p>1.2.1d) Overall management periodically reviewed within annual Commission meetings where stock management is discussed and new management resolutions agreed, however the specific management strategy for Albacore has not yet been finalized. <b>(SG&lt;100)</b></p> <p>1.2.1e) This does not need to be scored as sharks are not a target species. <b>[not scored]</b></p> <p>1.2.1f) It is likely that there are no discards in the fishery (apart from ETP released species), but further evidence will be needed during the assessment to illustrate this. <b>[not scored]</b></p>
	1.2.2	Harvest control rules and tools	60-79	<60	<p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b>  There are interim target and limit reference points in place as agreed under Resolution 15/10. The <i>target reference points</i> for Biomass (BTarget): BMSY and for Fishing Mortality (FTarget): FMSY. The <i>limit reference points</i> are for biomass limits (BLim): 0.40 BMSY; and for fishing limits (FLim): 1.40 FMSY. There have been no harvest control rules agreed that are expected to reduce the exploitation rate if</p>	

					<p>the limit reference points (or PRI) is approached. This requires the Yellowfin Management Procedure to be finalized and applied.</p> <p>1.2.1a) Generally understood HCRs are in place (in the form of reference points), but they are not well defined that would ensure the exploitation rates is reduced as PRI is approached. <b>(SG&lt;60)</b></p> <p>1.2.1b) Well defined HCRs are not yet in place that are likely to be robust to the main uncertainties <b>(SG&lt;80)</b></p> <p>1.2.1c) There are some tools available to control exploitation (in the form of management resolutions) but there is no evidence to indicate that this is appropriate given that the stock is currently experiencing over-fishing. Management advice from the stock assessment suggests that catch reductions are required to prevent the biomass from declining below MSY in the short term. Management advice from the stock assessment suggests that catches should be reduced below the level of FMSY (403,000t), which would require a 20% reduction from 2017 catch levels. <b>(SG&lt;60)</b></p> <p><b>Big eye tuna (<i>Thunnus obesus</i>)</b> Resolution 22/03 establishes a management procedure for Indian Ocean bigeye tuna. The limit reference points are for biomass limits (BLim): 0.50 BMSY; and for fishing limits (FLim): 1.30 FMSY. It also sets an objective for the stock as well as a TAC allocation as a function of the estimated biomass from the stock assessment. The first TAC is due in 2024/5 and subsequently every 3 years with a maximum change of 15% from the previous TAC.</p> <p>1.2.1a) Well defined HCRs are in place <b>(SG80)</b></p> <p>1.2.1b) The HCRs are likely to be robust to the main uncertainties. <b>(SG80)</b></p> <p>1.2.1c) As the HCRs have not yet been applied there is no evidence that they are appropriate and effective in controlling exploitation, and currently the stock is undergoing overfishing <b>(SG &lt;60)</b></p> <p><b>Albacore (<i>Thunnus alalunga</i>)</b> There are interim target and limit reference points in place as agreed under Resolution 15/10. The <i>target reference points</i> for Biomass (BTarget): BMSY and for Fishing Mortality (FTarget): FMSY. The limit reference points are for biomass limits (BLim): 0.40 BMSY; and for fishing limits (FLim): 1.40 FMSY. There have been no harvest control rules agreed that are expected to reduce the exploitation rate if the limit reference points (or PRI) is approached. This requires the Albacore Management Procedure to be finalized and applied.</p> <p>1.2.1a) Generally understood HCRs are in place (in the form of reference points), but they are not well defined that would ensure the exploitation rates is reduced as PRI is approached. <b>(SG&lt;60)</b></p>
				<p style="text-align: center;"><b>&lt;60</b></p> <p>[Consistent with ISSF, 2023a]</p>	
				<p style="text-align: center;"><b>60-79</b></p> <p>[Consistent with ISSF, 2023a]</p>	



						<p>1.2.1b) Well defined HCRs are not yet in places that are likely to be robust to the main uncertainties. <b>(SG60-79)</b></p> <p>1.2.1c) There are some tools available to control exploitation (in the form of management resolutions) but no evidence that catches have been reduced in the past when advised to do so <b>(SG 60)</b></p> <p><b>Recommendation:</b></p> <ul style="list-style-type: none"> <li>Continue to advocate for finalization and implementation of harvest strategies and harvest control rules for Yellowfin, Big Eye and Albacore tuna.</li> </ul>
		1.2.3	Information and monitoring	>80	>80	<p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b></p> <p>1.2.3a) There is information related to stock structure, productivity and fleet composition available (IOTC, 2021b). <b>(SG 80)</b></p> <p>1.2.3b) UoA removals (catches), length data and catch per unit effort (CPUE) are monitored. The main fishing fleets and gears are known (Longline accounts for around 9%). <b>(SG80)</b></p> <p>1.2.3c) IOTC Resolution 15/02 covers the mandatory statistical reporting requirements of IOTC Contracting Parties and Cooperative Non-Contracting Parties (CPC's), and Resolution 10/08 covers a record of active vessels fishing for tuna and swordfish in the IOTC area. Data for retained catches are generally well known for the major industrial fisheries, but less certain for some smaller longline, coastal and gillnet fleets (IOTC, 2021b). There were also issues reported with the EU-Spain Purse Seine Yellowfin catch reports between 2017 and 2018 due to a new method of processing, but this issue has not yet been resolved (ISSF, 2023a) <b>(SG&lt;80)</b></p> <p><b>Big eye tuna (<i>Thunnus obesus</i>)</b></p> <p>1.2.1a) There is information related to stock structure, productivity and fleet composition available (IOTC, 2017b). <b>(SG 80)</b></p> <p>1.2.1b) The information has been sufficient to be able to evaluate management procedures for IOTC Big eye stocks; however, there are some problems in the availability of catch data and CPUE indices. <b>(SG 80)</b></p> <p>1.2.1c) The Resolution 15/02 covers the mandatory statistical reporting requirements of IOTC Contracting Parties and Cooperative Non-Contracting Parties (CPC's), and Resolution 10/08 covers a record of active vessels fishing for tuna and swordfish in the IOTC area. ISSF, 2023a consider the data to be sufficient to assess fishery removals from the stock. <b>(SG 80)</b></p>
				>80	>80	

				>80	>80	<p><b>Albacore (<i>Thunnus alalunga</i>)</b></p> <p>1.2.1a) There is information related to stock structure, productivity and fleet composition available (<b>SG 80</b>)</p> <p>1.2.1b) UoA removals (catches), length data and catch per unit effort (CPUE) are monitored. Longline accounts for 90% of the catches. The main fleets (Taiwan, China &amp; Japan followed by Indonesia &amp; Malaysia), and main fishing gears (Deep-freezing and fresh tuna longliners) are known. Standardised catch per unit effort indices have improved in recent years (ISSF, 2023a) (<b>SG 80</b>)</p> <p>1.2.1c) IOTC Resolution 15/02 covers the mandatory statistical reporting requirements of IOTC Contracting Parties and Cooperative Non-Contracting Parties (CPC's), and Resolution 10/08 covers a record of active vessels fishing for tuna and swordfish in the IOTC area. ISSF, 2023a considers the information on fishery removals to be sufficient for stock assessments (<b>SG80</b>)</p>
	1.2.4	Assessment of stock status		>80	>80	<p><b>Yellowfin tuna (<i>Thunnus albacares</i>)</b></p> <p>The 2021 stock assessment used Stock Synthesis III (SS3), a fully integrated model that makes use of catch, size frequency, tagging and joint longline CPUE data. A number of improvements have been made from the previous assessment.</p> <p>1.2.4a) The assessment considers the major features <b>SG100</b></p> <p>1.2.4b) The stock assessment allowed estimation of MSC and other reference points <b>SG80</b></p> <p>1.2.4c) The assessment allows for uncertainty to be taken into account. <b>SG80</b></p> <p>1.2.4d) The stock assessment has been reviewed by the Working Party on Tropical Tunas (WPTT). <b>SG80</b></p> <p>1.2.4e) Stock assessments are reviewed by the Working Party on Tropical Tuna (WPTT). (<b>SG 80</b>)</p> <p><b>Big eye tuna (<i>Thunnus obesus</i>)</b></p> <p>The 2022 assessment used Stock Synthesis (SS3) (and SCAS), with the management advice given by the SS3 model. The assessment uses the best estimate of catch data given concerns on reported catch data. Also included changes in estimates of longline selectivity &amp; abundance index. There has been below-average recruitment in recent years.</p> <p>1.2.4a) The assessment considers the major features. (<b>SG 100</b>)</p> <p>1.2.4b) The assessment estimates stock status relative to reference points. (<b>SG 80</b>)</p> <p>1.2.4c) The assessment takes uncertainty into account, but there are still some uncertainties in the primary sources of data that drive the assessment: total catches and CPUE (<b>SG 80</b>)</p>

				>80	>80	<p>1.2.4d) The main assessment based on Stock Synthesis v.3 has been tested with a range of plausible models in order to capture uncertainty. <b>(SG 80)</b></p> <p>1.2.4 e) Stock assessments are reviewed by the Working Party on Tropical Tuna (WPTT). <b>(SG 80)</b></p> <p><b>Albacore (<i>Thunnus alalunga</i>)</b> The assessment uses Stock Synthesis III (SS3): an integrated model which provides advice for all 3 tropical tuna species.</p> <p>1.2.4a) The assessment considers the major features. <b>(SG 80)</b></p> <p>1.2.4b) The assessment estimates stock status relative to reference points. <b>(SG 80)</b></p> <p>1.2.4c) The assessment takes uncertainty into account <b>(SG 80)</b></p> <p>1.2.4d) Due to the uncertainties the assessment is not fully robust.</p> <p>1.2.4 e) Stock assessment is reviewed by the Working Party on Tropical Tuna (WPTT). <b>(SG 80)</b></p>
2	Primary species	2.1.1	Outcome	60-79	<60	<p>According to observer data (2017/8 for 40 Taiwanese and Malaysian vessels) the main primary species is:</p> <ul style="list-style-type: none"> <li>Southern Bluefin Tuna (5.23%) (Using only Taiwanese observer data this comes in at 12.4% of the catch weight)</li> </ul> <p><b>Southern Bluefin Tuna</b> According to the Commission for the Conservation of Southern Bluefin Tuna, despite rebuilding work, the stock remains below the level estimated to produce maximum sustainable yield (MSY). The stock is estimated to be 20% of the Total Reproductive Output of the unfished biomass. This is an improvement from the stock assessment in 2017 which estimated this to be 13%.</p> <p>Other potential main primary species include blue shark (which may need to be considered as an ETP species in MSC Standard v3.0) and Swordfish. Based on observer records for Taiwanese vessels only for 2017/18 the following catch % (based on weight) were found:</p> <ul style="list-style-type: none"> <li>Swordfish (7.8%)</li> <li>Blue Shark (7.6%)</li> </ul> <p>Potential minor primary species include Atlantic blue Marlin; Striped Marlin, Indo-Pacific Sailfish; Black Marlin and Skipjack tuna.</p> <p><b>Recommendation:</b></p> <ul style="list-style-type: none"> <li>Advocate for improved management and status of Southern Bluefin Tuna</li> </ul>

		2.1.2	Management strategy	60-79	60-79	<p>The Commission for the Conservation of Southern Bluefin Tuna manages the stock and has set a management procedure which sets an objective of a 50% probability of achieving a biomass level of 30% of the original spawning stock biomass by 2035.</p> <p>The Management strategy is therefore in place but while stocks status has improved from a very low level it is not yet achieving its objectives given the state of the Southern Bluefin Stock.</p>
		2.1.3	Information	>80	<60	<p>There is observer data available for 2017/2018 for 40 Taiwanese and Malaysian vessels, but this is insufficient to give a clear view of the primary species over the entire fishery, especially given the change in the vessel list. It is estimated that there is about 12% observer coverage throughout the vessels within the FIP. There was a gap in observer coverage during Covid between 2020-22 but observers have been back on board since the beginning of 2023.</p> <p>Recommendation:</p> <ul style="list-style-type: none"> <li>• Representative observer or EM data is required to analyze and confirm the main primary species.</li> </ul>
Secondary species		2.2.1	Outcome	<60	<60	<p>According to observer data (2017/8 for 40 Taiwanese and Malaysian vessels) the main secondary species are:</p> <ul style="list-style-type: none"> <li>• Oil fish (26.3%) [unless this is treated as a target P1 species]</li> <li>• Escolar (12.7%)</li> </ul> <p><u>Oil fish (<i>Ruvettus pretiosus</i>)</u>  A PSA was conducted for Oil fish concluded that it has a low risk category and would score 80 or above. <b>SG80</b>  Note: Oil fish is such as high percentage as the FIP previously included Malaysian-flagged vessels that were targeting oil fish and selling any tuna by-catch to FCF. These vessels are no longer on the vessel list but may reenter the FIP at some point.</p> <p><u>Escolar (<i>Lepidocybium flavobrunneum</i>)</u>  Escolar stocks have not been assessed. Fishsource score the current stock health as &lt;60. (FishSource, 2023)</p> <p>However, taking the Taiwanese vessel data on it's on the following main secondary species were also identified: Opah (<i>Lampris guttatus</i>) and Longnosed lancet fish (<i>Alepisaurus ferox</i>).</p> <p><b>Recommendations:</b></p>

						<ul style="list-style-type: none"> <li>Conduct a PSA for Escolar and for any other main secondary species that are identified.</li> </ul>
		2.2.2	Management strategy	<60	>60	This is scored with precaution as it is unclear from the data what are the main secondary species.
		2.2.3	Information	<60	>60	<p>There is observer data available for 2017/2018 for 40 Taiwanese and Malaysian vessels, but this is insufficient to confirm which are the main secondary species. It is estimated that there is about 12% observer coverage throughout the vessels within the FIP. There was a gap in observer coverage during Covid between 2020-22 but observers have been back on board since the beginning of 2023.</p> <p><b>Recommendation:</b></p> <ul style="list-style-type: none"> <li>Representative observer or EM data is required to analyze and confirm the main secondary species.</li> </ul>
	ETP species	2.3.1	Outcome	<60	>60	<p>A range of potential ETP species have been identified as follows based on available observer data. A broad classification of ETP species has been used here in line with the new MSC v3 standard.</p> <p><b>Shark species:</b></p> <ul style="list-style-type: none"> <li>Longfin mako shark</li> <li>Shortfin mako shark</li> <li>Silky shark (250 retained in observer data for Taiwanese vessels 2017/18)</li> <li>Crocodile shark</li> <li>Pelagic thresher shark</li> <li>Oceanic whitetip shark</li> <li>Bigeye Thresher shark</li> <li>Tiger Shark (11 retained in observer data for Taiwanese vessels 2017/18)</li> <li>Galapagos Shark</li> <li>Velvet dogfish</li> <li>Stingrays</li> <li>Other sharks</li> </ul> <p>Turtle species:</p> <ul style="list-style-type: none"> <li>Loggerhead turtle</li> </ul> <p>Cetaceans:</p> <ul style="list-style-type: none"> <li>False Killer Whale</li> </ul> <p>Seabirds (where vessels fish in areas below 25°S):</p>

						<ul style="list-style-type: none"> <li>Albatrosses (e.g., Wandering Albatross, Indian nosed Albatross, Shy Albatross, Grey-headed Albatross, Black-browed Albatross, Light-mantled Albatross) (179 Albatross caught by selected Taiwanese vessels as shown in 2016/17 Observer data)</li> <li>Petrels (e.g., white chinned petrel)</li> <li>Great Skua</li> </ul>
		2.3.2	Management strategy	<60	>60	<p>There are measures in place that could be considered likely to work based on plausible argument, however there is not yet evidence that measures are being implemented successfully.</p> <p>At the <i>regional level</i>, IOTC has a number of resolutions covering ETP species including:</p> <p><u>Sharks:</u></p> <p>Resolution 18/02 On Management Measures for the Conservation of Blue Shark Caught in Association with IOTC Fisheries: to provide management advice for blue shark</p> <p>Resolution 17/05 On the conservation of sharks caught in association with fisheries managed by IOTC (Replaces Resolution 13/06): to restrict shark finning</p> <p>Resolution 13/05 On the conservation of whale sharks (<i>Rhincodon typus</i>): to ensure best practice avoidance, handling and release</p> <p>Resolution 12/09 On the conservation of thresher sharks (family <i>Alopiidae</i>) caught in association with fisheries in the IOTC area of competence: prohibits capture</p> <p>Resolution 19/03 On the Conservation of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence: prohibits capture</p> <p>There is also Resolution: 12/06 which covers seabirds; and 13/04 covers Cetaceans and 12/04 for Turtles.</p> <p>At the <i>national level</i>:</p> <ul style="list-style-type: none"> <li>Shark finning is not banned in Malaysia, but there is a revised National Plan of Action for the Conservation and Management of Shark (2017) and Marine Turtles (2005). However, there are no specific actions within this plan that have implications for the longline fleet. (<a href="https://www.iotc.org/science/table-progress-implementing-npoa-sharks-npoa-seabirds-and-fao-guidelines-reduce-sea-turtle-mortality">https://www.iotc.org/science/table-progress-implementing-npoa-sharks-npoa-seabirds-and-fao-guidelines-reduce-sea-turtle-mortality</a>)</li> <li>Taiwan has a revised national plan of action for sharks (2012) and seabirds (2014). The Wildlife Protection Act (2013) protects marine turtles and requires all vessels to carry line cutters and follow best practice in handling and release of marine turtles. Legislation also</li> </ul>

					<p>prohibits making sets on cetaceans and requires their release. The Distant Waters Fisheries Act (2016) allows the IOTC resolutions to be incorporated into national legislation.</p> <ul style="list-style-type: none"> <li>• Seychelles has a national plan of action for the conservation and management of sharks (2007). It also has a Fisheries (Shark Finning) Regulations 2006: which forbids the practice of finning by foreign vessels licensed to operate in Seychelles EEZ by requiring vessels to land fin to the quantity of no more than 5% of the mass of dressed shark carcass.</li> <li>• It is reported by the IOTC that Mauritius developed a NPOA for sharks in 2016 but this could not be accessed.</li> <li>• It is reported by the IOTC that Oman has started development on a NPOA for sharks, but this could not be accessed.</li> <li>• China and Madagascar have not developed a NPOA for Sharks. (see: <a href="https://iotc.org/science/table-progress-implementing-npoa-sharks-npoa-seabirds-and-fao-guidelines-reduce-sea-turtle-mortality">https://iotc.org/science/table-progress-implementing-npoa-sharks-npoa-seabirds-and-fao-guidelines-reduce-sea-turtle-mortality</a>)</li> </ul> <p>At the <i>fishery level</i> an ETP Management Strategy has been developed (Key Traceability, 2020a) which ensures that for:</p> <p><u>Sharks</u></p> <ul style="list-style-type: none"> <li>• The fishery does not target sharks</li> <li>• Shark lines are prohibited</li> <li>• Ocean whitetips and silky sharks are not retained</li> <li>• Shark finning is prohibited, and all allowable sharks are landed with fins attached</li> <li>• Shark catches are recorded</li> </ul> <p><u>Turtles:</u></p> <ul style="list-style-type: none"> <li>• Only circle hooks and monofilament are line are used as well promoting the transition to use fish as bait rather than squid</li> </ul> <p><u>All ETP</u></p> <ul style="list-style-type: none"> <li>• Skippers are training and given guidance on best-practice handling and release of all ETP Species</li> </ul> <p><u>Skipper training:</u> While only 4 skippers have been trained to date, there is a plan for Key Traceability to deliver an in-person (via a training workshop) and online training programme across the fleet, as well as conducting audits of by-catch mitigation tools on all the vessels.</p> <p>Recommendations:</p>
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						<ul style="list-style-type: none"> <li>• Include the mandatory use of tori lines on all vessels to reduce seabird bycatch</li> <li>• Ensure skipper training is delivered to all vessel captains and maximize the number of skippers that receive in-person training</li> <li>• Ensure via audits that by-catch mitigation measures and identification posters are available on all vessels</li> <li>• Advocate for all flag states in the FIP to have and implement national plans of actions on sharks and seabirds</li> </ul>
	2.3.3	Information	<60	>60	<p>There is observer data available for 2017/2018 for 40 Taiwanese and Malaysian vessels, but only the data of the Taiwanese vessels was available to analyze for the number of ETP species retained and discarded. It is estimated that there is about 12% observer coverage throughout the vessels within the FIP. There was a gap in observer coverage during Covid between 2020-22 but observers have been back on board since the beginning of 2023.</p> <p><b>Recommendation:</b></p> <ul style="list-style-type: none"> <li>• Representative observer or EM data is required to confirm ETP species and analyze the numbers retained or discarded.</li> </ul>	
Habitats	2.4.1	Outcome	>80	>80	The fishery takes place in deep water and does not interact with the benthos or other habitats. This could be evidenced by comparing VMS data of fleet movements, habitat maps and any information about hook loss by vessel.	
	2.4.2	Management strategy	>80	>80	The current management of the fishery ensures that a level of 80 is achieved for Habitat Outcome.	
	2.4.3	Information	>80	>80	There is adequate information available to illustrate that the fishery does not interact with the benthos or other habitats. This could achieve a higher score if the impacts were quantified through analysis of VMS data of fleet movements, habitat maps and any information about hook loss by vessel.	
Ecosystem	2.5.1	Outcome	>80	>80	It is unlikely that the UoA disrupts the key elements underlying ecosystem structure and functioning in causing serious and irreversible harm. Tuna are high tropic level predators and so there is a possibility that their removal could lead to tropic cascades that result in dramatic changes throughout the food web. However, it is considered that this fishery would not have a direct impact, taking only a small proportion of total removals.	
	2.5.2	Management strategy	>80	>80	IOTC management resolutions cover the relevant target, bycatch and ETP species. There is a working party on ecosystems and bycatch (WPEB), which is responsible for reviewing and analyzing matters relevant to bycatch, byproduct and non-target species that are affected by IOTC fisheries (e.g., sharks, marine turtles and cetaceans) and for developing mechanisms to integrate ecosystem considerations into scientific advice.	



		2.5.3	Information	>80	>80	The WPEB has an annual meeting where updated information on stock status of by-catch species and ecosystems are presented: <a href="https://iotc.org/node/3384">https://iotc.org/node/3384</a> .
3	Governance and Policy	3.1.1	Legal and customary framework	60-79	>80	<p><b>IOTC</b> The Indian Ocean Tuna Commission (IOTC) is the Regional Fisheries Management Organisation (RFMO) responsible for the management of tuna and tuna-like species within the Indian Ocean. It works to improve management through the adoption of resolutions and recommendations. Resolutions require a 2/3rd majority to pass through and are legally binding (unless there is a specific objection on the part of a member). Recommendations are voluntary and require only a simple majority to be passed. The IOTC framework provides binding procedures governing cooperating with other parties. The IOTC system provides a transparent mechanism for the resolution of legal disputes and observation of legal rights through the annual commission meetings.</p> <p><b>Flag states</b> Oman and Madagascar score 60-79 as there is insufficient evidence of consideration for the customary framework. China, Malaysia, Mauritius, Oman, Taiwan and Seychelles score &gt;80.</p>
		3.1.2	Consultation, roles and responsibilities	60-79	>80	<p><b>IOTC</b> The functions, roles and responsibilities of the commission and the member countries have been identified in various Articles of the Convention. [ISSF, 2023a only score this 60 as they argue that flag states do not fully fulfil their responsibilities – but I consider this is covered under 3.2.3: compliance].</p> <p><b>Flag States</b> Malaysia and Madagascar score 60-79 as roles and responsibilities not fully defined. Oman, China, Mauritius, Seychelles and Taiwan score &gt;80.</p>
		3.1.3	Long term objectives	>80	>80	<p><b>IOTC</b> The various management and conservation resolutions and recommendations of the IOTC describe the IOTC long-term objectives.</p> <p><b>Flag states</b> China, Malaysia and Oman score 60-79 as they have some evidence of long-term objectives, but they are not fully articulated or fully include the precautionary principle. Taiwan, Seychelles, Mauritius and Madagascar score &gt;80.</p>

Fishery specific management system	3.2.1	Fishery specific objectives	>80	>80	<p><b>IOTC</b> There are interim target and limit reference points in place for Albacore, Big eye and Yellowfin tuna as agreed under Resolution 15/10. A Management Procedure has been developed for Bigeye tuna (Resolution: 22/3) and is in development for Albacore and Yellowfin. These include reference points, harvest control rules and management decisions. Short and long-term objectives are therefore explicit within the fishery (but are still in development).</p> <p><b>Flag states</b> Madagascar scores &lt;60 as there is no evidence of fisheries specific objectives for these tuna species. China scores 60-79. Mauritius, Seychelles and Taiwan score &gt;80. Oman and Malaysia are not scored as the fishery does not take place in their EEZs.</p>
	3.2.2	Decision making processes	60-79	>80	<p><b>IOTC</b> Within the IOTC there are established decision-making processes, as outlined within the Convention Articles. There is evidence within Commission annual meeting reports that decision-making responds to serious and other important issues, for instance all stock-assessment results and by-catch issues are discussed. Recommendations within stock assessment results incorporate the precautionary approach. The IOTC has a dispute procedure (IOTC, 2015) so a dispute cannot be resolved it can be referred to the International Court of Justice. This procedure has not yet been invoked.</p> <p><b>Flag States</b> Malaysia scores &lt;60 as there is no evidence of transparent decision making processes. China, Seychelles, Oman, Mauritius and Madagascar score 60-79 and Taiwan scores &gt;80.</p>
	3.2.3	Compliance and enforcement	60-79	60-79	<p><b>IOTC</b> MSC mechanisms exist but there is not yet a system implemented so that all the management measures are fully enforced. Sanctions exist but these are not consistently applied. There is a compliance committee and some evidence to suggest improved compliance but there is insufficient data to have a high degree of certainty and not all fishing nations are party to IOTC.</p> <p><b>Flag States</b> Oman scores &lt;60 as there is insufficient evidence of an effective compliance system for their flagged vessels. China, Malaysia and Madagascar score 60-79 and Taiwan, Seychelles and Mauritius pass at &gt;80.</p>

		3.2.4	Management performance evaluation	>80  <60	>80  <60	<p><b>IOTC</b> IOTC has means to evaluate the management system through committees and working groups. There was also an external Performance Review in 2015.</p> <p><b>Flag states</b> Oman scores &lt;60 as there is no evidence that their fisheries management is evaluated. China and Taiwan achieved conditional passes (60-79) and Malaysia, Seychelles and Mauritius achieve &gt;80.</p>
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## Environmental Workplan Results

Result	Related Action on Fishery Progress	Related MSC Performance Indicator	Explanation
Advocacy to IOTC to improve yellowfin stock status and the rebuilding plan.	1.1. Stock Status and Rebuilding for Indian Ocean yellowfin tuna	1.1.1 1.1.2	The FIP has been active in advocating to the IOTC and via Flag States to take urgent action to improve the stock status and the rebuilding plan. A position statement in May 2002 requested that Resolution 21/21 to ensure an effective rebuilding plan for Yellowfin tuna is adopted without delay (Key Traceability, 2022).
Advocacy to the IOTC for development of HCRs for all tropical tuna species	1.2 Promote the development of a well-managed harvest strategy and harvest control rules (HCRs) for albacore, bigeye and yellowfin tuna.	1.2.1 1.2.2	The FIP has advocated to the IOTC (Key Traceability, 2002) requesting that management procedures and harvest control rules are developed for yellowfin and bigeye tuna, as well as Management Strategy Evaluations for all tropical tunas in the Indian Ocean.
Shark Finning Policy and ETP Management Strategy developed and updated to reflect MSC Standard v.3.0	2.1 ETP Species Outcome, Management and Information	2.3.1 2.3.2	<p>A Shark Finning and ETP Management Strategy have been developed integrating FCFLtd previous shark-finning policy (Key Traceability, 2020). It requires all vessels in the fishery to:</p> <ol style="list-style-type: none"> <li>1. Not to actively target sharks</li> <li>2. Not set shark lines on buoys</li> <li>3. Prohibits the use of wire traces</li> <li>4. Prohibits the practice of shark finning</li> <li>5. Not to retain oceanic whitetip or silk sharks</li> <li>6. Fins naturally attached for any shark landed</li> <li>7. Record all sharks and sea turtles that are landed</li> <li>8. Use only circle hook</li> <li>9. Use only monofilament lines</li> <li>10. Promotes the transition of fish rather than squid for bait</li> <li>11. When feasible, set hooks (40-100m)</li> <li>12. Do not trade with companies that do not observe the above practices</li> <li>13. Promote best practice ETP handling and release</li> </ol> <p>The FIP has also advocated to the IOTC (Key Traceability, 2022) that Resolution 17/05 is amended so that it requires fins to be naturally attached for all sharks.</p> <p>Recommendation:</p> <ul style="list-style-type: none"> <li>• Include the mandatory use of tori lines on all vessels to reduce seabird bycatch</li> </ul>

11% of FIP Vessels are members of the ISSF PVR Register	2.1 ETP Species Outcome, Management and Information	2.3.1 2.3.2	There are 24 vessels of IO FIP (11%) registered on ISSF PVR. As part of the programme, these vessels will be audited on an annual basis to ensure they are compliant with ISSF's no-shark finning policy.  <b>Recommendation:</b> <ul style="list-style-type: none"> <li>• Work towards all vessels becoming members of the PVR Register</li> </ul>
7% of FIP Vessels were audited last year as part of FCF Ltd Due Diligence Programme			15 vessels (7% of FIP vessels) were audited last year as part of the FCF's due diligence programme. This includes audits of environmental (includes some by-catch mitigation), social and health and safety issues. The environmental element includes review of by-catch mitigation measures.  <b>Recommendation:</b> <ul style="list-style-type: none"> <li>• Provide results of the due diligence on implementation of by-catch mitigation measures</li> </ul>
FCF engagement with suppliers and stakeholders to share best practice in ETP Management.			Meetings with stakeholders and suppliers in April 2022 to raise awareness of best-practice in ETP management and receive feedback on challenges for implementation. One of the challenges of the FIP is communicating with all the associated vessels.
Skipper training on the Shark Policy and ETP Management Strategy			Skipper training with 4 participants (fleet managers and skippers) undertaken in November 2022 covering: Species ID, By-catch mitigation and best practices, data collection, EM, waste management and social/labour issues.  <b>Recommendation:</b> <ul style="list-style-type: none"> <li>• Complete skipper training for the rest of skippers and ensure this is updated annually.</li> </ul>
Audits of by-catch mitigation measures conducted on a handful of vessels			A few vessels have been audited for by-catch mitigation measures by Key Traceability.  <b>Recommendation:</b> <ul style="list-style-type: none"> <li>• Ensure via audits that by-catch mitigation measures and identification posters are available on all vessels</li> </ul>
Advocacy to the IOTC to improve FAD management	2.1 ETP Species Outcome, Management and Information	2.3.2	The FIP has submitted position statements in May 2022 (Key Traceability, 2022) and January 2023 (Key Traceability, 2023) requesting improvements on FAD management. The position statement in May 2022 requested science-based limits on FADs and a timeline to transition to 100% biodegradable FADs. In addition to this, the January 2023 position statement requested the IOTC to use FAD tracking data for scientific purposes and development of FAD marking, tracking and recovery policies and guidelines.

Selected observer data obtained for the fishery			Selected observer data for 2016/17 covering 40 vessels flagged to Taiwan and Malaysia has been obtained and analyzed to determine the proportions of by-catch and ETP species.
Installation and trailing of Electronic Monitoring (EM) on 4 vessels	2.1 ETP Species Outcome, Management and Information	2.3.3	<p>The FIP has taken part in the TNC Bulk Procurement deal and has succeeded in having EM installed on 4 vessels and data from this trial will be collected and analyzed by the end of 2023.</p> <p>From this analysis it will be possible to measure the following indicators:</p> <ul style="list-style-type: none"> <li>• Catch numbers</li> <li>• Catch composition - %</li> <li>• 30s clips of each ETP interaction</li> <li>• Use of mitigation measures e.g., tori lines</li> <li>• Bait species and usage</li> <li>• Hook Nos.</li> <li>• Barrel Nos. – can be used to calculate CPUE</li> <li>• Potentially can also be used to assess waste and social/labour issues.</li> </ul> <p>There is an aim to install EM on 5-10% of vessels by the end of 2023. It will then be the aim to analyze 20% of hooks building towards 30% as required by the MSC Standard v3.</p>
Advocacy to the IOTC to accelerate work on EM minimum standards			The FIP has advocated to the IOTC (Key Traceability, 2022) that minimum standards for EM are adopted in 2023.
Legal and customary framework improvements for Seychelles and Mauritius Coastal states	3.1 Legal and customary framework for IOTC, Oman, Seychelles, Mauritius and Madagascar	3.1.1	MSC score for Legal and customary framework improved (moved from conditional pass to unconditional pass) for Seychelles and Mauritius aligned with the ANABAC Indian Ocean Purse Seine Skipjack Tuna Fishery and the CFTO Indian Ocean Purse Seine Skipjack Fishery Surveillance Audit.
Consultation, Roles and Responsibilities improvements for the IOTC, China, Seychelles and Mauritius.	3.2 Consultation, Roles and Responsibilities for IOTC, China, Seychelles, Mauritius, Malaysia and Madagascar	3.1.2	MSC score for Consultation, Roles and Responsibilities improved (moved from conditional pass to unconditional pass) for the IOTC, China, Seychelles and Mauritius aligned with the ANABAC Indian Ocean Purse Seine Skipjack Tuna Fishery and the CFTO Indian Ocean Purse Seine Skipjack Fishery Surveillance Audit.
Long term objectives improvements for Mauritius	3.3. Long Term Objectives for Oman, China and Mauritius	3.1.3	MSC score for Long Term Objectives improved (moved from conditional pass to unconditional pass) for Mauritius aligned with the CFTO Indian Ocean Purse Seine Skipjack Fishery Surveillance Audit.

## Supporting References

*Provide a list of references that are referred to within this document.*

Fishsource (2023) [https://www.fishsource.org/fishery\\_page/3332](https://www.fishsource.org/fishery_page/3332) (Accessed April 2023)

IOTC Conservation and Management Measure Resolutions: <https://iotc.org/cmms>

IOTC (2022a) APPENDIX 4 EXECUTIVE SUMMARY: YELLOWFIN TUNA (2022) \_REV1

IOTC (2022b) APPENDIX 2: EXECUTIVE SUMMARY: BIGEYE TUNA (2022) \_REV1

IOTC (2022c) APPENDIX 1 EXECUTIVE SUMMARY: ALBACORE (2022) \_REV1

ISSF (2023a) AN EVALUATION OF THE SUSTAINABILITY of Global Tuna Stocks Relative to Marine Stewardship Council Criteria ISSF Technical Report 2023-02.

ISSF (2023b) Status of the World Fisheries for Tuna: March 2023 ISSF Technical Report 2023-01

Key Traceability (2020) Indian Ocean tuna - longline (Bumble BeeFCF Co., Ltd) FIP: Shark and Sea Turtle Conservation Policy December 2021

Key Traceability (2022) Indian Ocean tuna - longline (Bumble Bee & FCF) FIP Position Statement Ahead of the IOTC Annual Meeting 2022 Drafted with agreement from all Indian Ocean tuna - longline (Bumble Bee & FCF) FIP

Key Traceability (2023) Indian Ocean tuna - longline (Bumble Bee & FCF) FIP Position Statement Ahead of the IOTC Special Session 2023