SUSTAINABLE INDIAN OCEAN TUNA INITIATIVE (SIOTI)

FISHERIES IMPROVEMENT PROJECT

SHARK FINNING RISK ASSESSMENT

REVISED FINAL REPORT

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REPORT INFORMATION

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Glossary of Acronyms

ANABAC	Asociación Nacional de Armadores de Buques Atuneros Congeladores (Spain)
ATF	Authorizations to Fish – national fishing licenses
CAB	Conformity Assessment Body (MSC)
CMM	Conservation and Management Measure
EMS	Electronic Monitoring System
EU	European Union
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization of the United Nations
FIP	Fisheries Improvement Project
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action
IHS	IHS Maritime (maintaining World Register of Ships)
IRD	Institut de Recherche pour le Développement
ISSA	International Seafood Sustainability Association
ISSF	International Seafood Sustainability Foundation
IUU	Illegal, Unreported, and Unregulated (Fishing)
LL	Longline fishing gear
MSC	Marine Stewardship Council
OCUP	Observateurs Communs Uniques et Permanent (French international fisheries observer program)
OPAGAC	Organización de Productores Asociados de Grandes Atuneros Congeladores (Spain)
ORTHONGEL	Organisation des Producteurs de Thon Congelé et Surgelé (France)
PMSA	Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing
PS	Purse Seine fishing gear
PVR	ProActive Vessel Register (ISSF)
RFMO	Regional Fisheries Management Organization
SFA	Seychelles Fishing Authority
SIOTI	Sustainable Indian Ocean Tuna Initiative
TPS	Tuna Purse Seine
tRFMO	RFMOs managing tuna and tuna-related species
UoA	Unit of Assessment (MSC)
UoC	Unit of Certification (MSC)
WPDCS	Working Party on Data Collection and Statistics (IOTC)
WPEB	Working Party on Ecosystems and Bycatch (IOTC)
WPICCM	Working Party on Implementation of Conservation and Management Measures (IOTC)

Sustainable Indian Ocean Tuna Initiative (SIOTI) Fisheries Improvement Project (FIP)

Shark Finning Risk Assessment

Executive Summary

The Sustainable Indian Ocean Tuna Initiative (SIOTI) is a Fisheries Improvement Project (FIP) comprising the major purse seine fleets and tuna processors operating in the Area of Competence of the Indian Ocean Tuna Commission (IOTC). SIOTI's goal is to enhance the sustainability of tuna purse seine fisheries in the Indian Ocean with the ultimate aim of meeting the Marine Stewardship Council (MSC)'s certification standards. Among these standards is a requirement that shark finning - the practice of removing the fins of a shark or shark-like batoid and discarding the finned carcass at sea – not be taking place in the Unit of Assessment fishery.

Shark finning has been implicitly prohibited under the IOTC since 2005, through a full-utilization requirement for all sharks. However, the effectiveness of this measure, in terms of the extent of implementation and level of compliance, has not until very recently been assessed. The low level of onboard observer coverage, low level of reporting on shark catches and discards, and an oversight in IOTC reporting requirements have resulted in a situation where it is virtually impossible based on available data to assess the extent of shark finning in the Indian Ocean. This is, however, not the case with the SIOTI fleet, whose standards and procedures against shark finning and towards safe handling of sensitive species caught incidentally in their fishing operations offer an example that other fleets would do well to follow.

A SIOTI pre-assessment and a scoping report for the Indian Ocean tuna purse seine fishery, benchmarked to the MSC Standard, identified the need for additional supporting information on compliance with IOTC and national shark finning regulations applying to the SIOTI fishery. To further demonstrate that shark finning cannot take place in the Unit of Assessment, SIOTI commissioned this Risk Assessment of the potential for non-compliance with prevailing shark finning regulations, to document gaps and weaknesses and recommend options for strengthening management efforts against shark finning and ensuring that adherence to shark finning prohibitions is maintained.

Using the 2018 MSC Public Certification Report for the Echebastar TPS fleet, part of the SIOTI fleet, as a guide, a literature review was undertaken, primarily of IOTC documentation, including national and other reports submitted to the IOTC Compliance Committee and Scientific Committee, reports of the IOTC Working Party on Ecosystems and Bycatch, and several reports submitted to the IOTC Working Party on Data Collection and Statistics, but also of relevant third-party audit reports prepared for the International Seafood Sustainability Foundation, of which several SIOTI partners are member. Interviews were conducted with key SIOTI actors, most notably the three producer organizations representing the majority of the SIOTI fleet, and AZTI Tecnalia, which implements and manages the data from the observer program for the Spanish and Spanish-Seychellois TPS fleets. In addition, a review was undertaken of the policies adopted by the SIOTI producer organizations and SIOTI partners regarding prohibiting shark finning and how those policies provide for compliance monitoring.

It was not possible for this Risk Assessment to address the legal and policy frameworks and operations of the non-SIOTI TPS fleets operating in the Indian Ocean, as too many countries are involved and the information required is very dispersed and generally not readily available. Instead, this report focuses on the legal and policy shark finning frameworks applying to the SIOTI fleet, as well as compliance monitoring and other aspects of the operations of the fleet.

Overall, this Risk Assessment has concluded that there is low risk of shark finning occurring in the SIOTI fleet. The flag States for the 42 TPS vessels that comprise the fleet – EU, Mauritius, and Seychelles – have in

place legally enforceable measures against shark finning; the EU requirement that sharks be landed with "fins naturally attached" is the best-practice standard for ensuring compliance with this measure. The entirety of the SIOTI fleet is operating with explicit policies and procedures against shark finning and, in addition have instituted: 100% onboard observer coverage funded largely by industry; a cadre of, and ongoing training for, onboard fisheries observers; a fleet-wide collaborative set of protocols, methods, and standards for fishing operations, including approaches to minimize bycatches of sensitive species, such as cetaceans, seabirds, marine turtles, and elasmobranchs, and best practices for handling and release of such species, including to maximize survivorship. The full set of factors supporting this Risk Assessment are presented in this report.

While the risk of shark finning in the SIOTI fleet has been found to be low, there are a number of weaknesses and gaps that SIOTI should consider addressing, with their fleets, within the IOTC, and, possibly, with authorities of the port States where their catches are landed. Recommendations set forth in the report include: revision of policies and laws, as necessary, to incorporate the best-practice requirement that all sharks be landed with "fins naturally attached" so as to facilitate monitoring and enforcement; improving IOTC measures and reporting requirements to enable assessment of the extent of implementation of and improve compliance with the shark finning prohibition; improving the rate of inspection of transshipments and landings in port; and, following the standard established by OPAGAC—ANABAC, putting in place – and articulating – policies and procedures across the SIOTI fleet for regular analysis of observer data and associated reports for monitoring compliance with prevailing finning prohibitions and other policies and procedures for handling of sharks and other elasmobranchs.

The SIOTI TPS fleet represents a segment of the Indian Ocean TPS fleet and a very small segment of the overall Indian Ocean fishing fleet. However, the standards and procedures already adopted and enhancements recommended here, particularly if SIOTI could undertake technical exchanges and broader capacity-building efforts, could have positive impacts far beyond the fleet in favor of Indian Ocean tuna stocks, sharks and other bycatch species, and the rest of the Indian Ocean fleet that depends on these resources economically and for food security.

Background

The Sustainable Indian Ocean Tuna Initiative (SIOTI) is a large-scale Fisheries Improvement Project (FIP) comprising the major purse seine fleets and tuna processors operating in FAO Fishery Areas 51 (Western Indian Ocean) and 57 (Eastern Indian Ocean), the Area of Competence of the Indian Ocean Tuna Commission (IOTC). The FIP is supported by the Government of the Seychelles and WWF through a formal Memorandum of Understanding concluded in October 2016 and, through a partnership agreement signed in March 2017, by 17 industry partners. The goal of the SIOTI FIP is to support improvement in the management of tuna fisheries in the Indian Ocean so that, in the future, consumers can be assured that the purse-seine tuna they purchase has been harvested sustainably. The ultimate aim is to meet the highest standards of sustainable fishing, such as the Marine Stewardship Council (MSC) standard.

The SIOTI FIP considers three pelagic tuna species – skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*) and bigeye tuna (*Thunnus obesus*) – that are targeted in the Indian Ocean by large-scale (e.g., >60 m) tuna purse seine (TPS) vessels. These TPS net free-schooling tuna, or schools aggregating naturally around floating objects, including purpose-built fish-aggregating devices (FADs). The majority of the SIOTI TPS fleet, operated by or on behalf of the SIOTI partners, is registered in the European Union (EU) by France, Italy, and Spain, while the remaining vessels are registered in the Seychelles and Mauritius. Beyond the SIOTI TPS fleet are TPS vessels registered to a range of countries, including Iran, Japan, and Republic of Korea. The tuna stocks targeted by the SIOTI fleet are also targeted on the high seas and within EEZs using other gears (e.g., longlines, gillnets) that are deployed by an even larger number of vessels registered to a larger number of countries.

Although TPS vessels target and set on tuna, these nets, and the fish aggregating devices (FADs) around which they are often deployed, also catch unintentionally a range of other species, including elasmobranchs[1]. A recent analysis of data on bycatch in Indian Ocean fisheries (Garcia and Herrera, 2018) estimated that TPS fisheries in the IOTC area catch 316mt of elasmobranchs per year out of a total estimated annual catch of 200,000mt of elasmobranchs in all Indian Ocean fisheries. Silky sharks are the main elasmobranch species caught by TPS, representing over 90% of the total catches of elasmobranchs for this gear; other elasmobranch species caught include mantas and stingrays and the oceanic whitetip shark (a prohibited species in the IOTC Area). A more recent analysis of SIOTI FIP observer data found significantly higher elasmobranch catches in the SIOTI fleet: the free-school component of the SIOTI catches comprised 12.8% sharks (11.6% silky shark) and 7% manta and mobulid rays – 20% of total catches by weight (S. Fowler, pers. comm., 2019).

Shark finning, the practice of removing the fins of a shark and discarding the carcass at sea, has been prohibited, initially through a full-utilization requirement, for over a decade under Conservation and Management Measures (CMMs) adopted by the Indian Ocean Tuna Commission (IOTC) and by fisheries regulations promulgated by the European Union and the Seychelles. Shark finning has also been prohibited through the voluntary codes of practice adopted by the three EU Producer Organizations[2] of which the majority of the SIOTI fleet are members. However, SIOTI pre-assessments and a scoping report for the Indian Ocean TPS fishery, benchmarked to the Marine Stewardship Council (MSC) Standard, identified the need to provide additional supporting information on compliance with shark finning regulations applying to the SIOTI fishery. Similarly, the IOTC, at its 2018 annual meeting, agreed on the necessity of a focused review of implementation of the IOTC finning prohibition and its associated requirements in order to establish whether and to what extent shark finning is still occurring in IOTC-managed fisheries.

While it is generally understood that there is limited opportunity for cutting and drying shark fins aboard tuna purse seiners, the fact that these vessels are catching sharks, including species that have marketable fins, leaves open the possibility that shark finning may be occurring on these vessels. To further demonstrate that shark finning cannot take place in the Indian Ocean TPS fishery (Unit of Assessment - UoA), the SIOTI Partnership decided to conduct a risk assessment of the potential for non-compliance with shark finning regulations and to strengthen management measures to ensure that adherence to shark finning rules is maintained. This report presents the finding of this assessment.

Introduction

In the context of the United Nations Food and Agriculture Organization (FAO)'s Code of Conduct for Responsible Fisheries (1995), the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks, 1999), *inter alia*, called for the minimization of waste and discards of sharks in fishing operations, e.g., by requiring retention of sharks from which fins are removed and encouraging full use of dead sharks. FAO's subsequent International Guidelines on Bycatch Management and Reduction of Discards (2011) offered further advice to manage incidental fisheries catches, *inter* alia, to conserve threatened and protected species, promote sustainable fisheries, and support food security. Accordingly, Regional Fishery Bodies (RFBs), national governments, and fisheries management agencies have increasingly prohibited the practice of shark finning. Over time, many of these prohibitions have evolved to incorporate a requirement that all sharks be landed with their "fins naturally attached," a practice that

[1] "Elasmobranchs" (Subclass Elasmobranchii) incorporate sharks, skates, and rays but exclude the chimaeras (Subclass Holocephali), which together represent Class Chondrichthyes.

[2] ANABAC - Asociación Nacional de Armadores de Buques Atuneros Congeladores (Spain); OPAGAC – Organización de Productores Asociados de Grandes Atuneros Congeladores (Spain); ORTHONGEL – Organisation des Producteurs de Thon Congelé et Surgelé (France)

both ensures and enables the monitoring of compliance with this prohibition and enabling species identification and associated data recording in support of other research and management efforts.

The Indian Ocean (IOTC) is the Regional Fisheries Management Organization (RFMO) managing fisheries for tuna and tuna-like species in the Indian Ocean and adjacent seas (FAO Statistical Areas 51 and 57). The IOTC has adopted a suite of Conservation and Management Measures (CMMs) aimed at minimization of fisheries bycatches and incidental mortality of threatened and protected species, and, increasingly, reducing mortality of associated species such as elasmobranchs.

IOTC Contracting Party governments managing fishing fleets operating in the Indian Ocean, including the European Union (EU), have also implemented conservation and management measures for sharks. Importantly, the private sector, namely companies operating fishing fleets, facilities processing catches from those fleets, or companies purchasing and marketing product from those facilities, have also made a range of commitments to supporting these shark measures, including through their membership of the International Seafood Sustainability Foundation (ISSF). The SIOTI Fisheries Improvement Project (FIP) incorporates additional activities to address shark bycatch, with the overall aim of advancing sustainability in line with Marine Stewardship Council (MSC) standards

SIOTI Shark Finning Risk Assessment

Objective and Methods of the Assessment

This Assessment is a desk-based analysis of the risk of non-compliance with applicable shark finning laws and policies, including IOTC Resolution 17/05, within the SIOTI TPS fisheries. In presenting the findings of the assessment, it proposes a number of issues that should be addressed in a management strategy for both preventing shark finning and increasing the confidence that shark finning is not occurring, the ultimate aim of which is to meet the Marine Stewardship Council (MSC) certification standards.

As per the Terms of Reference for this Assessment, the following activities were undertaken:

i) **A literature review**, focusing on:

- Documents and reports filed and produced by and for the Indian Ocean Tuna Commission (IOTC), namely: annual lists of IUU vessels (2005-2018); national reports for a range of countries on implementation of IOTC Conservation and Management Measures and Compliance reports reviewed by the IOTC Compliance Committee for its 2017 and 2018 meetings; several national reports submitted to the 2018 session of the IOTC Scientific Committee; the 2017 and 2018 Reports of the IOTC Working Party on Ecosystems and Bycatch (WPEB); and a range of other IOTC documents of direct relevance to the Assessment, including several submitted to the IOTC Working Party on Data Collection and Statistics (e.g., Clarke 2018, Garcia and Herrera 2018). It should be noted that this literature review was not exhaustive, particularly as concerns the extensive documentation available through IOTC.
- The Public Certification Report prepared for the recent MSC certification of the Echebastar Indian Ocean tuna purse seine fleet (Acoura Marine 2018), as guidance to the standards that will ultimately apply to the SIOTI fleet as it moves towards MSC certification.
- The extensive documentation developed by the International Seafood Sustainability Foundation (ISSF), including ISSF Conservation Measures and external audit reports of member companies of the International Seafood Sustainability Association (ISSA, the partner arm to ISSF) and other participants, in recognition of the essential and expanding role that ISSF is playing in evaluating and promoting sustainability efforts in global tuna fisheries, particular tuna purse seine fisheries.

ii) Compilation and review of the **shark finning policies** of the SIOTI partners.

Those that are available publicly, as required by the ISSF, and others that are not publicly available but were collected as part of this project have been compiled and reviewed. These, along with prevailing IOTC CMMs and national legislation relating to shark finning, are presented in Annex II of this report.

iii) **Interviews** with key actors in SIOTI.

Based on advice from the SIOTI Project Team, interviews were conducted as a priority with the three producer organizations that represent and advise the SIOTI fleet owners and operators, with the next tier being the research and certification organizations that are operating the onboard observer programs and analyzing the observer data generated by those programs. Interviews were conducted with representatives of ANABAC, OPAGAC, and ORHTONGEL; and AZTI Tecnalia, which implements the observer program for the Spanish and Seychellois TPS fleets, in collaboration with the Seychelles Fishing Authority (SFA), and, importantly, conducts third-party compliance monitoring for that fleet on behalf of ANABAC and OPAGAC and their Seychelles partners. The Seychelles Fishing Authority also provided input through responses to a questionnaire (V. Lucas, *in litt.,* 11 April 2019).

Implementation of the FAO Port State Measures Agreement (PSMA) aimed at reducing Illegal, Unregulated and Unreported (IUU) Fishing is considered a core element of this Assessment. As such, the ToR called for interviews with the designated PSMA authorities in individual coastal States in the Indian Ocean. Since the SIOTI fleet is, with few exceptions, landing catches in just three countries (Seychelles, Madagascar, Mauritius) in the region, this component of the Assessment has focused on the latter, despite the large number of coastal States potentially involved (SIOTI covers the entire Indian Ocean). Interviews with the competent authorities in these countries have not been conducted, owing to time and other constraints. However, the documentation reviewed for this Assessment has provided pertinent information that is reflected in the findings presented herein.

In addition to the above, inquiries have been addressed to individuals in other SIOTI partner entities as well as other organizations. These individuals and organizations are named in the Acknowledgements and their comments referenced, as appropriate, in the text of this report.

Sharks and Shark Finning – Definitions used in this Assessment

To avoid any confusion in this Assessment, it is important to be explicit regarding the definition of “shark” and “shark finning.”

Sharks

The term "shark" is defined in the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) as referring to the full complement of sharks, skates, rays (collectively referred to as elasmobranchs, Subclass Elasmobranchii), and chimaeras (Subclass Holocephali) – Class Chondrichthyes. While shark fins are widely understood to derive from the >500 species of selachians, or true sharks, some of the most valuable fins in the shark fin trade derive from shark-like batoids, such as sawfishes, guitarfishes, and wedgefishes (nearshore benthic species that are unlikely to interact with tuna purse seine fisheries). Recognizing that incidental catches in tuna purse seine fisheries include mobulid rays as well as selachians, this report also uses the term “elasmobranchs.”

Shark Finning

“Shark finning” is defined by FAO and others as the practice of removing the fins of a shark and discarding the trunk, or carcass (sometimes a live animal), at sea. This practice is recognized as both wasteful (less than 5% of the weight of a shark is generally used) and inhumane, as live finned sharks dumped overboard are unable to swim and will die. It also contradicts accepted best-practice as set forth in the FAO Code of Conduct for Responsible Fisheries and the IPOA-Sharks, which call for full utilization of fisheries resources and minimization of waste. Because the value of shark fins for shark fin soup, a Chinese celebratory dish,

has been the primary driver of the expansion in shark fishing in recent decades, and because shark fins take up a small fraction of onboard space of the lower-value carcasses, finning has been widely practiced. Since mortality is not constrained by vessel hold space if carcasses are discarded, finning can quickly lead to overfishing of these K-selected species because mortality is not constrained by vessel hold space. Finning also hinders catch reporting and complicates management, by making it almost impossible to estimate the total numbers of animals removed and more difficult to identify the species involved.

Shark finning is still legal in parts of the world – and reportedly practiced illegally in many others. Initially, the standard measure for implementing shark finning prohibitions was to require a "fin-to-carcass" ratio, which allows fins to be removed from shark bodies at sea, providing the bodies are also brought to shore and the total weight of the landed fins doesn't exceed a certain percentage of the weight of the landed bodies (typically 5%). There are difficulties entailed in implementing and monitoring compliance with fin-to-carcass ratios and, thus, enforcing finning prohibitions, because the weight of the parts landed varies greatly depending on the species and degree of processing undertaken on board, and the regulations generally do not specify whether the carcass weight is whole, gutted, beheaded, or filleted. Species identification and, hence, data collection are also hindered. As a result, revised best-practice standards call for landing sharks with "fins naturally attached" even if gutted, beheaded, or skinned and identifying the species and recording biological data before the animal is processed and sold.

It is important to note that not all shark fins are derived from "finned" sharks. Shark fins in wholesale and retail markets may be derived from a legally and sustainably fished shark, i.e., from a well-managed fishery, harvested in compliance with prevailing regulations, landed whole with fins attached, all parts utilized and consumed, and processed and sold with full documentation. This Assessment focuses on the issue of "finning," which is illegal under the IOTC and EU law and, for vessels larger than 24m in length, also under Seychelles law. However, because it is difficult to ensure that finning is not occurring where it remains legal, this Assessment has also had to review the broader policy, regulatory, and operational contexts to identify gaps that may be enabling finning to occur undetected.

Standards used in This Assessment

The MSC Shark Finning Standard

The Marine Stewardship Council (MSC) certifies sustainable fisheries on the basis of a set of standards and procedures relating to the sustainability of the fishery (Unit of Certification) as it relates to its target stock and the ecosystem impacts of the fishery. Certification is based on an audit conducted by a third party, the Conformity Assessment Body (CAB). The MSC Shark Finning Requirements are set forth in MSC FCRv2.0. In stipulating that no systematic occurrence of shark finning is acceptable for an MSC-certified fishery, these requirements acknowledge that there are uncertainties associated with the methods used to verify whether shark finning is taking place. Therefore, the MSC has defined various risk-based levels of acceptable confidence that shark finning is not taking place, based on different levels of information and management control.

The MSC Shark Finning Requirements assess the level of certainty that shark finning is not taking place at the time that the fishery is certified. The requirements relate to how the regulations in place and the types of external validation work together to deliver the required confidence. MSC FCR v2.0 stipulates that risk should be assessed at the level of the Unit of Assessment (UoA), i.e., that it should include eligible fisheries outside the Unit of Certification (UoC). The CAB sets the Unit of Assessment (UoA) and can do this in any manner providing it meets the requirements for defining a UoA (section 7.5.2 within the Fisheries Certification Procedure [FCP] v2.1) (A. Gutteridge, *in litt.*, 9 May 2019). Depending on the eventual MSC UoA for the SIOTI fleet, meeting the MSC standard could necessitate an evaluation of the norms and procedures for operation of non-SIOTI TPS fleets, such as of those of Iran, Japan, and the Republic of Korea. Such an evaluation has not been possible in this Assessment.

As yet, the only Indian Ocean tuna purse seine fishery that has been certified by the MSC is the Spanish-owned Echebastar fleet (one of the SIOTI industry partners). This includes five TPS fishing vessels (three of which are registered in the Seychelles) and one supply vessel operating in the Indian Ocean. This fishery was officially certified in November 2018. The Public Certification Report (Acoura Marine 2018) provides guidance on the interpretation and application of the MSC Shark Finning Requirement in the certification process. This guidance informs this Assessment.[3]

International Seafood Sustainability Foundation (ISSF)

The International Seafood Sustainability Foundation (ISSF) is a global coalition of scientists, the tuna industry, and World Wildlife Fund (WWF) that promotes science-based initiatives for the long-term conservation and sustainable use of tuna stocks, reducing bycatch and promoting ecosystem health. The ultimate objective of ISSF is to assist global tuna fisheries to meet the sustainability criteria required to achieve Marine Stewardship Council (MSC) certification standards. The membership arm of ISSF is the International Seafood Sustainability Association (ISSA), a non-profit association and the sole voting member of the ISSF. ISSA membership is voluntary. Member companies commit to advocate for improved fishery management, fund scientific advancements through research and expert analysis, and take direct action to encourage the adoption of responsible fishing practices, including through implementation of a suite of conservation measures aimed at improving the long-term health of global tuna fisheries.

Since its inception, ISSF has adopted a range of conservation measures and commitments to facilitate the ISSF mission. The intention is that processors, traders, importers, transports and others involved in the seafood industry will follow these measures to facilitate concrete and continuous improvement across global tuna stocks, by eliminating harmful and unsustainable fishing practices. ISSF participating companies commit to conform to and implement these conservation measures to improve the long-term health of tuna fisheries. ISSF uses a rigorous compliance process to ensure its members are adhering to and implementing ISSF Conservation Measures. The ISSF Compliance Policy, *inter alia*, provides for compliance audit reports prepared by a third-party auditor (MRAG Americas) to be conducted and published and for any non-conformance issues identified to be remediated. ISSF publishes summary compliance reports annually to track ISSF participating companies' progress in conforming with ISSF conservation measures. In addition to these summary compliance reports, MRAG Americas undertakes and issues individual ISSF company reports that detail their compliance with ISSF conservation measures; these include update reports published throughout the year that explain how individual companies have remediated any non-conformance on the conservation measures.

The three major tuna processors involved in SIOTI – Princes Seafood, Thai Union, and Thunnus Overseas Group – are full members of ISSA.

ISSF Conservation Measures relating to Sharks

ISSF has thus far adopted three Conservation Measures relating to sharks, under the rubric of Bycatch Mitigation, namely**:**

- Bycatch Mitigation – 3.1(a) **Shark-Finning Policy**: In light of the difficulties in enforcement and accurate data collection, all ISSF Participating Companies shall establish and publish policies prohibiting shark finning.
- Bycatch Mitigation – 3.1(b) **Prohibition of Transactions with Shark-Finning Vessels**: Processors, traders, importers, transporters and others involved in the seafood industry shall not conduct transactions with vessels that carry out shark finning.

[3] The CAB audit for the Echebastar fleet identified the UoA as solely the Echebastar fleet and its operations, which is the same as the UoC. This has important implications for how the SIOTI fleet might be considered in an eventual MSC certification audit.

- Bycatch Mitigation – 3.1(c) **Prohibition of Transactions with Companies without a Public Policy Prohibiting Shark Finning**: Processors, traders, importers, transporters, marketers and others involved in the seafood industry shall not conduct transactions with companies that do not have a public policy prohibiting shark finning.

ISSF ProActive Vessel Register and Record of Large-Scale Purse Seine Vessels

ISSF has worked with the tuna industry to develop the ProActive Vessel Register (PVR) (iss-foundation.org/PVR), an online database that tracks detailed tuna fishing vessel information, including on vessels' fishing activities. As with ISSA membership, inscription on the PVR is voluntary. It involves a commitment to adhere to a suite of best practices in tuna fisheries, to provide regular, accurate information about the vessels' status and activities, and to submit to regular, third-party audits (undertaken by MRAG Americas). The PVR audits are publicly available through ISSF and indicate whether the vessel is following best practice for sustainable fishing, such as operating within the context of ISSF and other applicable shark finning prohibitions and ISSF conservation measures.

According to MRAG Americas (O. Martens, *in litt.*, 17 December 2018), "depending on the PVR audit level (there are three)" for the shark finning Conservation Measure, the audit process "may include all or a combination of the following:

- Verification of vessel owner/company policy prohibiting shark finning;
- Verification that vessel captain/skipper has followed the ISSF training on bycatch best practices guidelines;
- Review of whether vessel has reported landing sharks whole (which is a requirement if sharks cannot be released);
- In-person interviews of skipper and crew regarding their understanding of bycatch best practices and shark finning;
- Verification that policy prohibiting shark finning (or poster explaining shark finning is prohibited) is posted on board the vessel and in a manner that is understandable by the skipper and crew;
- Interviews dockside and/or at fish markets to determine if shark fins are being sold and by whom;
- Visual inspection of vessel to determine if any signs of shark finning are present;
- Review of RFMO compliance reports and IUU lists for mention of shark finning instances and by whom; and
- Review of international press and other public information re shark finning and cross reference with PVR database.

For the purposes of this Assessment – recognizing that the Indian Ocean Tuna Purse Seine fleet beyond the SIOTI fleet could be audited under the MSC standard – it is important to note that ISSF also maintains a Record of Large-Scale Purse Seine Vessels, which is based on tRFMO Regional Vessel Registers, the IHS Register, and additional information supplied by National Administrations, research institutes and the tuna fishing industry. Unlike the PVR, TPS vessels are included on this Record for information purposes only – ISSF does not independently verify vessel characteristics (including capacity) when listing vessels on this Record, nor does it audit TPS vessel activities.

Unit of Assessment - Indian Ocean Large-Scale Tropical Tuna Purse Seine (TPS) Fleet

The SIOTI TPS Fleet

Currently, the SIOTI fleet is comprised of 42 tuna purse seine (TPS) vessels, operated by or on behalf of the SIOTI partners, flagged by five countries and operated by nine companies, five of which are SIOTI partners (Table 1). The majority of the fleet is registered in the European Union (EU) by France, Italy, and Spain. The remainder are registered in the Seychelles (Spanish- and French-owned) and Mauritius (French-owned). All but four (the SAPMER vessels flagged to Mauritius and Seychelles) are members of the three producer

organizations that are also SIOTI industry partners – ANABAC/AGAC, OPAGAC-OPTUC, and ORTHONGEL[4]. All 42 vessels are listed on the ISSF ProActive Vessel Register (PVR) and, under the PVR rules, must comply with ISSF standards and cooperate with the ISSF third-party audits that are conducted by MRAG Americas.

Table 1. The SIOTI Tuna Purse Seine Fleet

Owners/Operators	Producer Organization	Vessel Name	Flag
Albacora Group	OPAGAC	Albacan	Spain
	OPAGAC	Albatun Dos	Spain
	OPAGAC	Draco	Seychelles
	OPAGAC	Intertuna Tres	Seychelles
	OPAGAC	Galerna Dos	Seychelles
	OPAGAC	Galerna Tres	Seychelles
	OPAGAC	Albacora Uno	Spain
	OPAGAC	Albatun Tres	Spain
Pevasa	ANABAC	Playa de Anzoras	Seychelles
	ANABAC	Playa de Aritzatxu	Spain
Inpesca	OPAGAC	Txori Zuri	Spain
	OPAGAC	Txori Argi	Spain
	OPAGAC	Txori Toki	Seychelles
	OPAGAC	Txori Gorri	Spain
	OPAGAC	Txori Aundi	Seychelles
	OPAGAC	Itxas Txori	Spain
Atunsa	ANABAC	Artza	Seychelles
	ANABAC	Izurdia	Spain
	ANABAC	Doniene	Spain
Echebastar	ANABAC	Alakrana	Spain
	ANABAC	Elai Elai	Spain
	ANABAC	Izaro	Seychelles
	ANABAC	Jai Alai	Seychelles
	ANABAC	Euskadi Alai	Seychelles
Europea de Tunidos (OPAGAC)	OPAGAC	Albacora Cuatro	Spain
Compagnie Française de Thon Océanique (CFTO)	ORTHONGEL	Avel Vad	France
	ORTHONGEL	Cap Saint Vincent	France
	ORTHONGEL	Cap Sainte Marie	France
	ORTHONGEL	Glenan	France
	ORTHONGEL	Talenduic	France
	ORTHONGEL	Drennec	France
	ORTHONGEL	Trevignon	France
Industria Armatoriale Tonniera (IAT)	ORTHONGEL	Torre Giulia	Italy
SAPMER	ORTHONGEL	Dolomieu	France
	ORTHONGEL	Franche Terre	France
	ORTHONGEL	Manapany	France
	ORTHONGEL	Bernica	France
	ORTHONGEL	Belouve	France
		Belle Isle	Mauritius
		Belle Rive	Mauritius
		Morn Blanc	Seychelles
		Morn Seselwa	Seychelles

[4] ANABAC - Asociación Nacional de Armadores de Buques Atuneros Congeladores (Spain); OPAGAC – Organización de Productores Asociados de Grandes Atuneros Congeladores (Spain); ORTHONGEL – Organisation des Producteurs de Thon Congelé et Surgelé (France)

The Non-SIOTI TPS Fleet

The size of the overall Indian Ocean TPS fleet fluctuates through natural industry dynamics and, in recent years, in response to security concerns arising from piracy in the region. The IOTC Record of Active Vessels (RAV) lists 78 TPS for 2015, 70 TPS for 2016, and 83 TPS for 2017. The ISSF Record of Large-Scale Purse Seine Vessels (RLSPSV) lists 129 vessels at the time of writing, while the ISSF ProActive Vessel Register (PVR) lists 49 TPS. There is general agreement between these sources that, in addition to the SIOTI fleet, large-scale TPS are regularly operating in the Indian Ocean under the flag States of Iran, Japan, and Republic of Korea. TPS vessels appearing to operate intermittently are registered to the Philippines and a few other States, including Thailand (a single vessel) in 2016-2017. Ruiz et al. (2018) report that additional coastal tuna purse seine fleets operating in the Indian Ocean are flagged by Egypt, India, Indonesia, Jordan, Myanmar, Mozambique, Malaysia, Saudi Arabia, Sudan, Tanzania, and Thailand.

While understood to be outside the scope of this Assessment and an eventual MSC certification audit, it should be noted that non-TPS fleets operating in the Indian Ocean IOTC Area of Competence are deploying other fishing gears to target tuna, and incidentally capturing non-target species such as elasmobranchs and other fishes, marine turtles, cetaceans, and seabirds. Moreno and Herrera (2013) estimated a total of 6,532 industrial or semi-industrial vessels operating in the IOTC Area of Competence in 2012 and deploying the following gears: TPS (N=68); longlines (N=2,041); pole-and-line (N=698); oceanic gillnets (N=1,243); and gillnets/longlines (N=2,482). These figures indicate that individually or combined, these other fleets are far larger than the SIOTI and overall Indian Ocean TPS fleets.

Beyond the Fleet – Moving Up the Supply Chain

In addition to the Seychelles, a SIOTI founding partner, important tuna-processing facilities (under the ownership of Princes Seafood, Thunnus Overseas Group, and others) operate in Mauritius and Madagascar. That the Echebastar TPS fleet was MSC-certified solely for catches landed and processed in the Seychelles (and not Mauritius and “West Africa” – Acoura Marine 2018), points to the need to demonstrate that these countries (at least) also have the laws, policies, and capacities in place to meet MSC standards.

While most of the SIOTI Indian Ocean fisheries catch is landed and processed in the Indian Ocean, interviewees inform that some of the target catch may, at times, be processed outside of the region (e.g., West Africa, Côte d’Ivoire, Ecuador), after having been transshipped at port in the Indian Ocean (primarily, if not exclusively, through Port Victoria, Seychelles). This Assessment has not addressed these countries.

SIOTI Shark Finning Risk Assessment Findings

Legal Context

Indian Ocean Tuna Commission (IOTC)

Indian Ocean Tuna Commission (IOTC) CMM governing Shark Finning

The overarching legal measure governing shark finning in Indian Ocean fisheries is **IOTC Resolution 17/05**, adopted in 2017, and its predecessor, **Resolution 05/05**, adopted in 2005, on the “Conservation of Sharks Caught in Association with Fisheries Managed by IOTC.” Resolution 05/05 essentially – although not explicitly – prohibited shark finning through the following requirements:

3. *CPCs shall take the necessary measures to require that their fishermen fully utilize their entire catches of sharks, defined as retention of all parts of the shark except head, guts, and skins, to the point of first landing.*

4. *CPCs shall require their vessels to not have on board fins that total more than 5% of the weight of sharks onboard[5] up to the point of first landing. CPS that do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ratio, through certification, observer monitoring or other means;*
6. *Fishing vessels are prohibited from retaining on board, transhipping or landing any fins harvested in contravention of the Resolution.*

Resolution 17/05 improved upon Resolution 05/05 by explicitly prohibiting, for sharks landed fresh, the removal of shark fins on board vessels and requiring that those sharks be landed with their fins naturally attached. The specific provisions are:

2. *CPCs shall take the necessary measures to require that their fishermen fully utilise their entire catches of sharks, with the exception of species prohibited by the IOTC [see following page]. Full utilisation is defined as retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing.*
3. *a) Sharks landed fresh: CPCs shall prohibit the removal of shark fins on board vessels. CPCs shall prohibit the landing, retention on-board, transhipment and carrying of shark fins which are not naturally attached to the shark carcass until the first point of landing.*
   b) Sharks landed frozen: CPCs that do not apply sub-paragraph 3 a) for all sharks shall require their vessels to not have on board fins that total more than 5% of the weight of sharks on board, up to the first point of landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5 % ratio through certification, monitoring by an observer, or other appropriate measures.
   c) CPCs are encouraged to consider to progressively implement the measures described in sub-paragraph 3a) to all shark landings.
5. *Without prejudice to paragraph 3, in order to facilitate on-board storage, shark fins may be partially sliced through and folded against the shark carcass, but shall not be removed from the carcass until the first point of landing.*

It is important to note that the Resolution specifically states that Paragraph 3 will be revisited by the Commission in its 2019 Annual Meeting in light of recommendations from the Scientific Committee, using the best available science and case studies from other CPCs already prohibiting the removal of shark fins on board vessels.

The 2018 annual (22nd) session of the IOTC reviewed and reported on matters related to ecosystems, bycatch and the status of sharks and noted a number of shortcomings, including that reporting data on shark catches is one of the IOTC CMMs with the lowest degree of compliance. Importantly, the Commission agreed to a proposal from the EU requesting the IOTC Compliance Committee and Scientific Committees:

- To analyse and document, wherever possible, whether the practice of shark finning still takes place in IOTC and to what extent, despite the adoption of Resolution 17/05, and to review the compliance with the requirements contained in Res 17/05, including the shark finning prohibition and the fins naturally attached requirement adopted by IOTC (Compliance Committee);
- To identify possible means to improve the submission of complete, accurate, and timely catch records for sharks, as well as the collection of species-specific data on catch, biology, discards, and trade (Scientific Committee).

[5] The term "weight of sharks onboard" does not specify whether this is the original whole (or live) weight or the carcass weight after processing onboard. This potential loophole may enable some shark finning to take place (see page 6).

Such an assessment was conducted by FAO's Technical Coordinator-Sharks and Bycatch, and its findings and recommendations (Clarke 2018) were reported to the December 2018 meeting of the IOTC Working Party on Data Collection and Statistics and February 2019 IOTC Working Party on Implementation of Conservation and Management Measures (WPICMM).

Other Indian Ocean Tuna Commission (IOTC) CMMs relating to Sharks

The IOTC has adopted several additional CMMS relating to sharks, summarized in Table 2. Other CMMS relevant to shark conservation and management include those dealing with the management of Fish Aggregating Devices (FADs), transshipment at sea and in port, reporting and compliance requirements, etc.

Table 2. IOTC Conservation and Management Measures for Sharks

CMM	Title	Retention prohibited	Deliberate setting of nets prohibited	Finning prohibited	Data, research & reporting
Resolution 12/09	On conservation of Thresher Sharks (Family Alopidae) caught in association with fisheries in the IOTC area of competence	✓			✓
Resolution 13/05	On conservation of Whale Sharks (*Rhincodon typus*)		✓		✓
Resolution 13/06	On a Scientific and Management Framework for the Conservation of Shark Species Caught in Association with Fisheries Managed by the IOTC	✓ Oceanic whitetip shark			✓
Resolution 17/05	On the Conservation of Sharks caught in Association with Fisheries Managed by IOTC			✓	✓
Resolution 18/02	On Management Measures for the Conservation of Blue Shark Caught in Association with IOTC Fisheries				✓

Most relevant to this Assessment – and the operations of SIOTI and other Indian Ocean TPS fisheries – are prohibitions on retention, landing, and commercialization, as well as requirements of live release for thresher sharks (12/09) and the oceanic whitetip shark (13/06) and a prohibition against setting of nets where whale sharks are present. Effective implementation of these measures removes the possibility of harvesting the particularly valuable oceanic whitetip fins as well as those of these other species. These resolutions further call on CPCs to "encourage" recording and reporting to IOTC of incidental catches and live releases of prohibited species as well as full reporting of interactions with whale sharks and catches of blue sharks (18/02) as per IOTC catch reporting requirements.

FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing (PSMA)

The Port State Measures Agreement (PSMA) was approved by the United Nations Food and Agriculture Organization (FAO) at their 2009 annual conference and entered into force on 6 May 2016, following deposit of the 25th instrument of ratification, acceptance, approval or accession. As of December 2018, 56 States and the EU are party to the PSMA.

Parties to the PSMA are obligated to implement a number of measures to manage ports under their jurisdiction, with the goals of detecting illegal fishing, intercepting illegally caught fish, and ensuring that information on vessels engaging in IUU fishing is shared globally. Particularly relevant to this Assessment are the requirements that: 1) foreign fishing vessels enter ports only on the basis of prior authorization by the port State authorities; 2) vessels provide detailed information on their identities, activities, and the fish that they have on board; and 3) landings are made only at ports designated under the PSMA as being adequately equipped for effective inspection. There are common standards for inspections and for what

constitutes IUU fishing, such as operating without prior authorization, catching protected or retaining prohibited species, using outlawed types of gears, and disregarding catch quotas.

Already in 2010, the IOTC had adopted a Resolution on Port State measures to move forward the PSMA provisions in the context of the IOTC mandate. This Resolution (10/11) was superseded in 2016 (Resolution 16/11). The Port State competent authorities (e.g., fisheries, maritime) of IOTC Coastal State Contracting and Cooperating Non-Contracting Parties (CPCs), where foreign vessels offload tuna and tuna-like species or call into port to use port services, are responsible for implementing this Resolution. The IOTC Secretariat has developed a range of tools to assist CPCS in implementing the Resolution and the PSMA. The Secretariat maintains a list of designated ports and has prepared standardized, downloadable forms, as well as a range of training and other capacity-building tools to assist implementation.

Violation of IOTC CMMs, including the shark finning prohibition, constitutes IUU fishing under the PSMA. It is, therefore, one of the many issues that port States are mandated to address.

EU and National Shark Finning Regulations applying to the SIOTI Fleet

The SIOTI TPS fleet is flagged by five countries: France (N=12); Italy (N=1); Mauritius (N=2); Seychelles (N=13); and Spain (N=14). Therefore, the operations of the SIOTI fleet are regulated under the laws of the EU, Seychelles, and Mauritius. EU Council Regulation (EC) No 1185/2003 on the removal of fins of sharks on board vessels, as amended by Regulation (EU) No 605/2013, covers France, Italy, and Spain fleets. The 2003 Regulation prohibited the removal of shark fins on board vessels as well as to retain on board, transship or land shark fins; and to purchase, offer for sale or sell shark fins which have been removed onboard, retained on board, transshipped or landed in contravention of the Regulation. However, EU Member States could issue permits allowing vessels to remove fins on board and apply a fin-to-carcass weight ratio for compliance monitoring upon landing. The 2013 revision withdrew permits for removal of fins on board; it requires that shark fins not be removed from the carcass before landing ("fins naturally attached"). It does permit, "to facilitate on-board storage," that fins be partially sliced through and folded back against the carcass.

The Seychelles SIOTI vessels are governed by the Seychelles Fisheries (Shark Finning) Regulations, 2006. This Regulation is less comprehensive than the EU measure. It prohibits foreign-owned vessels licensed to fish in Seychelles waters (as well as local fishing vessels greater than 24m in length fishing in or outside Seychelles waters) from removing on board the fins from sharks or transshipping or landing such fins, unless specifically authorized to do so. Under such authorizations, all parts must be landed, and the landed weight of shark fin cannot exceed 5% of the landed weight of the eviscerated sharks. That this Seychelles regulation potentially continues to allow for shark finning by certain vessels was a negative factor in the scoring by the MSC of the Echebastar TPS fleet (Acoura Marine 2018). The recently revised Seychelles National Plan of Action for Sharks (NPOA), in noting that "the feasibility/effectiveness of this regulation has yet to be assessed," includes as an objective the revision of this legislation to prohibit all shark finning regardless of vessel size, and to require that all shark carcasses be landed with fins attached (SFA, 2016).

Mauritius has not yet adopted legislation prohibiting shark finning. The 2017 Implementation Report for Mauritius indicated that "the Fisheries and Marine Resources Act has been reviewed to integrate the CMMs of the IOTC and is expected to come into force in the near future." The provisions of IOTC Resolution 17/05 and its predecessor Resolution 05/05, as well as other IOTC shark-related resolutions, are, as Mauritius reported to the IOTC Scientific Committee (IOTC-2018-SC1-NR17), incorporated into the fishing licenses as mandatory conditions. The 2017 Compliance Report for Mauritius indicates that including these provisions in the Terms and Conditions for Authorizations To Fish (ATFs) makes them legally binding under Section 36(5) of the Fisheries and Marine Resources Act 2007. In terms of implementation of the shark finning prohibition, the 2017 IOTC Implementation and Compliance Reports for Mauritius indicate that "sharks are landed head off and tail off with fins attached."

Prohibitions on Transshipment at Sea by Tuna Purse Seine Vessels in the Indian Ocean

Transshipment at sea, which is often un-monitored or otherwise difficult to monitor, presents a risk that shark finning – and the transfer of shark fins at sea – can escape detection. It is important to note that the SIOTI TPS fleet is legally prohibited from transshipping at sea and, hence, required to transship their catches in port. Transshipment at sea of fisheries catches by purse seine vessels has been prohibited in the IOTC Area of Competence under successive resolutions. The most recent, Resolution 18/06, requires all transshipments to be conducted in port with the exception of large-scale tuna longline vessels covered by an IOTC monitoring program. Transshipment at sea is also prohibited under EU Fisheries law for all EU-registered vessels. This prohibition – and IOTC and other requirements regarding recording and reporting, as well as inspecting, transshipments in port – close a significant window of risk that shark finning may be escaping detection by transshipment of illegal shark fins at sea.

Policy Context

Policies of SIOTI Fleet Producer Organizations

The three tuna producer organizations representing the majority of the SIOTI fleet have adopted policies prohibiting the practice of shark finning, as follows:

- ORTHONGEL, representing the French-flagged vessels, adopted Décision ORTHONGEL n°8 of 15 January 1997 prohibiting the removal of shark fins and discard of the shark carcass at sea as well as the commercialization of any shark fins from finned sharks.
- The Spanish producer organizations OPAGAC (Organization of Associated Producers of Large Tuna Freezer Vessels) and ANABAC-OPTUC (National Association of Tuna Freezer Shipbuilders) adopted, in February 2012, a joint Code of Good Practice for the tuna purse seine fishery that incorporates an explicit prohibition on the practice of shark finning. This Code has since been twice revised; the current version dates from February 2017.

  This Code of Best Practice addresses a number of important issues in the tuna purse seine fishery, including: requiring the use of 100% non-entangling FADs (NEFs) to reduce to a minimum the interactions with sensitive species such as sea turtles, sharks and rays; outlining best practices for handling and release of incidentally captured species, such as sea turtles and sharks; and committing to 100% observer coverage and training of fishing masters, crews and scientific observers in implementing the Code.

The 11 Seychelles-flagged Spanish vessels are covered by the OPAGAC-ANABAC policy through its having been adopted by OPAGAC's affiliate AGAC (Association of Large Tuna Freezers), which is a Spanish shipowner group investing in vessels flagged outside of Spain (e.g., Belize, Curaçao, Ecuador, El Salvador, Guatemala, Panama, Seychelles). AGAC has made additional commitments to improve the transparency of activities of AGAC vessels flagged in third non-EU countries, including providing on a voluntary basis to the Spanish fisheries authorities: satellite monitoring of vessels by VMS; copies of fishing licenses validated by the flag State; and copies of logbooks and declarations of offloading and transshipment.

Although the four SAPMER vessels flagged in Mauritius and Seychelles are not formally members of ORTHONGEL, SAPMER applies that policy to all its vessels as part of its own company Shark Policy, which applies to all SAPMER Group's vessels operated by SAPMER SA, Tuna Fishing Company (TFC) and Indian Ocean Ship Management Service (IOSMS) (L. Pinault, *in litt.*, 5 February 2019). As stated in that policy, from the onset of its tuna fishing operations in 2006, SAPMER has had in place an absolute prohibition of finning on sharks accidentally caught during fishing operations.

Policies of SIOTI Fleet Owner/Operators

A number of the SIOTI shipowner companies have elaborated and published specific policies against shark finning (Table 2). Others, such as Echebastar, have stated that such policies are in place, but they do not appear to be publicly available.

Table 2. Shark Finning Policies of SIOTI Producer Organizations, Fleets, and Processors

Company/Entity	Shark Finning Policy	Available at:
PRODUCER ORGANIZATION		
ANABAC/OPTUC - OPAGAC/AGAC	✓	opagac.org/wp-content/.../05/GP-OPAGAC-ANABAC-feb-2017-definitivo-ingles.pdf
ORTHONGEL	✓	http://www.orthongel.fr/index.php?page=durabilite/gbp; http://www.orthongel.fr/index.php?page=gouvernance/reglt
FLEET OWNER/ OPERATORS		
Albacora (OPAGAC)		
Atunsa (ANABAC)	✓	http://www.atunsa.com/es/politica_prohibicion_aleteo_tiburon-3
CFTO (ORTHONGEL)	✓	http://www.cfto.fr/peche_durable_envir.php?lg=2
Echebastar (ANABAC)		https://echebastar.com/en/responsible-fishing/
Compañía Européa de Tunidos (OPAGAC)		https://www.ciaeuropeadetunidos.com/responsible-fishing/
IAT (ORTHONGEL)		
INPESCA (OPAGAC)	✓	http://www.inpesca.com/inpesca/de/practice-of-shark-finning-2180.asp?cod=2180&nombre=2180&nodo=&orden=True&sesion=1347
Perasa (ANABAC)		
SAPMER	✓	
PROCESSORS/WHOLESALERS – SIOTI		
Thai Union	✓	www.thaiunion.com/files/download/sustainability/policy/POLICY_REGARDING_SHARK_FINNING.pdf
Princes Seafood	✓	www.princesgroup.com/downloads/Princes-seafoodsustainability-report-May2018.pdf; http://www.princesgroup.com/about-princes/our-responsibilities/
Thunnus Overseas Group	✓	http://www.pompon-rouge.fr/en/#!fishing-method

Policies/Codes of Conduct of Tuna Processing Companies – Princes, Thai Union and Thunnus Overseas Group

As full members of the International Seafood Sustainability Association (ISSA), Princes Seafood, Thai Union and Thunnus Overseas Group have adopted explicit policies against shark finning in support of the ISSF conservation measures to which they, as members, must commit. As with the other policies of SIOTI partners, these policies vary. Thai Union's Policy Regarding Shark Finning, *inter alia*, condemns the practice of shark finning and prohibits this practice on board its own vessels and those of its subsidiary companies. Further, it commits (in line with ISSF policy) not to transact business for two years with any vessel that has been identified by an RFMO or national authority as having practiced shark finning. Finally, it undertakes not to transact business with any company that has no published policy banning shark finning or which, having instituted such a policy, does not fully enforce its provisions.

Policy Gaps

While there is a degree of variability among the policies of the producer organizations and both fishing and processing companies (less so for ISSA members or ISSF adherents), all lack incorporation of the best-practice standard of a **"fins naturally attached" requirement** for implementing this prohibition, as is mandated by EU law, Seychelles law for the SIOTI fleet, and by the IOTC for fresh-landed sharks. The Thai

Union policy statement mentions in its preamble that the legislation "of several countries" requires that fins remain naturally attached to shark bodies, but it does not address this condition nor incorporate it into its policy statement. While this policy gap may seem redundant for the SIOTI fleet, in the light of prevailing law and producer organization and company policies that prohibit finning and encourage live release of all sharks, it is important to recognize that sharks continue to be retained and landed by the SIOTI fleet; directed shark fisheries continue to operate in the Indian Ocean (and other oceans); and non-SIOTI TPS vessels may not be operating under the same legal or policy regimes for shark bycatch. Formalizing this "best-practice" standard for the SIOTI fleet closes an albeit small window of risk of illegal finning on the SIOTI fleet and sets an example for other fleets, as well as management bodies, such as the IOTC and its Contracting Party governments.

There are other gaps in these policy statements, particularly as regards **the operationalization of these policies and overall compliance monitoring**. Through the producer organizations and partners such as AZTI Tecnalia and SFA, as well as ISSF, there are ongoing activities aimed at training skippers, crew, and scientific observers regarding prevailing laws and policies, as well as best-practice for handling and release of incidentally captured animals, issues that are directly relevant to minimizing the risk of shark finning. However, the producer organization policies do not address the discard or retention of dead sharks. As highlighted in the Echebastar MSC certification audit process (Acoura Marine 2018), policies and practices regarding retention of dead sharks and the ultimate disposal of those animals should be clarified and made explicit, particularly in the context of the FAO IPOA-Sharks and IOTC CMMs encouraging full utilization and minimization of waste.

Recognizing that the existence of a policy does not in and of itself guarantee adherence to that policy, the question of **compliance monitoring** of SIOTI Policies was reviewed for this Assessment. In this context, it should first be noted that 40 of the 42 vessels of the SIOTI fleet are actually mandated by law to land sharks whole and not remove any fins at sea (EU and Seychelles finning regulations), and the remaining two vessels are, according to the Government of Mauritius, legally constrained from finning under the Mauritian licenses issued for their operations. Hence, at the fleet level, compliance monitoring is directly linked to the prevailing legal rules in addition to producer organization and company policies.

The OPAGAC/AGAC-ANABAC/OPTUC Code of Good Practice is explicit on two issues relating to compliance monitoring: a requirement that there be 100% observer coverage (physical and electronic) on all OPAGAC/AGAC vessels to verify adherence to the Code (the 2017 revision extended observer coverage to supply vessels); and specific procedures for compliance monitoring, namely twice-yearly reporting and review. Section 6 of the Good Practices Code outlines the measures to track compliance with the Code:

- All activities covered in the Code are verified by an independent scientific organization (AZTI, which also conducts the observer program for the TPS fleet) to guarantee correct operations;
- The independent scientific organization collects and reviews observer data and analyzes on a per vessel and per trip basis.
- The scientific organization provides half-yearly compliance reports based on those analyses, with specific advice when necessary.
- A Steering Committee meets half-yearly to see how Code is applied, as well as to find solutions to problems and update the program as necessary based on scientific advice.

The ORTHONGEL policy does not specify how compliance is monitored, although ORTHONGEL is also voluntarily implementing 100% observer coverage (physical and electronic) on its TPS fleet. According to M. Goujon (pers. comm., 2018), observers are scientific and charged with data collection and not compliance monitoring; however, the observer program implemented by Oceanic Développement of Bureau Veritas, as part of the international OCUP program (see below), incorporates compliance monitoring: a report is filed after every fishing cruise that incorporates any issues of infractions of prevailing laws. Where vessels are operating in the EEZs of other countries, national observers from the competent fishing authorities of those

countries will be monitoring for compliance. Importantly, ORTHONGEL does not, in contrast to OPAGAC-ANABAC, have a formal review and reporting compliance process as regards the shark finning prohibition; an outstanding question of this Assessment is whether absence of this process results in lack of broader reporting and review of incidents of shark finning if they have occurred. In the case of infractions, ORTHONGEL has a "rappel à l'ordre" process that reminds the company in question of its legal and other responsibilities, but such a process is dependent on ORTHONGEL's being made aware of infractions. This is presumed to also be the case with the SAPMER fleet, for which Oceanic Développement implements the observer program.

Operations

Beyond the policy and legal contexts within which the SIOTI fleet conducts business are several aspects of the operations of the SIOTI fleet that are directly relevant to assessing the risk that shark finning is occurring and, in addition, to meeting MSC standards, based on the Echebastar TPS MSC certification process. These are discussed in brief below.

Management of Shark "Bycatch"

The SIOTI fleet encourages and provides capacity-building in various forms to its captains and crews to ensure that their legal and policy mandates are implemented. This includes guidance on reducing incidental catches ("bycatch") of non-target species, including sensitive and Endangered/Threatened/Protected (ETP) species such as marine turtles and elasmobranchs, and on their handling and release to reduce mortality and enhance post-release survivorship. The major focus appears to be on returning all shark "bycatch" to the sea, even where as many as 30% (M. Goujon, pers. comm., 2018) may already be dead. ANABAC operational procedures, for example, call for return to sea of all sharks whether alive or dead (A. Muniategi, pers. comm., 2019). Increasingly, TPS vessels have installed a second conveyor belt to return these non-target animals to the sea.

While there seems to be some variability in approach between fleets – and differing capacities between vessels (and their crews) and fleets in terms of what they can do – the example of the Echebastar fleet (Acoura Marine 2018) as regards their handling of shark "bycatch" and ensuring that no shark finning can occur is illuminating:

> *Echebastar Fisheries attempts to remove all sharks and other large ETP species manually in the water while they are in the net. Those large animals that are not manually removed are lifted from the net in a special net sling, finally those small animals, including small silky sharks that cannot otherwise be removed are brailed out of the net along with the tuna. As these species move down a conveyor to the holding tank they are either removed by hand and then carried out and released, or on three of the vessels there is a second conveyor that discharges the unwanted catch overboard. Undoubtedly, some small sharks may end up in the hold and are frozen along with the tuna and other bycatch species that have not been separated from the catch. No sharks are sold as part of the landed catch. Any small sharks that may have been entered the holding tanks are removed from the landed catch being offloaded and sold. No shark finning occurs at sea. No sharks bodies or parts are sold, this is specifically against Echebastar policy.*

As regards sharks that may have inadvertently ended up in the well with the tuna catch, these animals may be removed at offloading in port by the "stevedores" and utilized or sold (A. Muniategi, pers. comm., 2019), including, possibly only the fins; however, at that point, even if it is only the fins that are sold, this does not constitute an instance of finning, which is removing the fins and discarding the carcass at sea.

Observer Coverage

The IOTC requirement for observer coverage on vessels fishing under its jurisdiction is a minimum of 5%. EU law requires a minimum of 10% observer coverage (and funding is available through the EU to support the deployment of these observers on fishing vessels). All three of the SIOTI producer organizations and

SAPMER, covering all of the SIOTI fleet, have committed to 100% observer coverage, made possible through human observers and electronic monitoring systems (EMS). The OPAGAC/AGAC- ANABAC-OPTUC Code of Good Practices adopted 100% observer coverage of fishing activities as of 1 January 2015 and extended that 100% coverage rate to support vessels as of 1 January 2017. The Code further states that "… the minimum coverage for purse seiners to maintain in terms of human observers is 10%, while coverage for auxiliary vessels may be provided entirely by electronic observers due to vessels' space problems."

Ruiz et al. (2018) report that under EU Data Collection Framework (DCF), onboard fisheries observer coverage increased significantly from 2014 through private contracts between industry and scientific institutions, the French fleet under OCUP (Observateurs Communs Uniques et Permanents) and Spanish and Spanish-Seychellois fleet under the "Best Practices Monitoring Program." Human observers supplemented by Electronic Monitoring Systems (EMS) were expected to achieve 100% observer coverage in 2017 (and did so for the Spanish fleet in 2017 and 2018). The proportion of observer vs. EMS coverage varies within the fleet. ANABAC, for example, deploys primarily human observers, with EMS in only "isolated" cases (A. Muniategi, pers. comm., 2019).

Also, Ruiz et al. (2018) report that AZTI Tecnalia, the Spanish Institute of Oceanography (IEO), and the Institut de Recherche pour le Développement (IRD) have been conducting since 2003 a coordinated observer program as part of the French and Spanish national programs for data collection and recently under private contracts funded by the fishing industry. Other institutions, mainly the Seychelles Fishing Authority (SFA) but also authorities in Madagascar, participate in this sampling scheme, with data collection methods (manual, protocol, paper forms, and databases) fully standardized among these institutions. The sampling program provides information about the commercial and non-commercial species that are in the tuna catch and could be discarded; observers fill in five data sheets, which include as one priority estimating and measuring (including sexing if possible), sharks, billfishes, and turtles. A collaborative ObServe data management program that is EU-wide captures the data for all the SIOTI fleets – France, Mauritius, Seychelles, Spain; the data are collected according to the same protocols and with the same methods and manuals and then shared in this common database (Ruiz, pers. comm., 2019).

All three SIOTI producer organizations, often in collaboration with ISSF, have active ongoing training and capacity-building programs for observers, as well as captains and crews. These programs incorporate various issues, including the rules that apply, best practices, e.g., for handling and release, and data recording and reporting. The prohibition on shark finning and safe handling and release of sharks are components of these ongoing training activities.

The extent and nature of these observer programs generate confidence that if shark finning were occurring on any SIOTI vessels, this would be recorded, if not also reported at a higher level.

Monitoring and Inspection of Transshipments and Landings

As mentioned below, under IOTC and EU law, the SIOTI fleet is prohibited from transshipping at sea and required to transship in port. The fleet transships their catches primarily in Seychelles, where reliance is on the Seychelles Fishing Authority (SFA) to oversee and conduct inspections. ANABAC fleet catches from the Mozambique Channel have been landed in Antsirana (Diego Suarez), Madagascar, although the current trend is to land them as well in the Seychelles (A. Muniategi, pers. comm., 2019).

Under the IOTC, CPCs are required to inspect at least 5% of transshipments and landings at ports and to provide reports of these activities to the IOTC. Based on IOTC Compliance Reports, this minimum standard is not being met – or consistently met – by the three recipient countries of the SIOTI catch – Madagascar, Mauritius, Seychelles, nor by the EU. Based on the Echebastar MSC Public Certification Report, the low level of inspections at ports is considered a risk factor in this Assessment. Whether and to what extent this minimum standard may be a risk factor enabling shark finning to escape undetected is a question warranting further consideration.

The designation of ports, required under the FAO PSMA and IOTC, is also important for this assessment, as adequate capacities to inspect, record, and report on transshipments and landings, as is envisaged under the PMSA, are a factor in reducing the risk that shark finning may escape detection. The three ports used by the SIOTI fleet are designated and registered by the IOTC (if not also by FAO): Port Victoria, Seychelles; Port Louis, Mauritius; and Antsirana (Diego Suarez), Madagascar.

Summary of Findings

VI. No Reports of Shark Finning in the SIOTI Fleet

All three producer organizations report having received no report of incidents of shark finning on vessels in the SIOTI fleet. AZTI Tecnalia, implementing observer programs for the Spanish and Spanish-Seychellois TPS fleets and analyzing the observer data for compliance issues under their agreement with OPAGAC-ANABAC as regards the Code of Good Practices for Responsible Tuna Purse-Seining, confirms that there was not a single incident of shark finning by their Indian Ocean fleet members reported since the implementation of 100% coverage in 2014 (J. Ruiz, pers. comm., 2019).

ORTHONGEL has received no reports of shark finning by their Indian Ocean TPS fleet members (M. Goujon, pers. comm., 2018.). While expressing confidence that information on shark finning incidents would make its way to ORTHONGEL, M. Goujon (pers. comm., 2018) has identified the need to verify whether and to what extent the observer data from the ORTHONGEL fleet are being analyzed at the level to detect such incidents if they have occurred or might occur in future. Further, he reports that ORTHONGEL is not party to the briefing reports prepared after each fishing trip by Océanic Développement, which should include any incidents of infractions.

Similarly, the Seychelles Fishing Authority (SFA) (V. Lucas, *in litt.*, 11 April 2019) reports that no incidents of shark finning in the SIOTI fleet have been recorded through at-sea and in-port inspections by SFA.

VII. Lack of Evidence of Shark Finning and Overall Low Risk

Based on the documentation reviewed and interviews conducted for this Assessment, there is no evidence that shark finning is occurring on any of the SIOTI TPS vessels. Overall, the risk of shark finning is deemed low, for the following reasons:

- Prevailing national legislation implementing the IOTC shark finning prohibition is in effect for the EU and Seychelles. Based on reports by the Government of Mauritius to the IOTC, the IOTC finning prohibition also applies to Mauritius-flagged vessels by virtue of its – and other shark-related measures' – being incorporated into the conditions of the fishing licenses (Authorizations to Fish-ATFs) issued by the Government of Mauritius. Twenty-seven of the 42 SIOTI TPS vessels are flagged to EU Member States and, therefore, are subject to EU Regulations prohibiting shark finning and requiring that fins be landed naturally attached to the shark carcass; this is the best-practice measure to promote and monitor compliance with – and enforce – shark finning prohibitions. The 13 Seychelles-registered vessels, by virtue of being foreign-owned and larger than 24m in length, are subject to Seychelles law prohibiting the onboard removal of shark fins (none have been authorized to do so by the SFA (V. Lucas, *in litt*., 11 April 2019). The two TPS vessels flagged to Mauritius, and owned by SAPMER, are subject to the conditions set forth in their ATFs.
- The SIOTI fleet is operating under a policy of voluntary 100% observer coverage, which disincentivizes illegal activity on these vessels.
- SIOTI producer organization policies are explicit and unequivocal in prohibiting shark finning and encouraging safe handling and release of sharks caught incidentally, and several of the vessel owner companies have likewise adopted policies against shark finning. The OPAGAC-ANABAC policy is also

explicit in detailing their compliance monitoring of the shark finning policy. The policies of ORTHONGEL and SAPMER do not detail how records of any violations of shark finning policies and laws are reported back and addressed.

- All 42 fishing vessels in the SIOTI fleet are listed on the ISSF ProActive Vessel Register (PVR) and, under the PVR rules and procedures, have been assessed in the ISSF-required third-party (MRAG Americas) audits as fully compliant with the ISSF shark finning Conservation Measure. The ISSF audit process is extensive and based on specific criteria; as such, it should be considered a reliable basis for assessing the performance of listed vessels.
- Under IOTC rules and EU law, there is no transshipment at sea of SIOTI tuna catches, thereby reducing the risk that illegal shark fins (from shark finning) could be sold as part of those operations.
- The three companies in the Indian Ocean that process the majority of SIOTI tuna catches in the Indian Ocean – Princes Seafood, Thai Union, and Thunnus Overseas Group – are full members of the ISSA and subject to ISSF auditing of their compliance with ISSF Conservation Measures. These companies all have stated policies against shark finning and adherence to ISSF requirements regarding not purchasing from companies that have been documented to have been involved in shark finning. They have been found by independent ISSF auditing to be in compliance with ISSF shark finning Conservation Measures.
- SITOI producer organizations are cooperating with scientific institutions and agencies implementing independent observer programs, as well as with ISSF. They provide training and other forms of capacity-building to vessel captains and crews, and to scientific observers on rules and procedures, as well as best practices for responsible tuna purse seining. These activities include information on legal prohibitions of shark finning and safe handling and release of incidentally caught sharks.
- As compared with the disincentives to fin sharks set forth in prevailing legislation and policies applying to the SIOTI fleet, there are considered to be few incentives to fin sharks. Markets for shark fins are declining or non-existent. The economic benefits of finning and handling illegal shark fins for eventual sale are therefore considered to be very low in comparison with the risks involved, and do not warrant any diversion of effort from handling and processing properly the far more valuable tuna catches. Rather, there is an increasing focus on returning all incidentally caught sharks to the sea, even those that are already dead.

VIII. Shark Finning Risk Factors – Weaknesses and Gaps

This Assessment has identified a range of weaknesses and gaps that may be allowing shark finning to occur and escape detection in the SIOTI fleet. Increasing the level of certainty that shark finning is not occurring in relation to the SIOTI fleet and any broader Unit of Assessment that would be reviewed for MSC certification necessitates improvements in a number of areas. These are discussed here. Recommendations for addressing these issues are presented in the following section.

Implementation of the IOTC Shark Finning Prohibition (Resolution 05/05 superseded by Resolution 17/05)

I. Improving the Effectiveness of the IOTC Finning Prohibition. There is an extensive body of evidence pointing to the infeasibility of enforcing shark finning prohibitions with fin-to-carcass ratios, and widespread acceptance that “fins naturally attached” is the most effective means of demonstrating – and guaranteeing – compliance with finning prohibitions. However, IOTC Resolution 17/05 requires fins naturally attached only for fresh sharks and maintains a fin-to-carcass ratio for dead sharks. This should be considered a weakness in the IOTC shark finning CMM that raises the possibility that shark finning is occurring undetected.

II. Assessing Compliance of IOTC CPCs with the IOTC Shark Finning Prohibition. The research conducted for this Assessment has identified legal, operational, and informational gaps in compliance with the IOTC finning prohibition. A report commissioned by the IOTC Secretariat following the decision of the 22nd Annual Meeting of the IOTC in 2018 to request the Compliance Committee to analyze and document whether and to what extent the practice of shark finning still takes place in IOTC fisheries has also identified these gaps, as well as a range of other shortcomings that – fundamentally – make it impossible to answer this question. *An Assessment of Shark Finning in Indian Ocean Tuna Commission Fisheries* (Clarke, 2018) was submitted to the 2018 meeting of the IOTC Working Party on Data Collection and Statistics (WPDCS) and more recently to the February 2019 IOTC Working Party on Implementation of Conservation and Management Measures (WPICMM). In identifying the numerous problems impeding an assessment of shark finning in the IOTC Area of Competence, the author recommends a set of actions, including revision of the IOTC resolution, to address these problems.

III. Reporting to IOTC on implementation of the shark finning prohibition. IOTC documentation indicates that its CPCs are, with very few exceptions, not reporting on their implementation of the shark finning prohibition. This may be because the there is no formal mechanism for reporting on the shark finning component of Resolutions 05/05 and its successor 17/05. The reporting templates for the Compliance Committee, for example, include this Resolution as a CMM against which CPCs are required to report – but the components specified are only the data requirements (nominal catches, catch effort, and size frequency), not the finning prohibition itself.

The First Session of the IOTC Working Party on Implementation of Conservation and Management Measures, convened in 2018, recommended a complete review of the list of active CMMs at its next session to identify reporting requirements and implementation obligations that are not currently being assessed and submit its recommendations to the Compliance Committee in 2019. The Assessment Criteria for the Compliance Report presented to this meeting, however, does not include specifics on the shark finning prohibition, nor on the fins-naturally-attached and fin-to-carcass ratio requirements. This omission raises the possibility that this IOTC measure will continue to be overlooked in IOTC reporting processes.

IV. Low level of compliance with reporting requirements for sharks. The IOTC Compliance Committee has identified reporting on sharks (required under Res 15/02 and 17/05) as one of the IOTC CMMs with the lowest level of compliance. While this finding applies broadly across all vessels and gears – and the TPS fleet is far smaller than those deploying longlines or gillnets, for example – this shortcoming does present a real risk that shark finning is continuing to occur on vessels managed by the IOTC. The overall poor reporting on sharks also encompasses the EU, which was flagged in the 2018 IOTC Compliance Report as Partially Compliant (P/C) for not reporting on nominal catch, catch and effort, and size frequency for sharks for some fleets under Resolution 17/05 (although this is understood not to reflect any shortcomings in reporting by the EU TPS fleet).

V. Improving Recording and Reporting on IUU Vessels. Pursuant to Resolution 11/03, adopted in 2003, the IOTC has been compiling a list of IUU vessels operating in the IOTC Area of Competence and developing a process to record and remove those vessels from this list in concert with flag State members. Although there was no mention of shark finning in the 2005–2018 reports reviewed for this assessment, it should be noted that the overall quality of these reports is very poor (e.g., much of the information is listed simply as “unknown”). It may also be necessary to clarify that shark finning under IOTC is considered IUU fishing for the purposes of the IUU vessel identification and reporting process.

VI. Gaps in National Implementing Legislation of IOTC Shark Finning Prohibition.

Mauritius (flagging two SIOTI vessels owned by the French company SAPMER) does not yet have a national law in place prohibiting the practice of shark finning. According to their 2017 IOTC Compliance Report, IOTC CMMs are being reviewed for transposition into the Fisheries and Marine Resources Act 2007. In the meantime, IOTC CMMs relating to sharks are legally binding under Section 36(5) of the Fisheries and Marine Resources Act 2007, and are being incorporated into the licensing conditions of the Authorizations to Fish (ATFs) and fishing licenses. It is not clear whether this mechanism is sufficient to deter shark finning.

Madagascar, where Thunnus Overseas Group operates a tuna processing facility, is, according to FAO statistics, one of the top 20 fishing countries for batoid fishes (including shark-like batoids that yield the most valuable "shark fin"). Madagascar does not have in place a national policy or law prohibiting shark finning. Madagascar has also yet to develop an NPOA under the FAO IPOA-Sharks. Depending on the operations of the tuna processors in Madagascar, these shortcomings could constitute an important loophole enabling shark finning to occur undetected and for tuna caught from operations that have been involved in shark finning to be comingled with tuna from the SIOTI fleet.

VI. Gaps in SIOTI Producer Organization and Processing Company Policies. There is a great deal of variability in the policy statements of the SIOTI partners as regards prohibiting shark finning. While they are universally clear on prohibiting shark finning, none of the policies, for example, set out the norms and procedures in place to ensure that the prohibition is adhered to. The OPAGAC-ANABAC Code of Good Practices for Responsible Tuna Purse-Seining is the only one that is explicit in detailing that twice-yearly reporting by a third party (AZTI Tecnalia) review of implementation of the Code of Good Practices provides for compliance monitoring. ORTHONGEL and SAPMER may wish to review whether they, too, should adopt – and articulate – a **formal compliance monitoring and reporting process**, such as in place for the ANABAC-OPTUC-OPAGAC/AGAC vessels,

There is also confusion regarding SIOTI fleet **policies on the retention and discard of sharks** caught incidentally in purse-seining operations. A growing and evolving body of research, training, and development deals with best-practice in the handling and release of live sharks, but there are no explicit provisions for the treatment of dead sharks, other than the CMMs for zero retention of oceanic whitetip and thresher sharks. IOTC Res 17/05 calls for full utilization, but sharks have been excluded from the IOTC list of species that should be fully retained (A. Muniategi, pers. comm., 2019). Based on the information provided for this Assessment, it appears that most onboard effort of vessel crews is oriented towards returning to the sea all elasmobranchs, whether dead or alive. Clarification of policies with respect to the retention and discard of dead sharks and the disposal of dead sharks if they are retained, as provided by Echebastar in their MSC Public Certification Report, should aim to resolve any confusion around the risks that dead sharks could be finned (illegally, under the IOTC prohibition) and whether any fleet policy could be providing a loophole for a broader practice of shark finning.

A notable shortcoming in the SIOTI policy statements is the lack of reference to **the requirement that shark fins be landed "naturally attached"** to the shark carcass, which is the best-practice standard for ensuring compliance with shark finning prohibitions and supporting data recording and other management efforts. This standard is increasingly being adopted by RFMOs and national governments, including the EU. While this requirement may already apply legally to the SIOTI fleet, SIOTI policies – aiming at best practice – should explicitly incorporate it – and endorse it as part of their overall shark policy position.

VII. Discrepancies reported in at-sea Observer Coverage. The SIOTI fleet commitment to 100% observer coverage is an important factor in minimizing the risk of illegal shark finning occurring undetected. Official reporting on observer coverage to IOTC by Seychelles suggests that this 100% coverage is not being met. Seychelles has reported to IOTC in recent years of observer coverage of only 38% of sets

by flagged tuna purse seine vessels. There are a number of possible explanations for this discrepancy, including lag-times in data processing and recording and interpretation of observer coverage as human vs. electronic. If Seychelles, and possibly Mauritius, are not attaining the full 100% observer coverage, either human or electronic, of the SIOTI vessels, this would call into question the effectiveness of the SIOTI producer organization policies as well as their compliance processes. It would also have ramifications for the ISSF compliance monitoring, as all SIOTI vessels are currently assessed as in full compliance with the standards applied for inclusion in the ISSF ProActive Vessel Register (PVR).

Implementation of FAO Port State Measures Agreement (PSMA) and IOTC CMMs re Port State Measures

VIII. SIOTI Fleet landing at PSMA designated ports. The four key countries for this assessment – EU, Madagascar, Mauritius, and Seychelles – are all Party to the Port States Measures Agreement (PSMA). The latter three countries – also serving as transshipment points and home to tuna processing facilities – have provided information on designated ports to the IOTC Secretariat: Port Victoria, Mahé, Seychelles; Port Louis, Mauritius; and Antsiarana (Digeo Suarez), Madagascar. These ports are the major ports for landing of SIOTI fleet tuna catches.

IX. Relevant Gaps in PSMA membership. Based on FAO's (2018) list of Parties to PSMA, a large number of Indian Ocean countries or IOTC CPs are not yet Party to the PSMA[6]: only nine out of the 31 IOTC Parties (excluding EU) have signed on to the agreement. Non-Parties include several countries that, according to Garcia and Herrera (2018), flag coastal tuna purse seine vessels in the Indian Ocean. For the Western Indian Ocean and the purposes of this assessment, most noteworthy are Iran and Tanzania. Several Parties have not yet communicated to IOTC their designated ports under the IOTC PSMA resolution. Even fewer have officially communicated PSMA designated ports to FAO (G. Carrara *in litt.*, 14 December 2018): only Maldives and Seychelles. In terms of additional possible destination ports outside the Indian Ocean for SIOTI fleet tuna catches, Côte d'Ivoire, Ecuador, and Nigeria are not yet Party to the PSMA. It should be noted, however, that IOTC Contracting Parties may be in compliance with IOTC requirements regarding designated ports while not yet having adhered to the PMSA.

X. Inspection levels at designated ports under PSMA. Based on the Echebastar MSC certification process, there is a need for SIOTI to review and improve on the degree, and possibly the nature, of the inspections conducted of their fishing operations in relation to transshipments and landings. For example:

a. The EU, Mauritius, Madagascar, and the Seychelles have not been consistently meeting the minimum IOTC requirement for inspecting 5% of landings and transshipments, as reported in the IOTC Compliance reports, and in such instances have been identified as Non-compliant (N/C).

b. The final EU Commission report (European Commission 2016) on implementation of the EU Shark Finning Regulation documents, *inter alia*, that Spain and France are the major shark landing countries of the EU, reporting 92% of all shark landings and represented 81% of all tonnage of landed sharks reported to the EU. At the same time, the report indicated that France and Spain were two of the three countries reporting the lowest rate of inspections – in 2013, Spain reported inspecting only 0.8 landings per 100 landings and France 0.2 landings per 100 landings. While these figures relate to the global fleets of these countries, they do raise questions regarding the degree of inspection of catches taken in the Indian Ocean, and what this means for the possibility that shark finning is occurring undetected in relation to EU fleets in the Indian Ocean.

[6] Eritrea, Tanzania; Iran, Kuwait, Saudi Arabia, Yemen; Bangladesh, India, Pakistan; Cambodia, Malaysia; China

Suggested Actions for a Management Strategy to Reduce the Risk of Shark Finning and Enhance Certainty that it is not Occurring

I. SIOTI COMPLIANCE MONITORING: ENHANCING OBSERVER PROGRAMS

SIOTI producer organization policies stipulate a requirement of 100% observer coverage for all TPS vessels. Based on information from the Seychelles Fishing Authority (V. Lucas, *in litt.*, 11 April 2019), this may not yet have been fully achieved for the Seychelles-flagged fleet. The Seychelles has reported to IOTC and for this assessment 38% observer coverage for the LSTPS segment of its national fleet. While, as mentioned above, this could be an artefact of data processing or a reference to human vs. electronic monitoring, if, in fact the Seychelles, and possibly other segments of the SIOTI fleet, are not meeting the 100% observer coverage that is the SIOTI standard, this should be considered a priority issue for SIOTI to address in taking forward the findings of this assessment. Specifically, SIOTI should:

a. Investigate discrepancies between official reports of at-sea observer coverage with the relevant authorities and clarify the basis for those discrepancies, including, as necessary, working with the authorities to more accurately report, e.g., to IOTC, on the observer coverage for the SIOTI fleet. If, in fact, there are problems with the observer programs that are preventing fulfilment of the SIOTI 100% coverage, these problems should be identified and rectified,

Further, the non-OPAGAC-ANABAC portion of the SIOTI fleet is implementing a scientific observer program not a compliance monitoring program. This means that although issues with the handling of sharks as recorded by observers will be taken up with vessel owners as part of the post-trip debriefing process, there is no broader process for pursuing any violation of these policies, such that the producer organizations and, possibly, the management bodies may not receive reports of shark finning or other infractions. An additional gap arises when on-board observers are not able to cover all the activities going on at the same time, i.e., on the vessel deck and in the fish holds ((V. Lucas, *in litt.*, 11 April 2019). SIOTI has already taken a number of steps to increase capacities for observer coverage. However, to improve the level of evidence – and confidence – that shark finning is not occurring, as recommended by SFA (V. Lucas, *in litt.*, 11 April 2019), SIOTI should also:

b. Consider the necessity of implementing a fleet-wide compliance monitoring programme with the necessary capacities to record and report through the chain of management responsibility any instances of shark finning or other violations of applicable law or fleet policy.

II. SIOTI COMPLIANCE MONITORING: GUIDANCE FOR OBSERVER RECORDS AND DATA ANALYSIS

While 100% observer coverage at sea and ongoing capacity-building of observers minimizes the risk of shark finning in the SIOTI fleet, policies for collection, analysis, and reporting of observer data are essential for ensuring that incidents of shark finning are made known and addressed in accordance with prevailing laws and policies. For the Spanish and Spanish-Seychellois SIOTI fleet, AZTI Tecnalia is conducting these activities in their role as third-party compliance auditors for the OPAGAC/AGAC and ANABAC-OPTUC Code of Good Practices for Responsible Tuna Purse-Seining. However, there appears to be a need for further analysis of observer data and clarification of the standards and procedures applied by observer programmes covering the ORTHONGEL and SAPMER SIOTI vessels to confirm that there have been no incidents of shark finning that have not been reported to ORTHONGEL or potential for incidents of shark finning to not be identified or reported through appropriate channels. Similarly, the Seychelles Fishing Authority (V. Lucas, *in litt.*, 11 April 2019) reports that thorough analysis of observer data such as to identify any clear or potential incidents of shark finning has not been conducted due to lack of capacity. It is

anticipated that the recruitment of additional personnel in spring 2019 will enable more extensive analysis of observer data.

ORTHONGEL and SAPMER – and, as appropriate, SFA – should review with Oceanic Développement and IRD and take the necessary steps to:

c. clarify the observer data being collected and whether those data adequately address the need to ensure that shark finning is not occurring;

d. review existing observer data to identify any incidences of shark finning or potential shark finning; and

e. assess whether there need to be revised standards and procedures for observer programs to ensure that shark finning is not occurring and to document this when it may occur.

III. COMPLIANCE WITH IOTC MEASURES

As identified through IOTC processes, there is a need for improvements in IOTC reporting and recording related to shark finning and compliance with IOTC shark finning rules. SIOTI should consider how it can:

f. Encourage the IOTC Compliance Committee and Working Party on Implementation of Conservation and Management Measures to revise reporting templates and guidelines (e.g., the Compliance Assessment criteria) to provide for specific reporting on implementation of the prohibition on shark finning, including both the fins-naturally-attached and fin-to-carcass ratio measures required under Resolution 17/05. This explicit reporting should be incorporated in all other relevant IOTC reporting processes.

g. Encourage IOTC to adopt a comprehensive "fins-naturally-attached" requirement for sharks in 2019, recognizing that IOTC Resolution 17/05 specifically provides for review of the fins-naturally-attached measure at the 2019 IOTC meetings, and that this measure is considered the best-practice standard for implementing and monitoring shark finning prohibitions.

h. Review how it can support implementation of the Clarke (2018) recommendations regarding necessary revisions of the IOTC Shark Resolution 17/05;

i. Encourage IOTC, either as part of its compliance monitoring or as an independent exercise, to undertake a comprehensive review of national legislation of IOTC CPCs implementing IOTC Resolution 17/05, in order to assess the degree of compliance with the Resolution (as agreed at the 22nd Session of the IOTC in 2018), identify gaps, and propose options to fill those gaps.

j. Encourage additional research to document the policies and operations of TPS vessels beyond the SIOTI fleet that are fishing in the Indian Ocean and review options for technical exchange and other forms of capacity-building that can close legal and other gaps that may be enabling shark finning to continue to be practiced on these fleets.

IV. SIOTI POLICY ON SHARK FINNING AND RETAINED BYCATCH

V. SIOTI should adopt the best-practice standard for implementing the shark finning prohibition by mandating that shark fins may only be retained, carried, transshipped and landed by SIOTI fleets if "naturally attached" to carcasses. In addition to ensuring the adoption of this measure by all SIOTI partners and collaborators, this policy should be promoted by SIOTI in all other relevant fora.

VI. SIOTI Producer Organizations and members should revise their policies on shark finning to adopt the above best practice, and provide additional information on their policies on retention *versus* discard of dead sharks, as well as on measures that they have established and implement to monitor and ensure compliance with these standards.

VII. SIOTI should investigate opportunities for, and take action to promote, the development and adoption of legislation in relevant States, such as Madagascar and Mauritius, to incorporate: i) comprehensive shark finning prohibitions in all fisheries; ii) measures requiring that all sharks be landed with fins-naturally attached; and iii) other relevant policies relating to sharks and shark finning, including NPOAs under the FAO IPOA-Sharks.

VIII. SIOTI should promote transfer of technology and expertise, and otherwise stimulate and support the raising of standards as regards shark fishing and the management of incidental take by IOTC fisheries.

IX. PORT STATE MEASURES – MONITORING, CONTROL AND SURVEILLANCE OF LANDINGS AND TRANSSHIPMENTS

That the Echebastar TPS fleet was only MSC-certified for landings in Seychelles, but not in Madagascar and Mauritius indicates that there will need to be improvements in controls in those port States if MSC certification is to be secured. Significant gaps in the monitoring and control of landings and transshipments in port represent a potential risk that shark finning is occurring or can occur, despite 100% observer coverage at sea. The variability in compliance by EU, Mauritius, Madagascar, and Seychelles in implementing the requisite IOTC minimum of inspection of ≥ 5% of transshipments and landings, as noted in IOTC Compliance Committee Reports, points to the need for improved controls at these points in the supply chain. This concern is echoed by the Seychelles Fishing Authority (V. Lucas, *in litt.*, 11 April 2019), in citing the need for increased inspections in port and also at sea.

While onboard observer coverage of 20% (Garcia and Herrera 2018) is broadly considered the minimum standard for enabling statistically defensible analysis of onboard observer data for management assessment, no such minimum standard appears to have been derived for inspection of transshipments and landings in port; however, the IOTC standard of ≥ 5% is likely to be too low to ensure the level of confidence that illegal catches or activity can be detected. Increasing the rate of inspection in ports will concomitantly increase the probability of interception of illegal shark fins and increase confidence that shark finning is not occurring in TPS vessels.

n. SIOTI and its partner members should ensure that all SIOTI vessels are meeting at least the 5% IOTC requirement for inspection of transshipments and landings in port.

o. SIOTI and its partner members should advocate for and otherwise promote improved compliance with IOTC and other applicable requirements for inspections in port.

p. SIOTI and its partner members should consider options for encouraging and providing support for capacity-building for inspections and related responsibilities under the Port State Measures Agreement and related IOTC Resolutions. Such options could include provisions under the bilateral inter-governmental Sustainable Fisheries Agreements, which provide for “sectoral support;” through expanded training and extension activities through SIOTI, the producer organizations, or other inter-governmental bodies (e.g., World Bank, Indian Ocean Commission), or private-public partnerships.

q. SIOTI should consider how and to what level inspections in ports should be increased beyond the current 5% minimum, and how a revised standard would be adopted through IOTC in order to benefit interception of IUU fishing beyond shark finning.

r. SIOTI should consider the issue raised by SFA regarding increasing inspections at sea and how this might be achieved to address not only shark finning but the broader problem of IUU fishing.

Outstanding Questions and Gaps

The following issues should be clarified to confirm the findings and fill important informational gaps in this Assessment report:

- Still pending through additional interviews, is the question of what level of priority is afforded identifying and recording/reporting possible potential incidents of shark finning by Oceanic Développement and IRD and other agencies analyzing observer data for the French and Mauritian SIOTI vessels? Are incidents of shark finning incorporated into the forms for recording of data by observers? What level of compliance monitoring is undertaken in addition to the scientific data collection)?
- If observer data are not currently being analyzed at the fine level of resolution that would enable shark finning or potential shark finning to be identified, could a project be designed and implemented to review such data – possibly also the cruise reports formulated for the ORTHONGEL fleet – for a period of time to provide independent verification of the occurrence or absence of finning?
- There is a need to confirm the status of implementation of IOTC requirements re shark finning by SIOTI fleet governments beyond the EU. Specifically:
    - Is the Seychelles authorizing any of its vessels covered by the Seychelles Finning Regulations, 2006 to remove fins from sharks on board as allowed by the Regulations?
    - The limitation of the shark finning prohibition in the Seychelles Finning Regulations, 2006 to foreign vessels and local vessels of 24m or more in length would appear to be inconsistent with IOTC Resolution 05/05 and its successor 17/05. What is Seychelles Government official policy on implementation of the IOTC Resolution? At a practical level, is this exemption serving as a loophole to incentivize illegal shark finning by larger, industrial boats?
    - In this context, it should be noted that the revised Seychelles NPOA-Sharks indicates that 43 industrial TPS vessels are licensed to fish in the Seychelles EEZ. Clearly, at least one is not a SIOTI fleet vessel – how many are not covered by SIOTI? How many of these are covered by the shark finning prohibition? The NPOA states that at the time of writing, there was still some targeted shark finning by the semi-industrial fleet and that the fleet was not landing carcasses, rather applying a fin-to-carcass ratio. The NPOA states, “the feasibility/effectiveness of the enforcement of this regulation has yet to be assessed.”
    - Are Madagascar and Mauritius, as indicated in their IOTC Compliance reporting, still implementing the shark finning prohibition only through licensing and the ATFs, or have the IOTC requirements been incorporated into national law? If the former, how do the competent authorities enforce those requirements? Is this a loophole that is enabling fins from finning to be landed?
- Regarding designated ports under the PSMA and IOTC, is there a minimum set of requirements for designating and operating designated ports? This question is particularly in the light of the IOTC Compliance reports that Mauritius and Madagascar, for example, have been inspecting fewer than the minimum 5% of landings and transshipments (Madagascar reached 11% in 2016), as well as the EU Commission report on implementation of the EU shark finning requirements that France and Spain inspected < 1% of their combined reported 287,344 shark landings in 2013, and, for Spain (France did not submit a report), in 2014.
- Are there companies other than Princes Seafood, Thai Union, and Thunnus Overseas Group (such as the SAPMER Group) that process SIOTI caught tuna and may not have the same ISSF-level standards, and might this represent or provide a loophole for vessels involved in shark finning or tuna to be mixed with tuna deriving from non-SIOTI vessels that might be involved in shark finning?

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