

The North Buru and Maluku Associations, Indonesian Handline Yellowfin Tuna Fishery

Public Certification Report prepared for Anova Food, LLC

V 2.0

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Glossary

AFAD	Anchored Fishing Aggregating Device
B	Biomass
B _{current}	Average total biomass for recent years
B _{MSY}	Biomass at MSY
C, C _{latest}	Catch, Latest catch
CCM	WCPFC Commission Members, Cooperating Non-Members and Participating Territories are termed CCMs
CITES	Convention on International Trade in Endangered Species of Wild Fauna & Flora
CMM	Conservation and Management Measure
CoC	Chain of Custody
CPUE	Catch per Unit Effort
EAFM	Ecosystem Approach to Fisheries Management
EEZ	Exclusive Economic Zone
EPO	Eastern Pacific Ocean
ERA	Ecological Risk Assessment
EU	European Union
ETP	Endangered, Threatened or Protected
F	Parameter for fishing mortality
FAD	Fish Aggregating Device
F _{current}	Average fishing mortality-at-age for recent years
FFA	Forum Fisheries Agency
FFC	Forum Fisheries Committee
FEP	Fishery Ecosystem Plan
FL	Fork length
FLIM	Fishing Mortality Limit Reference Point
FMA	Fishing Management Area
F _{MSY}	Fishing Mortality at MSY
FMP	Fisheries Management Plan
FSM	Federated States of Micronesia
HCR	Harvest Control Rule
HTMC	Harmonized Minimum Terms and Conditions
IFIMS	Industry Fisheries Information Management System (for PNA)
IPOA	International Plan of Action
ISC	International Scientific Committee for Tuna and Tuna like Species in the N. Pacific
ISO	International Standard Organization
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unreported and Unregulated
IW	International waters
LRP	Limit Reference Point
M	Parameter for natural mortality
MCS	Monitoring, Control and Surveillance
MP	Management Plan
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation

MSY	Maximum Sustainable Yield
NEI	Not Elsewhere Indicated
NFD	Non-fishing day
NGO	Non-Government Organisation
NPOA	National Plan of Action
P1, P2, P3	The three guiding Principles of the MSC
PCR	Public Certification Report
PI	Performance Indicator
PICT	Pacific Island Country or Territory
PIP	Pacific Island Party (to the USA Treaty)
PITIA	Pacific Islands Tuna Industry Association
PNA	Parties to the Nauru Agreement
PNAO	Parties to the Nauru Agreement Office
PNG	Papua and New Guinea
PRI	Point of Recruitment Impairment
PSA	Productivity Susceptibility Analysis
RBF	Risk-Based Framework
RFMO	Regional Fisheries Management Organisations
ROP	Regional Observer Program
SB	Spawning stock biomass
SBcurrent	Average spawning biomass over recent years
SBMSY	Spawning biomass at MSY
SC	Scientific Committee (of the WCPFC)
SE	Standard Error
SEAPODYM	Spatial Ecosystem and Population Dynamics Model
SICA	Scale Intensity Consequence Analysis
SIDS	Small Island Developing States
SPC	Secretariat to the Pacific Community
SPREP	South Pacific Regional Environment Programme
SPTT	South Pacific Tuna Treaty (the USA Treaty)
STCZ	Sub-Tropical Convergence Zone
TAC	Total Allowable Catch
TAE	Total Allowable Effort
TCC	Technical Compliance Committee of the WCPFC
TEP	Threatened, Endangered and Protected Species
TRP	Target Reference Point
UNCLOS	United Nations Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
UoA	Unit of Assessment
UoC	Unit of Certification
VDS /LL VDS	Vessel Day Scheme (for purse seiners) / Long line Vessel Day Scheme
VMS	Vessel Monitoring System
VMEs	Vulnerable Marine Ecosystems
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

1. Executive Summary

This report presents the Marine Stewardship Council (MSC) assessment of the Yellowfin tuna (*Thunnus albacares*) fishery, harvested by vessels employing handline (hook and line) on both free sets & Anchored Fish Aggregating Devices (AFAD) sets, operating in Indonesian Waters in the Fisheries Management Areas (FMA or WPP in Bahasa Indonesia) 715. The fishery is evaluated as one Unit of Assessment (UoA), employing a single fishing gear (handline) with two different fishing methods (Free and AFADs sets), which are evaluated as separate scoring elements under Principle 2. SCS Global Services (SCS), an MSC-accredited, independent, third-party conformity assessment body, conducted the assessment following the MSC Principles and Criteria for sustainable fishing. The assessment complies with the MSC Certification Requirements and guidance v2.0. The fishery was assessed standard version of the Default Assessment Tree.

Table 1. Unit of Certification(s) and Unit of Assessment(s)

Stock/Species (FCR V2.0 7.4.7.1)	Method of Capture (FCR V2.0 7.4.7.2)	Fishing fleet (FCR V2.0 7.4.7.3)
Western and Central Pacific Yellowfin tuna (<i>Thunnus albacares</i>)	Handline (hook and line) – Free sets & AFAD sets	Fair Trade Fishermen Associations based in the Buru Regency, Indonesia and the central part of the island of Seram within the Central Maluku Regency.

Assessment Overview

The team selected to undertake the assessment includes three team members that collectively meet the requirements for MSC assessment teams, for more details on the team qualification see Section 2.1 Audit Team. These are:

- Gabriela, Anhalzer, Team Leader and Principle 2 Expert
- Sandy Morison, Principle 1 & 2 Expert
- Abdul Halim, Principle 3 Expert

The client completed the MSC Document Checklist and presented relevant documents. MSC published the fishery announcement on February 26, 2019. The team met with fishery representatives, scientists, and stakeholders on March 25-28, 2019 in Jakarta and Bali, Indonesia. Client representatives were thorough in their approach and provided the assessment team with supporting documents.

The original announcement for the assessment indicated that they might use the Risk Based Framework (RBF). Before the site visit, the assessment team confirmed the RBF would not be required. The assessment proceeded without the RBF.

A written submission was received from PNAO staff (See *Appendix 3 Stakeholder Submissions*). These comments have been considered as part of harmonization discussions with representatives of other Conformity Assessment Bodies (CABs).

Peer Review of the assessment was conducted by the MSC Peer Review College. The team responded to the Peer Review Comments (See *Appendix 2*) and made additions to some rationales, particularly in Principle, however, no changes to scores were made based on the peer review.

The report was submitted to the MSC on November 21st, 2019 for Public Comment to the MSC website on November 26th, 2019 with the public comment period closing on December 26th, 2019. During the PCDR stakeholder comments were received from ISSF and a Technical Oversight from MSC. A variation request was submitted on February 2020, requesting to submit the PCDR for a second 30-day consultation period, after stakeholder comments omitted in the first version of the PCDR were included. The second version of the PCDR was submitted to MSC on February 25th, 2020 for publication, with the consultation period closing on March 27th, 2020.

After the closure of the second consultation period, follow up comments were received from the Peer Reviewer A (See 7.2.3 *Follow-up comments to PCDR*), peer reviewer A did not submit any follow up comments. SCS also received a Technical Oversight report and follow up comments from stakeholders (see Appendix 3). After reviewing the comments, the team finalized the positive certification determination. With the posting of the Final Report commences the 15 working day objection period to close on May 6th, 2020. No objections were received

Summary of Findings

In this report, we provide detailed rationales for scores presented for each of the Performance Indicators (PIs) under Principle 1 (Stock status and Harvest strategy), Principle 2 (Ecosystem Impact) and Principle 3 (Governance, Policy, and Management system) of the MSC Standard. No PIs failed to reach the minimum Scoring Guidepost (SG) of 60, and the average scores for the three Principles remained above SG80. Based on these results, the assessment team recommends the fishery for certification.

The assessment team identified several strengths in this fishery. The fishery is under multiple levels of formal management systems: The Western Central Pacific Fishing Commission (WCPFC), the Indonesian national government, and the Maluku Provincial government. These formal management systems have implemented a suite of policies focused mainly on large-scale fishing occurring at high seas and in the Exclusive Economic Zones (EEZs). Additionally, the UoA is certified under the Fair-Trade USA Capture Fisheries Standard, which includes governance and resource management criteria. Accordingly, to respond to these requirements the UoA has in place 'informal' management measures which serve to support the management of the fishery and meet the MSC standard.

Other strengths include the status of the target species, which is known to be good, and the fishing gear employed (handline) which has a negligible impact on most ecosystem components under Principle 2.

The weaknesses identified by the assessment team are captured in the conditions described below:

The fishery received two conditions in Principle 1, two conditions in Principle 2, and two conditions in Principle 3. A Client Action Plan, detailed in Appendix 1.3., was produced to meet the conditions.

In Principle 1, two of the PIs (1.1.2 and 1.2.2) received scores under SG 80 for the yellowfin target stock. Both conditions are rooted in a lack of clear harvest control rules linked to the status of the yellowfin stock. Scores under Principle 1 are harmonized with several overlapping MSC-certified fisheries targeting yellowfin in WCPFC waters. For a description of the harmonization process and outcomes, see Background Section 3.6.

In Principle 2 two of the PIs (2.4.2 and 2.4.2) received scores under SG80, these are related to the lack of evidence of implementation of management measures and availability of information for AFADs.

In Principle 3 two of the PIs (3.1.1 and 3.2.1) received scores under SG80, these are related to the lack of an effective national legal and/or customary framework system and short- and long-term objectives within the fishery-specific management system.

2. Authorship and Peer Reviewers

2.1 Audit Team

Mr. Alexander “Sandy” Morison – Morison Aquatic Sciences – Principles 1 & 2 Expert

Mr. Morison is a consultant specializing in fisheries and aquatic sciences. He has over 30 years’ experience in fishery science and assessment at state, national and international levels and has held senior research positions for state and national organizations in Australia. He is currently chair of the Ecologically Related Species Working Group of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and has been engaged in the Kobe process for harmonisation of measures across the tuna RFMOs.

Mr. Morison has considerable experience with issues of tuna and other pelagic species through various positions in addition to his current role with CCSBT. He was Australia’s representative on the Science Working Group during the establishment of the South Pacific Regional Fisheries Management Organisation and was the inaugural chair of the Jack Mackerel Working Group during that time. He has also chaired Australia’s East Coast Tuna and Billfish Resource Assessment Group.

Mr. Morison has participated as part of a team undertaking MSC pre-assessments for several fisheries and is also trained as a lead auditor for MSC assessments (List available upon request).

Mr Morison was the facilitator for an assessment of the ecological risks from Queensland’s East Coast Trawl Fishery that looked at the full range of ecological components. He was senior author of the report that synthesised background information and the results of an expert workshop and was co-author of the summary and technical reports that described the results of the project. He was subsequently engaged to assist with an assessment of this fishery’s vulnerability to climate change.

Sandy is also contracted by the Australian Fisheries Management Authority to chair the South East Fisheries Resource Assessment Group and the Shark Fisheries Resource Assessment Group, is the Scientific Representative on the South East Fishery Management Advisory Committee and is a member of the South East Scalefish and Shark Fishery Resource Assessment Group. He has also been the scientific representative on other Resource Assessment Groups. Sandy has experience with the assessment of invertebrate, chondrichthyan and teleost fisheries including commercial and recreational fisheries in freshwater, estuarine and marine habitats and fisheries operating in tropical, temperate and polar environments.

He has particular expertise with fish age and growth and has been involved in the development and implementation of harvest strategies for several fisheries. He has over 20 publications in peer-reviewed scientific journals (8 as senior author), 8 book chapters, and over 100 project reports, technical reports, client reports and papers in workshop and conference proceedings. For more details visit: www.morisonaqsci.com.au

Mr Morison experience satisfies the MSC requirements for a Team Member as described in PC2 (FCRV2.0) with over 5 years of research experience in a marine conservation fisheries and has passed the V2.0 Team Leader MSC modules within the last 3 years (January 2019).

Mr. Morison affirms he has no conflict of interest in conducting this assessment.

Gabriela Anhalzer—SCS Global Services, Lead & Principle 2 Expert

Gabriela Anhalzer received a Masters degree in coastal environmental management from Duke University. Ms. Anhalzer has several years of experience in marine conservation and fisheries; she has worked as an independent consultant conducting evaluations of fishery improvement projects and as a fisheries policy and stakeholder specialist. She has also worked as a researcher in Latin America for sea turtle population studies, sea bird census, and supporting stakeholder engagement in participatory management of marine protected areas. She is currently the Latin America Regional Advisor for the Global Marine Commodities Project for the UNDP. Ms. Anhalzer has provided technical support for numerous MSC assessment and possess a comprehensive understanding of MSC fisheries standard and stages; meeting MSC's team leader qualifications and competency criteria. Ms. Anhalzer has received ISO 9001 auditor training, has completed the MSC training and has affirmed she has no conflict of interest.

Ms. Anhalzer satisfies the MSC requirements for a Team Leader as described in PC1 (FCRV2.0):

- Holds a Masters degree in coastal environmental management, and has over five years' experience in the fisheries sector related to stakeholder management and facilitation.
- Ms. Anhalzer has completed the V2.0 Team Leader MSC modules within the last three years (February 2019).
- Has undertaken several MSC fishery assessment and surveillance site visits as a team member in the last 5 years including: Surveillance for the southern Gulf of California Thread Herring Fishery in Sinaloa & Nayarit Mexico, the Small pelagics fishery in Sonora, Gulf of California, US Atlantic Sea Scallop Fishery, US Atlantic Spiny Dogfish Fishery, and the North-eastern Tropical Pacific Pristigaster Yellowfin and Skipjack Tuna Fishery.
- Has demonstrated experience in applying different types of interviewing and facilitation techniques., as verified by SCS records and previous audit reports.
- She is competent in the MSC Standard and current Certification Requirements, auditing techniques, and communication and stakeholder facilitation techniques, as verified by his completion of ISO 9001 auditor training.

Ms. Anhalzer affirms she has no conflict of interest in conducting this assessment.

Abdul Halim— Independent Fisheries Consultant – Principle 3 Expert

Dr. Halim has decades of technical knowledge and extensive field experience in fisheries management and policy in Indonesia, particularly with small-scale fisheries. He worked for sixteen (16) years for The Nature Conservancy (TNC) in Indonesia. He began his assignment with TNC Indonesia Marine Program as Livelihood Program Coordinator, to then become Technical and Policy Manager, Program Manager, Program Director and finally Senior Marine Policy Advisor to the Country Director. He has experienced different organizational assignments ranging from on-site conservation jobs, technical, policy (government relations) and managerial (executive) responsibilities. Example of technical tasks included development of long-term strategic and annual conservation plans and programs and their effective execution on the grounds; policy responsibilities included galvanizing political commitments from local, national, and international (especially Coral Triangle countries) governments to support

marine conservation and influencing policy and legal development; executive responsibilities include overseeing staff capacity development, ensuring prudent financial spending and maintaining good relationships with partners including donor agencies and all relevant units/programs within TNC globally.

Dr. Halim has been working as a Senior Independent Consultant since the past three years with various organizations, mainly Non-Government Organizations (NGOs) and projects working in Indonesia including, Environmental Defense Fund/Yayasan Bina Usaha Lingkungan (EDF/YBUL), Wildlife Conservation Society (WCS), Rare, Coral Triangle Center (CTC) and USAID Sustainable Ecosystem Advanced (SEA) project. Most of his assignments included productions of various policy and legal analysis and recommendations in the field of small-scale fisheries, rights-based fisheries management and alignment of conservation with fisheries management to inform the development and revision of policies, regulations, and laws, including the Fisheries Law of Indonesia.

Dr. Halim was an active member of Indonesian delegation to the Conference of Parties of the UN Convention on Biological Diversity (UNCBD) up until a few years ago. He has also authored and co-authored several publications around fisheries management and marine conservation at peer-reviewed international journals such as Marine Policy and Ocean and Coastal Management. He holds a Doctorate Degree from Bogor Agricultural University (IPB), Indonesia, on small-scale fisheries management, a Master of Arts (MA) in Marine Affairs from the University of Rhode Island, USA and a Bachelor in Fisheries from Bogor Agricultural University (IPB), Indonesia.

Dr. Halim's experience satisfies the MSC requirements for a Team Member as described in PC2 (FCRV2.0) with over 5 years management experience in marine conservation fisheries and has passed the V2.0 Team Member MSC modules within the last 3 years (February 2019).

Dr. Halim affirms he has no conflict of interest in conducting this assessment.

The fishery team collectively complies with the qualification and competency criteria listed in Table PC3:

- Mr. Morison has over 25 years' experience with a wide variety of fishery assessment models including the types of integrated assessments that are used for the key tuna species in the WCPFC. This experience has been gained by being a member of and chairing the scientific groups responsible for selecting assessment methods, critically reviewing the outputs of such models and providing management advice based on those outputs.
- Mr. Morison has decades of experience working with the biology and population dynamics of tuna species and other species with similar biology: In his career as a fisheries scientist, including as a senior scientist on State, National, and International scientific groups, Mr. Morison has gained experience with a broad range of fisheries including invertebrate, chondrichthyan and teleost fisheries; commercial and recreational fisheries; freshwater, estuarine and marine fisheries; and fisheries operating in tropical, temperate and polar environments. The includes tuna and other pelagic fisheries.

- Has over 25 years' experience with a wide variety of fishery assessment models including the types of integrated assessments that are used for the key tuna species in the WCPFC. This experience has been gained by being a member of and chairing the scientific groups responsible for selecting assessment methods, critically reviewing the outputs of such models and providing management advice based on those outputs.
- Dr. Halim has well over 5 years of experience fisheries management and policy analysis as demonstrated by his tenure at TNC's Indonesia Marine Program as Technical and Policy Manager, Program Manager, Program Director, and Senior Marine Policy Advisor.
- Dr. Halim has over 5 years of experience as a practicing fishery policy analyst, as evidenced by his publication list detailed in his CV which includes: Halim, A., et al. 2018. Developing a functional definition of small-scale fisheries in support of marine capture fisheries management in Indonesia. Marine Policy; Halim, A., et al. L. 2017. *Konsep hak pengelolaan perikanan sebagai alat pengelolaan perikanan berkelanjutan di Indonesia*. Jurnal Kebijakan Perikanan Indonesia (JKPI) 9 (1): 11-20.
- As a native to Indonesia Dr. Halim has knowledge of a common language spoken by clients and stakeholders; and has decades of fishery work experience in Indonesia.
- Both Mr. Morison and Ms. Anhalzer have passed the MSC's Traceability module in January 2019 and February 2019, respectively.
- Ms. Anhalzer has completed the MSC's RBF training course (February 2019).

2.2 Peer Reviewers

For Peer Review College

The Peer Review Draft Report, incorporating the client action plan and conditions, scores, weightings and a draft determination was sent to the MSC Peer Review College.

SCS obtained confirmation from the Peer Review College that the selected peer reviewers did not have any conflicts of interest in relation to the fishery and that the competencies of the peer reviewers match the required competencies

Two peer reviewers will be selected from the following short list by the Peer Review College:

- Carola Kirchner
- Giuseppe Scarcella
- Joe Powers
- Sandra Diamond-Tissue
- Sophie Des Clers

Further details of their experience are available on request by email to the Peer Review College¹.

The peer reviewer comments, incorporated in this report (Appendix 2), were addressed by the assessment team, the team responses to those comments are also included (Appendix 2)

¹ PeerReviewCollege@msc.org

3. Description of the Fishery

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

3.1.1 UoA and Proposed Unit of Certification (UoC)- Considered Final as Published in the Public Certification Report

The Unit of Assessment includes the Western and Central Pacific Yellowfin tuna stock caught by the vessels that belong to Fair Trade Fishermen Associations organized in two Committees located in the north of Buru island and the central north part of the island of Seram, located in the province of Maluku, Indonesia. There are currently nine and three fishing associations, located in North Buru and northern-central Seram respectively. There is a total of 123 vessels registered (Table 3). Fishers use handlines (hook and line) to target yellowfin tuna, employing two fishing methods: fishing on free tuna schools or on AFADs. The vessels fish within the Maluku province in Fishing Management Area (FMA/WPP) 715.

This fishery has been found to meet scope requirements (FCR v2.0 7.4) for MSC fishery assessments as it

- Does not operate under a controversial unilateral exemption to an international agreement, use destructive fishing practices, does not target amphibians, birds, reptiles or mammals and is not overwhelmed by dispute. (FCR 7.4.1.1, 7.4.1.2, 7.4.1.3, 7.4.2)
- The fishery does not engage in shark finning, has mechanisms for resolving disputes (FCR 7.4.2.1), and has not previously failed assessment or had a certificate withdrawn.
- Is not an enhanced fishery, is not based on an introduced species and does not represent an inseparable or practically inseparable species (FCR 7.4.3, 7.4.4, 7.4.13-15)
- Does not overlap with another MSC certified or applicant fishery (7.4.16),
- And does not include an entity successfully prosecuted for violating forced labor laws (7.4.1.4)
- The Unit of Assessment, the Unit of Certification, and eligible fishers have been clearly defined, traceability risks characterized, and the client has provided a clear indication of their position relative to certificate sharing (7.4.6-7.4.12).

Table 2. Unit of Assessment (UoA) and Unit of Certification (UoC).

Units of Assessment: Defined as the species, gear, and fleet assessed	
UoA: Species & Stock (FCR V2.0 7.4.7.1)	Western and Central Pacific Yellowfin tuna (<i>Thunnus albacares</i>)
UoA: Gear Type (FCR V2.0 7.4.7.2)	Handline (hook and line) – Free sets & anchored FAD sets
UoA: Vessels (FCR V2.0 7.4.7.3)	Vessel registered to the Fair Trade Fishing Associations based in North Buru and the central-north Seram.
Further information: Geographic Area	Fishing takes place in the Indonesian Province of Maluku in FMA 715
Further information: Management System	There are multiple levels of management at the WCPFC, the Indonesian national government, the Maluku Provincial government and the informal measures followed by the Fair Trade Fishing Associations.
Unit of Certification: Defined as the vessels allowed to use the MSC ecolabel for catch from the Unit of Assessment (defined as the species, location and gear assessed against the MSC standard).	
Client Group	Entities that are part of the client group: <ul style="list-style-type: none"> • Anova Food, LLC • Coral Triangle Processors, LCC • PT. Harta Samudra • North Buru Fair Trade Fishermen Associations
Fishers in the UoC for the chosen stock	Fair Trade Fishermen associations based in North Buru.
Other Eligible Fishers that may join the certificate for the chosen stock	Fair Trade Fishermen associations based in the northern central part of the island of Seram.

Table 3. Fair Trade Fishing Associations that belong to the UoA

No	Name of Fishers Association	FT fishermen
1	Labuang Barat	5
2	Tagalisa Tuna	8
3	Latamiha	31
4	Waeplabung	12
5	Leisela Indah	14
6	Wamlana Indah	13
7	Setia Selalu	14
8	Sinan Bersatu	12
9	Wamrugut	14
North Buru TOTAL		123
1	Pantura Parigi	18
2	Tuna Parigi	15
3	Parigi Indah	15
		18
North Seram TOTAL		48

3.1.2 Total Allowable Catch (TAC) and Catch Data

There is no TAC established for this fishery. The annual catches for the UoC for free and AFAD sets in 2018 were 29,029.15 kg and 14,773.42 kg, respectively (Table 4).

Fishing effort in the UoA is concentrated on free sets; the percentage of catch originating from anchored FADs is estimated to be ~ 6-30% (Table 5).

Table 4. Total yellowfin tuna catches in metric tons for the WCPFC Convention Area (CA); and catch for the UoAs captured by handline in free and AFAD sets from data from I-Fish.

Year	WCPFC-Convention Area mt	UoC catch (free sets) mt	UoC catch (AFAD) mt.
2018		29.0	14.7
2017	670,890	55.7	8.0
2016	643,670	71.8	2.6

3.1.3 Scope of Assessment in Relation to Enhanced Fisheries

There is no evidence of enhancement in this fishery.

3.1.4 Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)

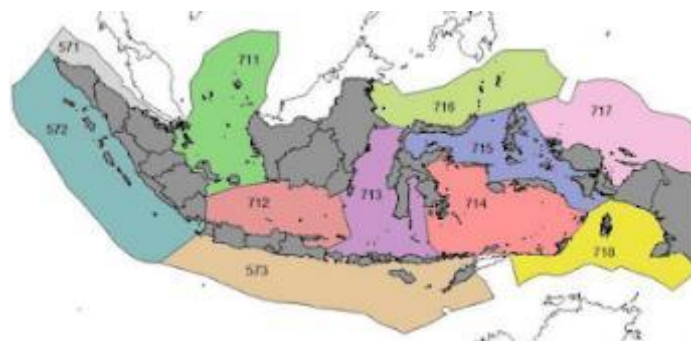
There is no evidence of introduced species in this fishery.

3.2 Overview of the Fishery

3.2.1 Location, Areas, and History of the Fishery

The Indonesian Handline Yellowfin tuna fishery takes place within Indonesia's Exclusive Economic Zone (EEZ) in the Maluku Province in the Western Central Pacific Ocean in FAO Area 71. The location fisheries management areas consist of Indonesian Waters² and the Fisheries Management Area (FMA or WPP in Bahasa Indonesia) WPP 715 (Tomini Bay, Maluku Sea, Halmahera Sea, Seram Sea, and Berau Bay) (See Figure 1).

The Indonesian Handline Yellowfin tuna fishery is a small artisanal fishery, accounting for approximately less than 0.001% of the total yellowfin catch in the WCPFC (Table 4). The Maluku Handline Yellowfin tuna fishery operates on small one or two-manned vessels (<5GT) which conduct one-day long fishing trips in Fishery Management Area (FMA) 715. The fishery has been in a Fishery Improvement Project (FIP) since 2011 and certified under the Fair Trade USA Capture Fisheries Standard since October 2014. FIP activities, implemented by Masyarakat Dan Perikanan Indonesia (MDPI) and supported by Anova Food USA and the International Pole and Line Foundation (IPNLF), have mainly focused on data collection, fishing licenses, vessel registration, ETP awareness workshops, and co-management with fisheries stakeholders at a provincial level. Fair Trade activities include the premium used for supporting local community development and environmental projects, safety-at-sea at training and fisheries management capacity building.



² The term 'Indonesian Waters' follows the description in Indonesia's Act No. 6 of 8 August 1996: "The territories of the Indonesian waters comprise the Indonesian territorial sea, the archipelagic waters and the inland waters" (Article 3.1). The Indonesian Archipelagic waters are those enclosed within the archipelagic baseline, which is drawn using the archipelago's straight baseline connecting the outermost points of the low-water line of the islands and the most outside dry rocks of the Indonesian archipelago (Article 5). The Indonesian territorial sea is a twelve nautical miles wide stretch measured from the Indonesian archipelagic baseline (Article 3.2). The Indonesian inland waters are all waters located on the land side of the low-water line from the coasts of Indonesia (Article 3.4).

Figure 1. Map of the Indonesia Fisheries Management Areas (WPP) in Indonesia

3.2.2 Organization and User Rights

The main components of management for the Indonesian Handline Yellowfin tuna fishery are the Western Central Pacific Fisheries Commission (WCPFC) at the regional level. The Indonesian Government at the national level is responsible for fisheries management and implementation outside the 12 nm zone. Provincial governments manage the area from 0-12 nm.

The WCPFC is responsible for the management of tuna resources within its Convention areas, which includes Indonesia's EEZ in the Pacific Ocean. The UoAs in the fishery undergoing assessment, fish primarily within the 12 nm of Indonesian waters. Archipelagic and territorial waters are not included within the WCPFC's convention area and are subject to the sovereignty of coastal states. Indonesia's Archipelagic Waters (AW), are managed under the country's national jurisdiction. As a member of the WCPFC, Indonesia is required to follow article 8 of the WCPFC Convention which requires measures in national jurisdiction to be compatible with Conservation and Management Measures (CMMs) in the WCPFC's Convention Area.

In Indonesia, the marine waters are divided into 11 Fisheries Management Areas (FMAs or WPPs in Bahasa Indonesia). Within Indonesian waters, effort of the fisheries is controlled through number of vessels allocated to each WPPs by the Indonesian Ministry of Marine Affairs and Fisheries (MMAF).

MMAF is responsible for the licensing and overall national policy. Vessel operations are controlled by the Fishery Surveillance Office (PSDKP) in Jakarta. Vessels that are smaller than five gross tonnes (GT) are considered artisanal and required to register with the provincial government. The National Tuna Management Plan (NTMP) sets the management framework, stock status/baseline, and strategic management objectives and time-bound milestones for the different types of tuna fisheries (per WPP area) for Indonesia.

3.2.3 Description of Fishing Practices: Gear

Fishing within the UoA is conducted solely using handlines to target either free sets or Yellowfin tuna associated with AFADs. Handline is a fishing method where a line with a hook that, typically baited, is placed into the water from either an anchored or moving boat. Once a bite occurs, the fish are hauled onto the boat by hand. There are small variations in techniques in which handline is employed, including troll line, kite, float, *pancing ulur-handline*, and jigging. Vessels in the UoA are small open craft that fish close to shore on day trips and usually with only one fisher on board.

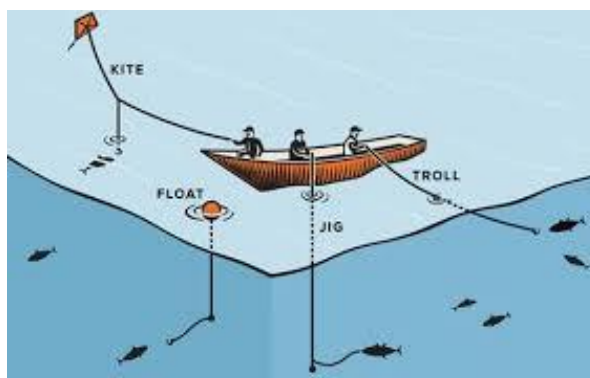


Figure 2. Yellowfin handline fishing gear description (Figure from [This Fish](#)).

One of the gear types utilized in the fishery consists of handline vessels fishing on Anchored Fish Aggregating Devices (AFADs). Anchored FADs are constructed with four main components: a buoy (float); an attractor; a mooring line and a sinker (anchor). These components are usually made by sourcing local materials such as rocks, coconut leaves and bamboo.

In north Seram, FADs are mostly constructed locally made from piles of bamboo rafts and use coconut leaves as attractors beneath. In north Buru, fishers have opportunistically utilized a buoy from Purse Seine FAD, and then reassembled for their FADs. In Buru fishers also use Styrofoam wrapped in ropes as a buoy.

Fishing effort in the UoA is concentrated on free sets; the percentage of catch originating from anchored FADs is estimated to be ~ 6-30% (Table 5). The fishery has seen a steady increase in catch coming from AFADs over the last couple years.

Table 5. The average composition of Indonesian Handline Yellowfin tuna fishery on free sets vs AFADs.
Source MDPI

Gear type	Percentage of vessels with length < 15m (>5 GT)
Handline free sets	3646 trips (85%)
Handline anchored FAD sets	622 trips (15%)

3.2.4 Seasons

The fishery operates year-round, but the highest landings occur during Jan, Mar, Apr, May, July until Dec (Figure 3). Historically low landings occur on February and June, and sometimes August because poor weather conditions during these months typically result in fishers not going out to sea.

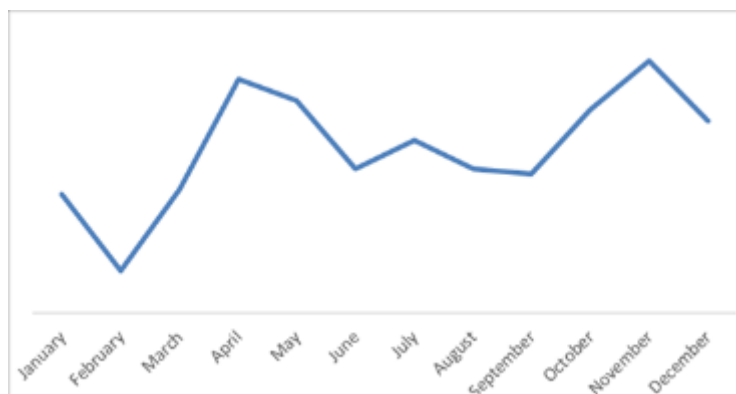


Figure 3. Fishing seasons (North Buru and North Seram).

3.3 Principle One: Target Species Background

3.3.1 Yellowfin tuna

Taxonomic classification

Class: Actinopterygii

Order: Perciformes

Family: Scombridae

Genus: *Thunnus*

Species: *albacares*

Behaviour

Yellowfin tuna are a large, schooling tuna, common in surface waters of tropical and sub-equatorial oceans (Molony 2008). Tagging with acoustic transmitters or ultrasonic tags has shown yellowfin spend a majority of their time in the upper mixed layer of the ocean (less than 100 m) and typically in temperatures above 17–18°C (Molony 2008).

Yellowfin tuna feed on other fish, crustaceans and squid. Their trophic level has been estimated at 4.4 ± 0.4 se. They are not a low trophic level species.

Growth and Natural Mortality

Growth in length for yellowfin tuna is estimated to continue throughout their life (Figure 4). The estimated mean length of the final age-class is 153.4 cm, but the maximum fork length is over 200 cm.

Natural mortality is estimated to vary with age and by sex. The generally increasing proportion of males in the catch with increasing size is assumed to be due to an increase in the natural mortality of females, associated with sexual maturity and the onset of reproduction. The assessment model used fixed externally-estimated values for natural mortality-at-age but also examined the sensitivity to estimating this during the model fitting process.

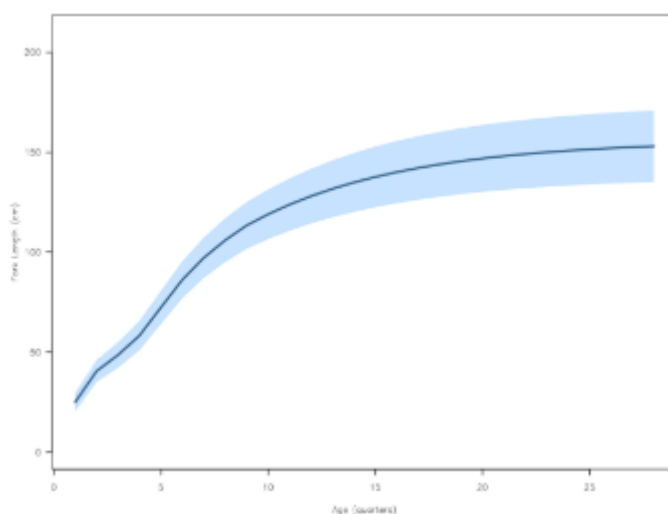


Figure 4. Yellowfin tuna: estimated growth for the diagnostic case model. The blue line represents the estimated mean fork length (cm) at-age and the blue region represents the length-at-age within one standard deviation of the mean, for the diagnostic case model (from Tremblay-Boyer et al. 2017).

Reproduction and Recruitment

Yellowfin tuna start to mature at five years of age, but when information on sex ratios, maturity at age, fecundity, and spawning fraction are included, the reproductive output is found to peak between 10 and 15 years of age (Figure 5). Spawning occurs throughout the year in the core areas of distribution, but peaks are always observed in the northern and southern summer months respectively. Individuals may spawn every few days over the spawning period. Larval distribution in equatorial waters is transoceanic the year-round but there are seasonal changes in larval density in subtropical waters.

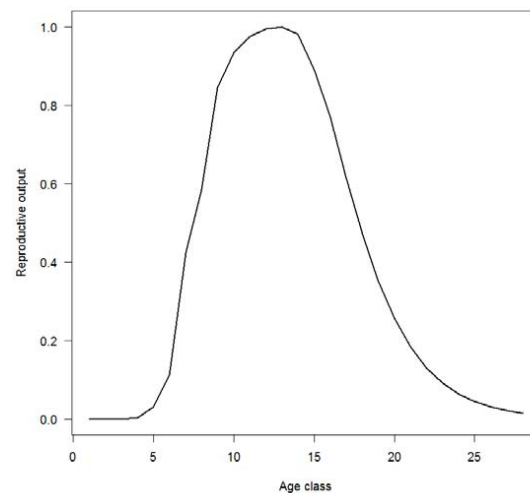


Figure 5. Yellowfin tuna: Index of spawning potential incorporating information on sex ratios, maturity at age, fecundity, and spawning fraction (from Davies et al. 2014).

Distribution and Stock Structure

Yellowfin tuna are found worldwide in tropical and subtropical seas. The thermal boundaries of occurrence are roughly 18° and 31°C.

Although the distribution of yellowfin tuna in the Pacific is nearly continuous, lack of evidence for long-ranging east-west or north-south migrations of adults suggests that there may not be much exchange between the yellowfin tuna from the eastern and the central Pacific, nor between those from the western and the central Pacific. This suggests the existence of subpopulations and although early publications have suggested limited variation within the Pacific (Ward et al., 1994), recent studies with improved techniques have suggested a finer scale genetic stock structure (Aguila et al. 2015, Grewe et al. 2015, Grewe et al., 2016) that is not considered within the current stock assessment (Tremblay-Boyer et al. 2017).

Nevertheless, for the purpose of WCPFC yellowfin stock assessments, the stock within the domain of the model area (essentially the WCPO, west of 210°E, Figure 21) has been considered as a discrete stock unit (Davies et al. 2014). This area has been disaggregated into model regions (Figure 6) so as to describe to some extent spatial processes (such as recruitment and movement) and fishing mortality within regions (Tremblay-Boyer et al. 2017).

There is a large amount of tagging data (1989-2012) which indicates extensive latitudinal movements among the equatorial regions but also a level of longitudinal movements to and from the sub-tropical latitudes (Figure 7). The movement of tagged fish among regions is used in the stock assessment to estimate movement coefficients among different regions. A new regional structure proposed for the current stock assessment, with region boundaries shifted from 20° N to 10° N, was suggested by the PAW based on few movements between tropical tag release sites and temperate zones for bigeye tuna (McKechnie et al., 2017a).

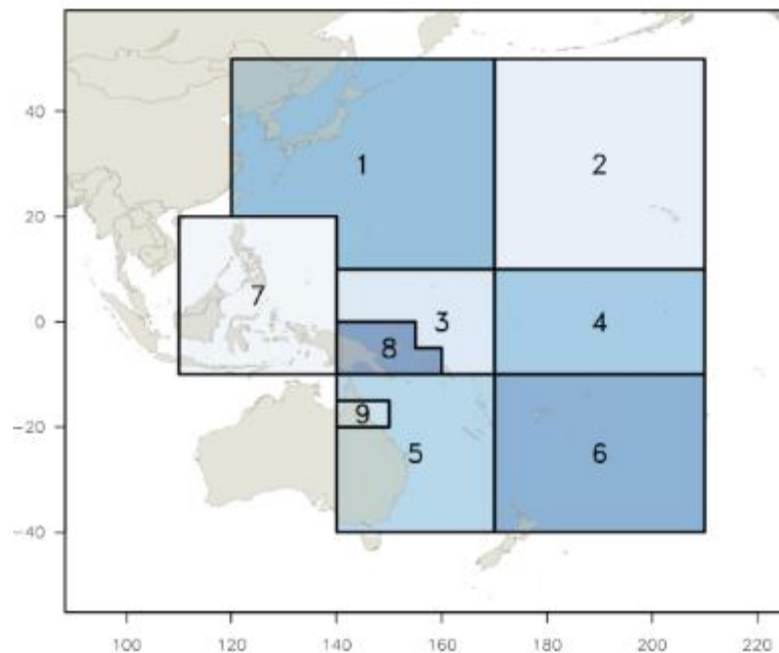


Figure 6. Yellowfin tuna: the geographical area covered by the stock assessment and the boundaries for the 9 regions when using the “2017 regional structure” (from Tremblay-Boyer et al. 2017).

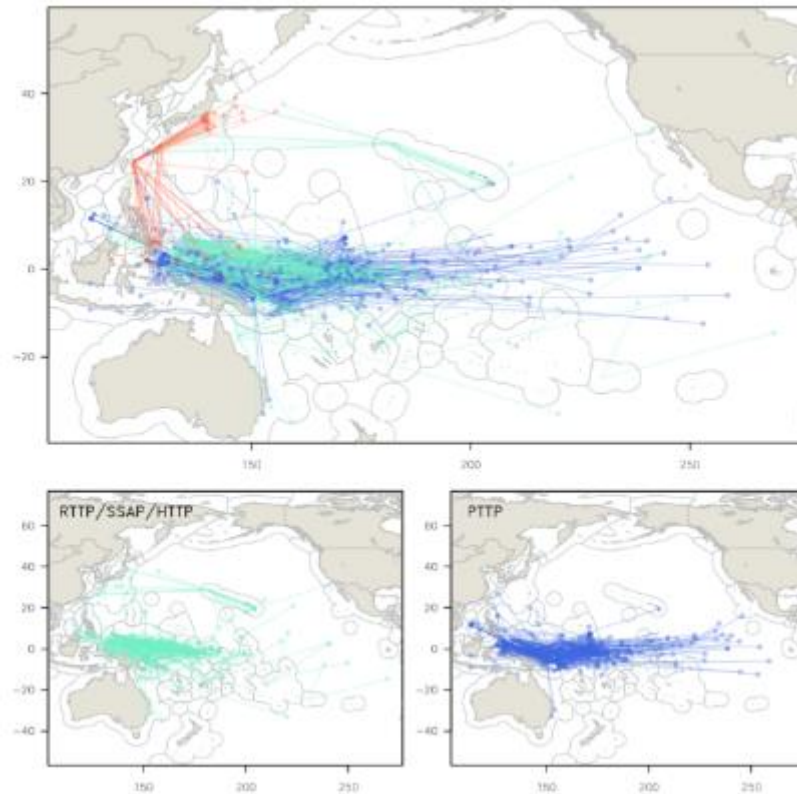


Figure 7. Map of the movements of tagged yellowfin tuna released in the Pacific Ocean and subsequently recaptured more than 1,000 nautical miles from their release site. RTTP – Regional Tuna Tagging Project, SSAP – (?), HTTP – (?), PTTP – Pacific Tuna Tagging Program. (from Tremblay-Boyer et al.2017).

Catch

The catch by the UoC is shown in (Table 4). The total catch from the whole stock, as used in the most recent stock assessment, shows the continued dominance of catches by purse seines (Figure 8). This catch has been taken from all the regions used in the assessment, and the relative importance of each region has varied over time (Figure 9) (the location of modeled regions are shown in Figure 6).

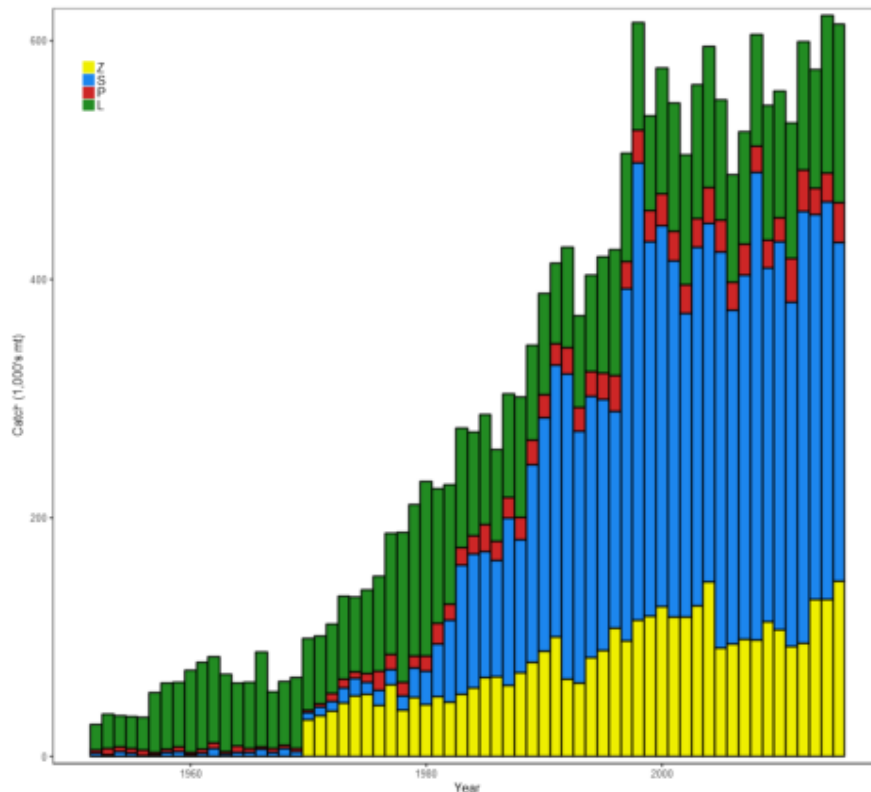


Figure 8. Yellowfin tuna: time series of total annual catch (1000's MT) by fishing gear for the diagnostic case model over the full assessment period. The different colours refer to longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow). Note that the catch by longline gear has been converted into catch-in-weight from catch-in-numbers and so estimates differs from the annual catch estimates presented in (Williams and Terawasi, 2017), however these catches enter the model as catch-in-numbers (from Tremblay-Boyer et al. 2017).

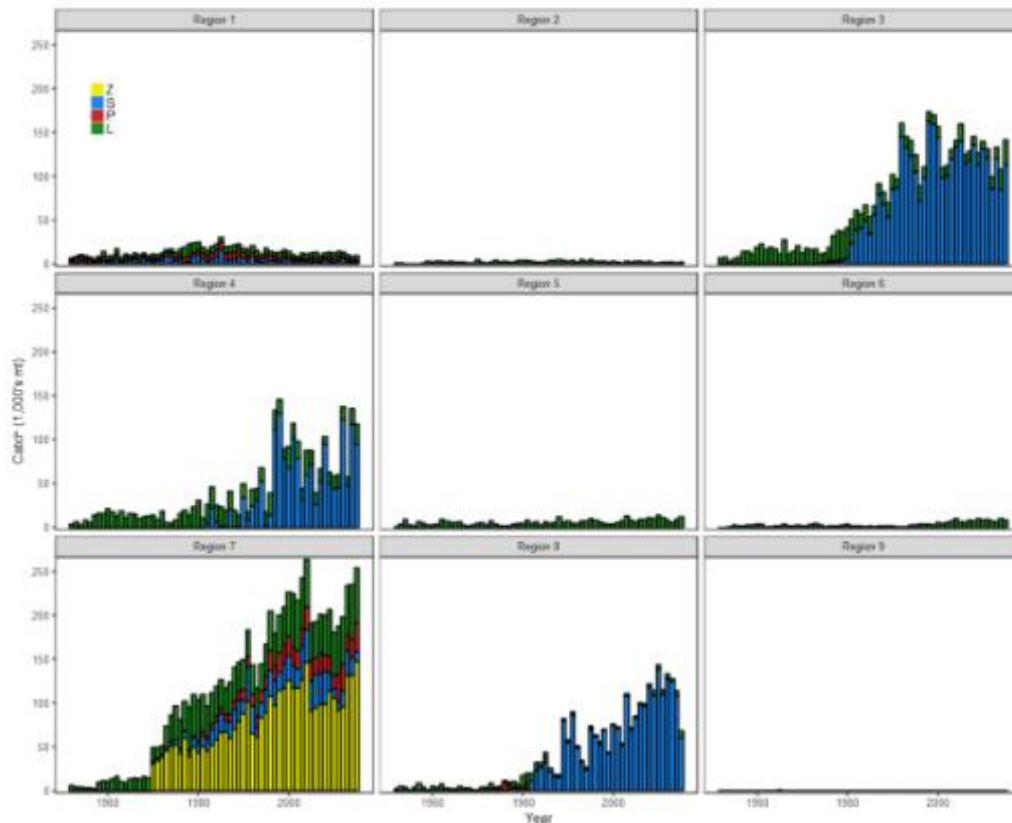


Figure 9. Yellowfin tuna: time series of total annual catch (1000's mt) by fishing gear and assessment region from the diagnostic case model over the full assessment period. The different colours denote longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow) (from Tremblay-Boyer et al. 2017).

The catch of handline gear is not clearly accounted at the WCPC level. Troll gear and several artisanal gears, employed mostly in eastern Indonesia and the Philippines, are estimated to account for 13% of catch in 2017 (WCPFC 2018).

Stock assessment

Stock assessments for yellowfin tuna have been conducted regularly and almost annually since 1999. Furthermore, an independent review of the 2011 bigeye tuna assessment (Ianelli et al., 2012) had several recommendations for improvement that apply equally to the yellowfin assessment, and these have been incorporated into the current assessment wherever possible. The assessment model uses MULTIFAN-CL and is based mainly on catch and effort data for various fleets, size data, and tagging data. Small vessels in Indonesia and Philippines are excluded from effort estimates (WCPFC 2018).

The most recent assessment (Tremblay-Boyer et al. 2017) was an update of the previous assessment (Davies et al., 2014) but also addressed relevant recommendations of that assessment report, including an investigation of an alternative regional structure, exploration of uncertainties in the assessment model, particularly in response to the inclusion of additional years of data, and improving diagnostic weaknesses of previous assessments.

In addition to the diagnostic case model, it reported the results of one-off sensitivity models to explore the relative impacts of key data and model assumptions for the diagnostic case model on the stock assessment results and conclusions. It also undertook a structural uncertainty analysis (model grid) for consideration in developing management advice where all possible combinations of the most important axes of uncertainty from the one-off models were included. In comparison to previous assessments, less emphasis was placed on the diagnostic case model. Instead, Tremblay-Boyer et al. (2017) recommended that management advice be formulated from the results of the structural uncertainty grid (Table 6).

Across the range of model runs in this assessment, the key factor influencing estimates of stock status was the size data weighting value. Down-weighting the influence of the size data led to more pessimistic stock status estimates.

Based on the results of the model grid, the general conclusions were:

1. The grid contained a wide range of models with some variation in estimates of stock status, trends in abundance and reference points. However, biomass was estimated to have declined throughout the model period for all models in the grid. Those declines were found across most tropical and temperate regions of the model.
2. Across the model grid, the terminal depletion estimated for the majority of runs estimate stock status levels to be above the 20% SB $F=0$. The range of SB latest /SB $F=0$ values was 0.18 to 0.45. Only two runs (<5%) fell below the LRP of 20% SB $F=0$. The median estimate (0.33) was comparable to that estimated from the 2014 assessment grid, noting the differences in grid uncertainty axes used in the two assessments.
3. Corresponding estimates of $F_{\text{recent}} / F_{\text{msy}}$ ranged from 0.58 to 1.13, with 2 out of the 48 runs (<5%) indicating that $F_{\text{recent}} / F_{\text{msy}} > 1$. The median estimate (0.75) was also comparable to that estimated from the 2014 assessment grid.
4. Fishing mortality for adult and juvenile yellowfin tuna was estimated to have increased continuously since the beginning of industrial tuna fishing (seen in the diagnostic case model). In general, these had been on average higher for juveniles, but in recent years adult fishing mortality had also increased. A significant component of the increase in juvenile fishing mortality was attributable to the Philippines, Indonesian and Vietnamese surface fisheries,

which have the most uncertain catch, effort and size data. The work of the WPEA project to assist in enhancing the current fishery monitoring programme and improving estimates of historical and current catch from these fisheries remains important given the contribution of these fisheries in the overall fishing impact analyses from this assessment.

5. The significance of the recent increased recruitment events and the progression of these fish to the spawning potential component of the stock were encouraging, although whether this was a result of management measures for the fishery or beneficial environmental conditions was currently unclear. It was noteworthy, however, that recent favourable recruitment events had also been estimated for skipjack (McKechnie et al., 2016a) and bigeye (McKechnie et al., 2017a) in the WCPO, and bigeye in the EPO (Aires-da Silva et al., 2017), which may give weight to the favourable environmental conditions hypothesis. Whether these trends are maintained in coming years will help separate these factors and will likely provide more certainty about the future trajectories of the stock.
6. There remained a range of other model assumptions that should be investigated either internally or through directed research. Briefly, the apparent non-linear impact of the weighing on the size composition data on population estimates, and the conflict between the abundance indices and the tagging data for region 8 were worthy of note. Also, biological studies to improve our estimates of growth of yellowfin within the WCPO, for instance through direct ageing of otoliths as was done in bigeye, should be considered a high priority.

Over the period 1965-2014, recruitment on average displays very little trend and the uncertainty decreases substantially since the mid 1965s (Figure 12). Biomass has declined steadily over the model period, but in the most recent years, that decline has slowed and shows a small increase in the last two years (Figure 13). Although the age-specific selectivity patterns produce a much higher MSY in the early period of the fishery compared to the recent estimates, the catch has always been less than MSY (Figure 14).

Table 6. Yellowfin tuna: Summary of reference points over all 72 individual models in the structural uncertainty grid (from Tremblay-Boyer et al. 2017).

	Mean	Median	Min	25%	75%	Max
C_{latest}	612742	613430	606762	612107	614237	615350
MSY	673589	674400	539200	635300	713400	795200
$Y_{F_{recent}}$	647239	644000	534400	614200	681300	739600
f_{mult}	1.36	1.37	0.88	1.22	1.51	1.86
F_{MSY}	0.12	0.11	0.07	0.11	0.12	0.16
F_{recent}/F_{MSY}	0.75	0.73	0.54	0.66	0.82	1.13
SB_{MSY}	589514	609000	186800	501800	718650	946800
SB_0	2335931	2438500	1197000	2065250	2731000	3256000
SB_{MSY}/SB_0	0.25	0.26	0.15	0.23	0.27	0.34
$SB_{F=0}$	2207825	2301517	1193336	2034075	2509122	2845244
$SB_{MSY}/SB_{F=0}$	0.26	0.26	0.16	0.25	0.29	0.35
SB_{latest}/SB_0	0.35	0.36	0.18	0.30	0.40	0.45
$SB_{latest}/SB_{F=0}$	0.37	0.39	0.16	0.30	0.43	0.50
SB_{latest}/SB_{MSY}	1.42	1.41	0.80	1.24	1.62	1.91
$SB_{recent}/SB_{F=0}$	0.33	0.35	0.15	0.27	0.39	0.45
SB_{recent}/SB_{MSY}	1.42	1.43	0.81	1.28	1.59	1.93

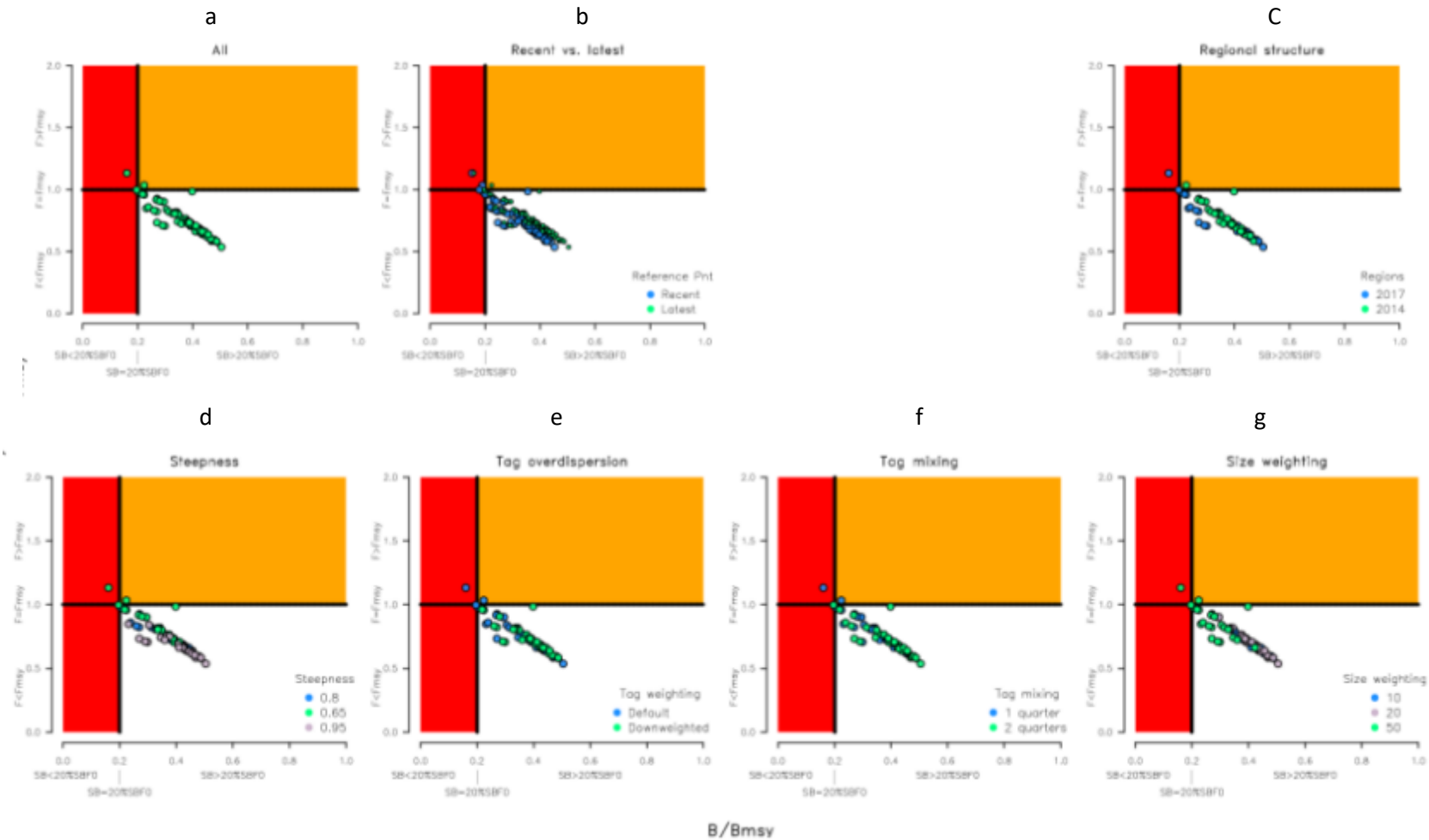


Figure 10. Yellowfin tuna: Majuro plots summarising the results for each of the models in the structural uncertainty grid. The plots represent estimates of stock status in terms of spawning biomass depletion (B/B_{msy} - X-axis) and fishing mortality (F/F_{msy} - Y-axis). The red zone represents spawning biomass levels lower than the agreed limit reference point, which is marked with the solid black line. The orange region is for fishing mortality greater than F_{MSY} (F_{MSY} is marked with the black dashed line). The points represent $SB_{latest}/SB_{F=0}$ for each model run except in panel (b) where $SB_{recent}/SB_{F=0}$ is also displayed. Panels (c)–(g) show the estimates for the different levels for the five axes of the grid. (from Tremblay-Boyer et al. 2017).

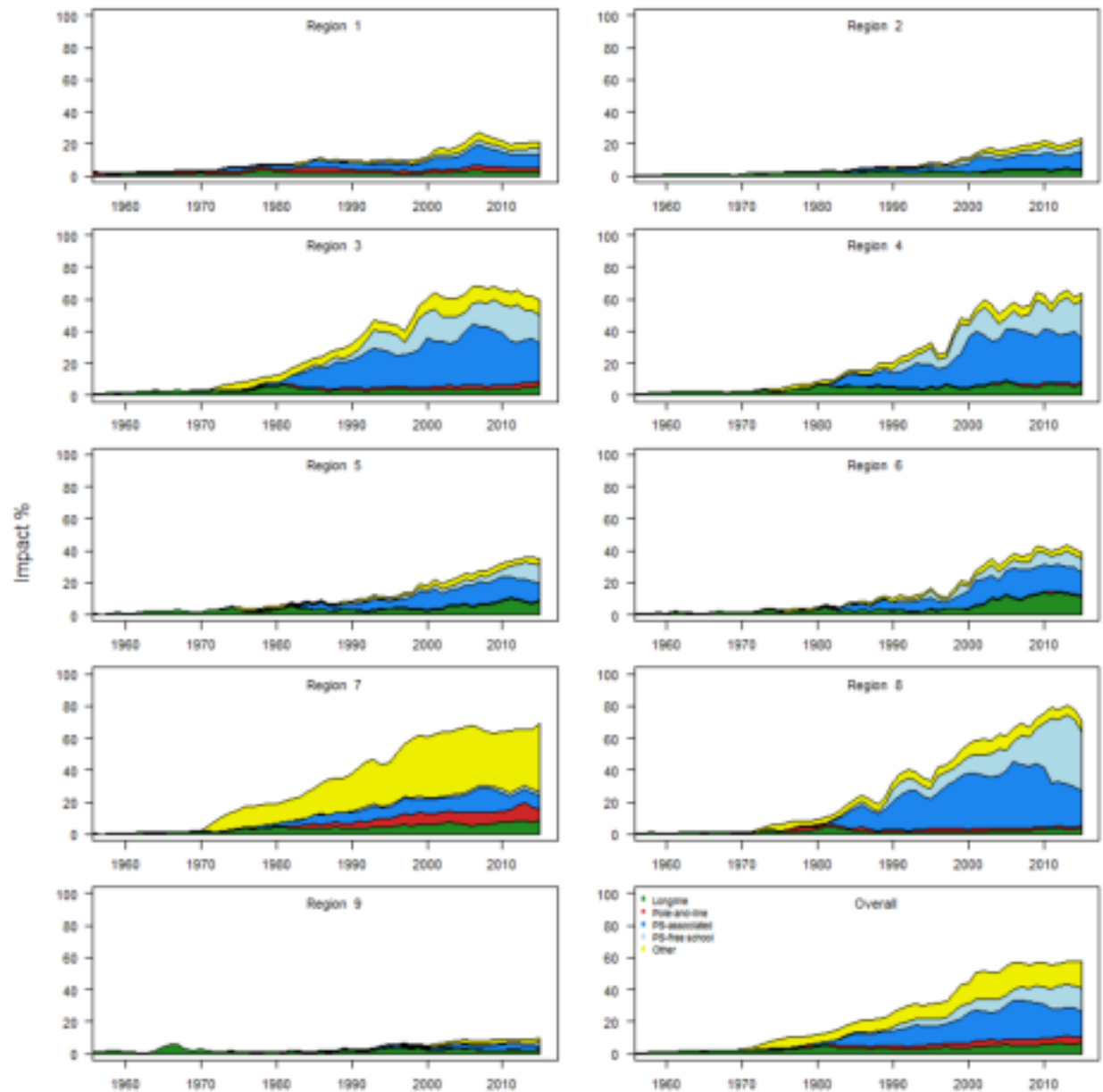


Figure 11. Yellowfin tuna: estimates of reduction in spawning potential due to fishing (fishery impact = $1 - \text{SB}_{\text{latest}} / \text{SB}_{F=0}$) by region, and over all regions (lower right panel), attributed to various fishery groups for the diagnostic case model (from Tremblay-Boyer et al. 2017).

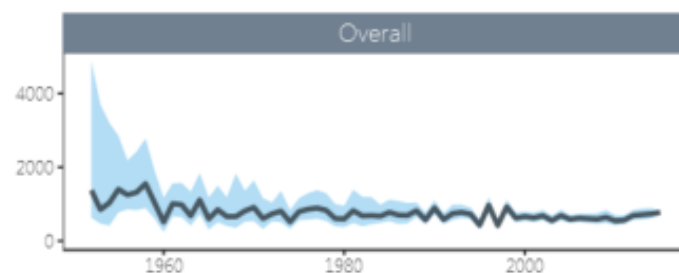


Figure 12. Yellowfin tuna: estimated annual, temporal recruitment (in millions with 95% confidence intervals as the blue shaded regions) for the whole WCPO for the diagnostic case model (from Tremblay-Boyer et al. 2017).

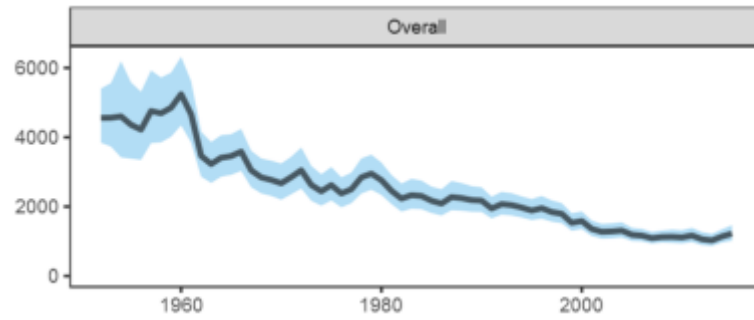


Figure 13. Yellowfin tuna: estimated temporal spawning potential (in thousands of tonnes, with 95% confidence intervals as the blue-shaded regions) for the whole WCPO for the diagnostic case model (from Tremblay-Boyer et al. 2017).

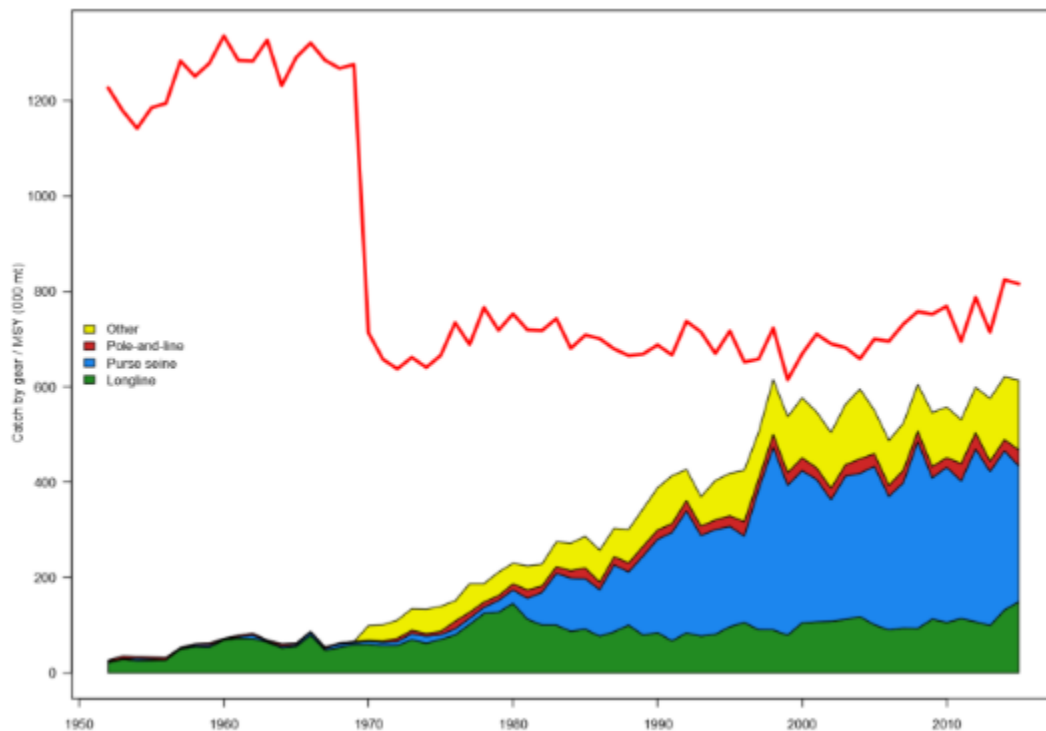


Figure 14. History of the annual estimates of MSY (red line) for the diagnostic case model compared with the annual catch by the main gear types (from Tremblay-Boyer et al. 2017).

Management

There are two distinct levels of management for the UoA which are described more fully in Section 3.5 and include management by the WCPFC and management by various levels of the Indonesian government. This section provides some background to the WCPFC management level as this is most relevant to Principle 1. See Section 3.5 for information about management by the Indonesian government. Indonesia has been a member of the WCPFC since 2013.

WCPFC management

Yellowfin tuna have been subject to the provisions of CMMs since CMM 2005-01 was adopted. CMM 2018-01 is the latest version of the CMM for the key tropical tuna species (skipjack, yellowfin and bigeye tuna) and contains the key measures that apply to these target species.

The 2017 and 2018 versions of this CMM removed specific objectives that were in earlier versions that the fishing mortality rates for the key tuna species be reduced to or maintained at levels less than F_{MSY} and replaced these firstly with a general statement of the purpose of the CMM:

Pending the establishment of harvest strategies, and any implementing CMM, the purpose of this measure is to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks.

In addition, an interim target reference point is provided for yellowfin tuna (paragraph 14):

Pending agreement on a target reference point the spawning biomass depletion ratio ($SB/SB_{F=0}$) is to be maintained at or above the average $SB/SB_{F=0}$ for 2012-2015.

Nevertheless, the general objective remains articulated under the section titled “Principles for Application of the Measure”:

“... Measures shall ensure, at a minimum, that stocks are maintained at levels capable of producing maximum sustainable yield...”

There are no provisions within 2018-01 that are specifically relevant to the UoA’s catch of yellowfin tuna.

Harvest Strategy

The WCPFC has progressed through a stepwise process for implementing the components of a harvest strategy. Which is defined as the combination of monitoring, stock assessment, harvest control rules and management actions, which may include an explicit or implicit Management Plan and be tested by a Management Strategy Evaluation (MSCI Vocabulary v1.2).

Establishing a limit reference point (LRP) has involved initially agreeing to a hierarchical approach to identify LRPs for key target species (2011), adopting specific LRPs for skipjack tuna (2012), and agreeing to the time period over which the LRP would be calculated (2013). SC9 (noting the results in SC9-MI-WP-02) recommended that the time window (from start year t_1 to end year t_2) to be used for defining the LRP of 20% of unfished Spawning Biomass ($SB_{F=0,t_1-t_2}$) satisfy the following criteria:

- a) have a length of 10 years;

- b) be based on the years $t1=y_{last}-10$ to $t2=y_{last}-1$ where y_{last} is the last year used in the assessment; and
- c) the approach used for calculating the unfished biomass levels be based on scaled estimates of recruitment according to the stock-recruitment relationship.

For a target reference point (TRP), WCPFC's CMM 2014-01 (WCPFC 2014b) reiterated the general objective (contained in previous CMMs) that its management measures aim to ensure that stocks are maintained at a minimum, at levels capable of producing their maximum sustainable yield.

A series of Management Objectives Workshops were subsequently held to help progress agreement on Harvest Strategies for key tuna species. But for yellowfin tuna, although there is an agreed limit reference point, the acceptable risk of breaching this reference point has not yet been agreed. The work plan that WCPFC adopted in 2015 and revised in 2016 and 2017 for yellowfin tuna (Table 7) indicates that there are still important decisions to be made concerning management objectives, target reference points, and harvest control rules.

Table 7. Work plan from WCPFC14 (2017)³ for yellowfin tuna for the adoption of harvest strategies under CMM 2014-06. Bold items are the six elements that are referred to in CMM 2014-06 (a. Objectives, b. Reference Points, c. Acceptable Levels of Risk, d. Monitoring, e. Harvest Control Rules and f. MSE). Items in brackets are related to harvest strategy development, are part of the plan, but are not one of these six elements.

Year	Activity
2017	Performance indicators and Monitoring strategy (d). <ul style="list-style-type: none"> • SC provide advice on a range of performance indicators for the Tropical Longline Fishery to evaluate performance of harvest control rules. • Commission noted performance indicators for the Tropical Longline Fishery to evaluate harvest control rules
	2017 Progress summary: <ul style="list-style-type: none"> • Recognized the importance of developing harvest strategies for key stocks in the WCPO. The Commission recognized that this work requires the consideration of fisheries managers and scientists at different stages. The Commission notes that the time required for harvest strategy discussions is substantial but will also vary from year to year and the Commission recognized the need for this to be accommodated. • Agreed to reprioritise as needed the annual agenda of the Commission and Scientific Committee to allow sufficient additional time for consideration of harvest strategy issues. In addition, WCPFC recognised that there may also be a need for a dedicated science/management dialogue.
2018	[SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]
2019	Agree Target Reference Point (b). <ul style="list-style-type: none"> • SC provide advice on potential Target Reference Points for yellowfin. • Commission agree a TRP for yellowfin. Develop harvest control rules (e) and Management strategy evaluation (f) <ul style="list-style-type: none"> • SC provide advice on performance of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2020	Develop harvest control rules (e) and Management strategy evaluation (f) <ul style="list-style-type: none"> • SC provide advice on performance of candidate harvest control rules. (ongoing). • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2021	Develop harvest control rules (e) and Management strategy evaluation (f) <ul style="list-style-type: none"> • SC provide advice on performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. Adopt a Harvest Control Rule

³ The workplan for yellowfin tuna was again modified in 2018 but, in response to a Variation Request from all CABs, the 2017 version of the Workplan has been agreed as the fixed timeline for all conditions concerning adoption all elements of harvest strategies for WCPFC tuna stocks. The 2018 updates to the Workplan are therefore not considered further here. More information on this Variation Request is provided in Section 4.1 on Harmonized Fishery Assessments.

Information

The information used in the assessment of yellowfin tuna consists of catch, effort, length-frequency and weight-frequency data for the fisheries defined in the analysis, and tag release-recapture data. These data come from a range of sources including mandatory logbooks with daily catch and effort records for each fishing operation (as described in CMM 2013-05), a VMS (as adopted under CMM 2014-3). There is a low level of observer coverage of fishing operations, but these provide a range of data including a detailed record of catch composition (through the Regional Observer Program as instigated under CMM 2006-07 and CMM 2007-01, and implemented through a range of standards and procedures available on the WCPFC website: <https://www.wcpfc.int/regional-observer-programme>). Records of authorized fishing vessels are also required to be maintained (as described in CMM 2013-10).

Information is also available on stock structure (from tagging and other work), and all other key aspects of the species' biology. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery.

The systems in place to collect catch data specific to the UoA are described in Section 3.4.3 Data Collection Programs.

3.4 Principle Two: Ecosystem Background

All species that are affected by the fishery and that are not part of the Unit of Certification are considered under Principle 2. This includes species that are retained for sale or personal use (assessed under Performance Indicator 2.1), bycatch species that are discarded (Performance Indicator 2.2), and species that are considered endangered, threatened or protected by the government in question or are listed by the Convention of International Trade of Endangered Species (CITES) (Performance Indicator 2.3). This section contains an evaluation of the total impact of the fishery on all components in P2 and includes both observed and unobserved fishing mortality. Unobserved mortality may occur from illegal, unregulated or unreported (IUU) fishing, biota that are injured and subsequently die as a result of coming in contact with fishing gear, ghost fishing, waste, or biota that are stressed and die as a result of attempting to avoid being caught by fishing gear. This section also considers impacts on marine habitats (Performance Indicator 2.4) and the ecosystem more broadly (Performance Indicator 2.5).

Primary species

For the purposes of an MSC evaluation, primary species are those in the catch, and within the scope of the MSC program (fishes or shellfish), and not defined by the client as the target – which is evaluated under Principle 1. Primary species will usually be species of commercial value to either the UoA or fisheries outside the UoA, with management tools controlling exploitation as well as known reference points in place. In addition, the institution or arrangement that manages the species (or its local stock) will usually have some overlap in jurisdiction with the UoA fishery.

Secondary species

Species associated with the target that is harvested under some management regime, where measures are in place intended to achieve management, and these are reflected in either limit or target reference points are evaluated as Primary species within Principle 2. In contrast, secondary species include fish and shellfish species that are **not** managed according to reference points. Secondary species are also considered to be all species that are out of scope of the standard (birds/ mammals/ reptiles/ amphibians) and that are not ETP species. These types of species could in some cases be landed intentionally to be used either as bait or as food for the crew or for other subsistence uses but may also in some cases represent incidental catches that are undesired but somewhat unavoidable in the fishery. Given the often unmanaged status of these species, there are unlikely to be reference points for biomass or fishing mortality in place, as well as a general lack of data availability.

Main species

For Primary and Secondary species, species may be considered “Main” based on either resilience/vulnerability or catch volume. Species that are not “Main” are Minor. Main and Minor species must meet different Performance Indicators (PIs) in P2.

- **Resilience/vulnerability:** If the species is considered "less resilient" and it is $\geq 2\%$ of the catch, then it is considered Main, otherwise it is considered Minor.
- **Catch volume:** If the species is not considered "less resilient" and it is $\geq 5\%$ of the catch, then it is considered Main, otherwise, it is considered Minor.

3.4.1 Harmonization

To ensure that the cumulative impact of all MSC fisheries is within sustainable limits, a UoA assessed against standard V2.0 may need to consider the combined impact of itself and other overlapping UoAs. This determination will include other UoAs assessed against earlier versions of the CR (e.g., V1.3). UoAs assessed using default trees prior to CR v2.0 would not have to make this evaluation.

V2.0 of the MSC standard requires that any fishery under assessment that has spatial overlap with the Units of Assessment of any other MSC certified fisheries, be explicitly considered in Principle 2.

‘Overlapping UoAs’ are assessed at different levels depending on which PI is evaluated. For P2 primary species, teams need to evaluate whether the cumulative impact of overlapping MSC UoAs hinders the recovery of ‘main’ primary species. For secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have ‘main’ catches that are ‘considerable’, defined as a species being 10% or more of the total catch. For ETP species, the combined impacts of MSC UoAs needs to be evaluated, but only in cases where either national and/or international requirements set catch limits for ETP species.

All the requirements for cumulative impacts for species are applicable to their respective Outcome PIs. For habitats, in contrast, cumulative impacts are evaluated in the management PI (2.4.2). The requirements here aim to ensure that vulnerable marine ecosystems (VMEs) are managed such that the impact of all MSC UoAs does not cause serious and irreversible harm to VMEs.

3.4.2 Approach to Defining the Unit of Assessments for Principle 2

In this fishery there is a single gear type (handline), employed both on free school sets and anchored associated sets, these are variations of the fishing method for the same gear type, which are operated in the same general area. Following the MSC guidance for identifying the UoAs/UoCs for multiple gears (MSC FCP v2.1 Clause G7.5), the assessment team employed the ‘scoring elements’ approach and when impacts or management arrangements for gear variants differed separate scores are provided for each scoring element.

3.4.3 Data Collection Programs

Fisher Logbooks

Fisher logbooks recording catch data are only required for vessels >30 GT, requirements for the implementation of logbooks for all registered vessels >5 GT are expected to be implemented in the coming years (USAID 2015).

Although the use of fisher logbooks is not legally required for the vessels in the UoA, which are <5 GT, this is one of the requirements for the Fair Trade USA Certification, thus fishers that are part of the Fair Trade group complete the fisher logbooks which are then collected every three days by MDPI staff.

Port Sampling

Vessels in the UoA are a small open craft that fish close to shore on day trips with only one or two fishers on board. Carrying observers is not a feasible option for such vessels. Even recording catch details is hindered by the conditions and it is unreasonable to expect the fishers to complete any form of logbook at sea. Instead, data on the catch is provided by a combination of Daily Port Sampling and Monthly Vessel Unloading reports. The daily sampling is conducted by local shore-based staff employed by MDPI (called enumerators or Sustainability Facilitators) who meet vessels as they return to shore. The Daily Port Sampling Form is used to record general information about fishing methods and locations and to record species, catch weights and lengths of individual fish. The protocols vary depending on whether the size of vessels and catch volumes. For small vessels (<5 GT) such as those in the UoA, data are collected on:

- the total weight of small tuna (<10 kg) and the lengths of a subsample of these,
- the total weight of large tuna (>10 kg) and the lengths of each of these individually or if processed (cleaned and cut into loins) lengths of loins and other processing details,
- the species composition, numbers, and weights of other species retained,
- the weight of any other target fish (discarded, eaten or given away), and
- the quantities of bait used and the types (in seven categories).

For every fourth vessel that is unloading a separate ETP questionnaire is completed by the MDPI enumerator who interviews the fisher to obtain information on any ETP species interactions for that trip. This is expected to take place after the unloading activities, preferably at the fisherman 's home, or another place where disturbance by other people in the community is less likely.

The port sampling aims to obtain data on 20% of the landings, but in 2017 and 2018, this target has been exceeded (Table 8). These are then scaled up based on data reported in the Monthly Vessel Unloading Forms. This form is used to collect monthly summary data on each vessel in a landing site and is completed by suppliers, with the assistance of sustainability facilitators when necessary.

The enumerators forward the collected data to processing offices where it is entered into a database (called I-Fish), which is managed by MDPI staff.

The compliance of Indonesia with data collection requirements is a long-standing issue, with catches reported for another “unclassified” gear types,” problems with data reliability and species identification issues. The WPCF and SPC have undertaken workshops to help address these deficiencies and provided training on species identification and data collection programs. Although the UoA, operates outside the area of the convention, in territorial waters, Indonesia is required to have in place compatible measures with relevant CMMs (WCPFC 2018). MDPI has signed an MoU with the Indonesian government, to integrate the data capture via I-Fish in MMAF’s fisheries databases and subsequently reported to the WCPFC.

Time-lapse cameras

To complement the data provided by the enumerators, a trial has been undertaken of time-lapse cameras (TLC) installed on a subset of vessels that provided a photographic record of fishing operations. Analysis of the images obtained has enabled some level of verification of the data obtained

by the enumerators, particularly the orally reported incidents of ETP interactions that an enumerator cannot verify themselves (van der Ven 2017).

A total of fourteen TLCs were deployed in different regions, four of which were in North Buru and three in Northern Seram (van der Ven 2017). For North Buru and North Seram these were used on a total of 144 trips over 2017 and 2018, representing 1.2% of the recorded fishing trips (Table 8).

Analyzed information was only available for trips deployed from August to December of 2017. During this time a total of 38 trips were analyzed for northern Buru and 10 for northern Seram (MDPI data), out of which 23 and eight trips, respectively were ‘fully recorded trips.’ A fully recorded trip is defined as a fishing trip that has been recorded by the TLC from the moment the vessel leaves shore until it arrives back at shore. No ETP interactions were recorded during these trips. For the other sites where the TLC program was deployed (total of 84 analyzed trips) and are not part of the UoA, there were also no ETP interactions recorded. With such a low rate of interactions, the failure to record any on the cameras was found not to be significantly different from the I-Fish rate. The time-lapse cameras, however, had their limitations and good images could not be obtained on all occasions due to factors as the time of day, dirty lenses, poor placement on a vessel, or other unexplained failures. There also may be issues of bias with the results of the time-lapse cameras as fisher interviews did suggest some fishers were more careful with handling ETP species and handling tuna when a camera was on board (van der Ven 2017).

Table 8. Fishing effort and sampling coverage of the fleet for 2017 (26-08-2017 to 31-12-2017) and 2018. Time-lapse camera (TLC) sample is the number of trips on which a TLC was installed (data from MDPI).

Area	Year	Total Fishing trips	I-Fish Sample	I-Fish coverage %	TLC (trips)	TLC coverage %
North Buru	2017	4,469	1,275	29	49	1.1
	2018	4,400	1,115	25	69	1.6
North Seram	2017	2,033	507	25	10	0.50
	2018	1,291	351	27	16	1.2
Total		12,193	3,248	27	144	1.2

The time-lapse cameras were also paired with small GPS (spot trace devices) devices that recorded vessel positions, so the geographic extent of fishing operations could also be determined.



Figure 15. Density of Vessel Tracking Data in North Buru and North Seram form 2016-09-04 to 2019-01-28 with a total of 65 trips recorded. Data from MDPI

Following the categories used in the FCR Table GSA5, these data collection methods represent a combination of one with a higher level of verifiability (electronic monitoring via time-lapse cameras, albeit with low levels of coverage to date) and ones with a lower level of verifiability (catch records derived from landing records and interviews with fishers). In assessing the accuracy of the I-Fish data it is relevant to note that there are no limits on landings of target or most other species so that there is little incentive for fishers to misreport their catches. It is also noteworthy that the North Buru sector of the UoA has achieved Fair Trade certification of their catch. This requires compliance with a different set of performance indicators than are assessed here but demonstrates that there is an effective community-based management system in place for these vessels. This is further described in the background section for Principle 3.

3.4.4 Overview of Non-target Catch

The analysis for P2 is made considering that the UoA comprises vessels operated by Fair Trade Fishermen's associations based in North Buru and North Seram.

Yellowfin tuna (*Thunnus albacares*), the target species represented 79% and 92% of the total catch of the Anchored Fish Aggregating Device (AFAD) and free-school components of the catch respectively (Table 9). Skipjack (*Katsuwonus pelamis*) and bigeye tuna (*Thunnus obesus*) are the only non-target species managed using reference points. These are therefore considered here as the only primary species. Of these, only skipjack tuna (*Katsuwonus pelamis*) represented more than 5% of the total catch (for AFAD fishing) and is classified as a main primary species for this method.

The fishery uses bait that is caught by the fishers from local waters. Bait species are caught using different methods, but they have been included in the overall catch profile of the fishery, and there is no separate bait fishery that requires evaluation. Bait species used are mainly purple-backed flying squid (*Sthenoteuthis oulaniensis*) and other squid species (94%), with smaller quantities of flying fish (5%), small tuna and scads (1%). None of the bait species represented more than 5% of the total catch.

The fishing method is also quite selective, but there is also a level of unwanted catch of lower value species that are discarded, such as some ray species. Given the nature of the fishing operation,

however, such fish will generally stay alive and in good condition when released, however the condition of fish released is not recorded.

All other species are categorized as not managed and thus categorized as 'secondary,' the catch for all 'secondary' species comprises <5% of the volume of the total catch of all species by the UoA, categorizing these species as 'minor.' There are a couple species classified as 'Less resilient' (Pelagic stingray), these species comprise less than 2% of the total catch of all species by the UoA and are not protected by national or international legislation, thus they are not classified as ETP.

Table 9. Catch summary for Fishery from North Buru and North Seram (2017 and 2018) for the Anchored Fish Aggregating Device (AFAD) and free-school fishing methods (data from MDPI).

Common Name	Scientific name	Managed	Less Resilient	Volume of Catch (t)		Proportion of Catch (%)	
				AFAD	Free	AFAD	Free
Yellowfin tuna	<i>Thunnus albacares</i>	Yes	No	129.453	231.59	79%	92%
Skipjack tuna	<i>Katsuwonus pelamis</i>	Yes	No	18.24	6.46	11.1%	2.6%
Purplebacked flying squid	<i>Stenoteuthis oualaniensis</i>	No	No	0.429	6.222	0.3%	2.5%
Black marlin	<i>Makaira indica</i>	No	No	6.28	0.22	3.8%	0.1%
Squid other	<i>Ommastrephidae</i>	No	No	0.43	5.05	0.3%	2.0%
Rainbow runner	<i>Elagatis bipinnulata</i>	No	No	2.37	0	1.4%	
Frigate tuna	<i>Auxis thazard</i>	No	No	2.18	0.042	1.3%	<0.1%
Mitre squid	<i>Loligo chinensis</i>	No	No	1.789	0.119	1.1%	<0.1%
Common dolphinfish	<i>Coryphaena hippurus</i>	No	No	1.21	0.39	0.7%	0.2%
Unidentified	-	-	-	0.2	0.76	0.1%	0.3%
Bullet tuna	<i>Auxis rochei</i>	No	No	0.73	0.116	0.4%	<0.1%
Shortbill spearfish	<i>Tetrapturus angustirostris</i>	No	No	0.4		0.2%	
Bigeye tuna	<i>Thunnus obesus</i>	Yes	No	0.12	0.24	0.1%	0.1%
Kawakawa	<i>Euthynnus affinis</i>	No	No	0.271	0.04	0.2%	<0.1%
White-finned flying fish	<i>Cheilopogon antoncichi</i>	No	No	0.023	0.285	<0.1%	0.1%
Great barracuda	<i>Sphyraena barracuda</i>	No	No	0.23	0.04	0.1%	<0.1%
Indo-Pacific sailfish	<i>Istiophorus platypterus</i>	No	No		0.23		0.1%
Longfin yellowtail	<i>Seriola rivoliana</i>	No	No		0.15		0.1%
Tuna unknown	<i>Scombridae</i>	No	No	0.088	0.02	0.1%	<0.1%
Mackerel scad	<i>Decapterus macarellus</i>	No	No	0.014	0.048	<0.1%	<0.1%
Tripletail	<i>Lobotes surinamensis</i>	No	No		0.04		<0.1%
Ocean triggerfish	<i>Canthidermis maculatus</i>	No	No		0.04		<0.1%
Glider flying fish	<i>Cheilopogon atrisignis</i>	No	No	0.01		<0.1%	
Anchovy	<i>Engraulis sp.</i>	No	No		0.008		<0.1%
Shortfin scad	<i>Selar crumenophthalmus</i>	No	No		0.007		<0.1%
Bigeye scad	<i>Decapterus macrosoma</i>	No	No		0.007		<0.1%
Diamondback squid	<i>Thysanoteuthis rhombus</i>	No	No		0.004		<0.1%
Pelagic stingray*	<i>Dasyatis violacea</i>	No	Yes		*		<0.1%
Western Ghat loach*	<i>Bhavana australis</i>	No	No	*		<0.1%	
Shortfin mako shark*	<i>Isurus oxyrinchus</i>	No	Yes		*		<0.1%
Total UoA Catch				164	252		

* Catch for these species was provided in number of individuals, between 2015-2018 the enumerator program recorded 2 Pelagic stingrays, 1 Shortfin Mako Shar, and 1 Western Ghat loach.

Species of marine turtles and sharks are all occasionally caught during fishing operations by UoA vessels (See section 3.4.7). There are very few interactions with ETP species recorded for the fishery. The majority of records of landed ETP species between 2015-2018 are for sharks in free sets (n=4), followed by FAD sets (n=3), and there are three records of landed sea turtles in free sets (Table 13).

Table 10. Summary of Non-target Species as Categorized for Evaluation organized for both free and anchored FAD sets.

Common name	Scientific name	FAD Sets		Free Sets	
		% UoA Catch	MSC Class.	% UoA Catch	MSC Class.
Yellowfin tuna	<i>Thunnus albacares</i>	NA	Target		Target
Skipjack tuna	<i>Katsuwonus pelamis</i>	>5%	Primary-main	<5%	Primary-minor
Bigeye tuna	<i>Thunnus obesus</i>	<5%	Primary-minor	<5%	Primary-minor
All minor secondary species*	See Section 3.4.6	<5%	Secondary minor	<5%	Secondary minor
Hawksbill Turtle	<i>Eretmochelys imbricate</i>	-	-	<0.1%	ETP
Loggerhead Turtle	<i>Caretta caretta</i>	-	-	<0.1%	ETP
Silky Shark	<i>Carcharhinus falciformis</i>	<0.1%	ETP	-	-

*All secondary minor species are grouped.

3.4.5 Primary Species

Skipjack and bigeye tuna are the only two primary species. The catch of skipjack represented over 10% of the catch when fishing took place on AFADs but less than 3% for free sets (Table 9). Skipjack tuna are therefore a main primary species for FAD fishing and a minor primary species for non-FAD fishing. More detail on their stock status, information and management is provided below.

Bigeye tuna represented less than 1% of the catch for all types of fishing and are therefore a minor primary species. The catch of bigeye tuna by the UoA (< 1t) represents a negligible percentage of the total catch of this species in the WCPFC (126,929 t in 2017) (WCPFC-SC 2018). Bigeye tuna are not overfished and not subject to overfishing (WCPFC-SC 2018) and no further background information is provided here.

Skipjack

Taxonomic classification

Class: Actinopterygii

Order: Perciformes

Family: Scombridae

Genus: *Katsuwonus*

Species: *pelamis*

Behaviour

Skipjack tuna form both free schools and schools associated with FADs or other floating objects. Depth distribution ranges from the surface to about 260 m during the day but is limited to near surface waters at night.

Skipjack tuna feed on fishes, crustaceans, cephalopods and mollusks; cannibalism is common. They are preyed upon by large pelagic fishes and sharks. Skipjack tuna are not a Low Trophic Level species. Their trophic level is reported in Fishabase.org has been estimated at 4.4 (± 0.5 se).

Growth and Natural Mortality

Skipjack are the smallest of the major commercial tuna species, generally not exceeding 20 kg. Monthly observer sampling of the catch indicates that, when fished as surface schooling adults, they are typically caught at 30 – 70 cm and 2-5 kg in size (Williams and Terawasi 2015).

Skipjack growth is rapid compared to yellowfin and bigeye tuna. In the Pacific, approximate age estimates from counting daily rings on otoliths suggest that growth may vary between areas. At 150, 200, 300 and 400 days, fork lengths (FLs) of 30, 33, 40, and 46 cm were estimated for fish sampled mostly in the north Pacific (Tanabe et al. 2003), but growth estimates were faster (42, 47, 55, and 60 cm) for fish sampled close to the equator (Leroy 2000). Growth has been found to vary spatially in the eastern Pacific (Maunder 2001) and in the Atlantic (Gaertner et al., 2008), based on analyses of tagging data.

Estimates of natural mortality rate have been obtained using a size-structured tag attrition model (Hampton 2000), which indicated that natural mortality was substantially larger for small skipjack (21–30 cm FL, $M=0.8 \text{ mo}^{-1}$) compared to larger skipjack (51–70 cm FL, $M=0.12\text{--}0.15 \text{ mo}^{-1}$). The longest period at liberty for a tagged skipjack was 4.5 years.

Reproduction and Recruitment

Skipjack tuna reach maturity at about 40 cm fork length (FL) and within their first year. They spawn in batches throughout the year in equatorial waters, and from spring to early fall in subtropical waters, with the spawning season becoming shorter as distance from the equator increases. Fecundity increases with size but is highly variable, the number of eggs per season in females of 41 to 87 cm fork length ranging between 80 000 and 2 million. Skipjack tuna have a generation time of 2 years (Berger et al. 2013).

Distribution and Stock Structure

Skipjack are found mainly in the tropical areas of the Atlantic, Indian and Pacific Oceans. Their geographic limits are 55–60° N and 45–50° S, with the greatest abundance seen in equatorial waters, being roughly limited to a 20°C surface isotherm (Hoyle et al., 2011). In the western Pacific, warm, pole ward-flowing currents near northern Japan and southern Australia seasonally extend their distribution to 40°N and 40°S (Rice et al. 2014).

Skipjack in the Western and Central Pacific Ocean are considered to comprise one stock for assessment and management purposes. A substantial amount of information on skipjack movement is available from tagging programs, which have documented some large-scale movement within the Pacific (Figure 16). In general, skipjack movement is highly variable (Sibert et al., 1999) but is thought to be influenced by large-scale oceanographic variability (Lehodey et al. 1997). Skipjack tuna are also classified as a ‘highly migratory species’ and are listed as such in Annex I of UNCLOS. Analyses of the tagging data have, however, indicated that the median lifetime displacement of skipjack ranges from 420 to 470 nautical miles (Sibert and Hampton 2003). Other studies (Hoyle et al. 2011, Lehody et al. 2011) also indicate that mixing rates appear to be fairly restricted, particularly between the equatorial and sub-tropical/temperate North Pacific.

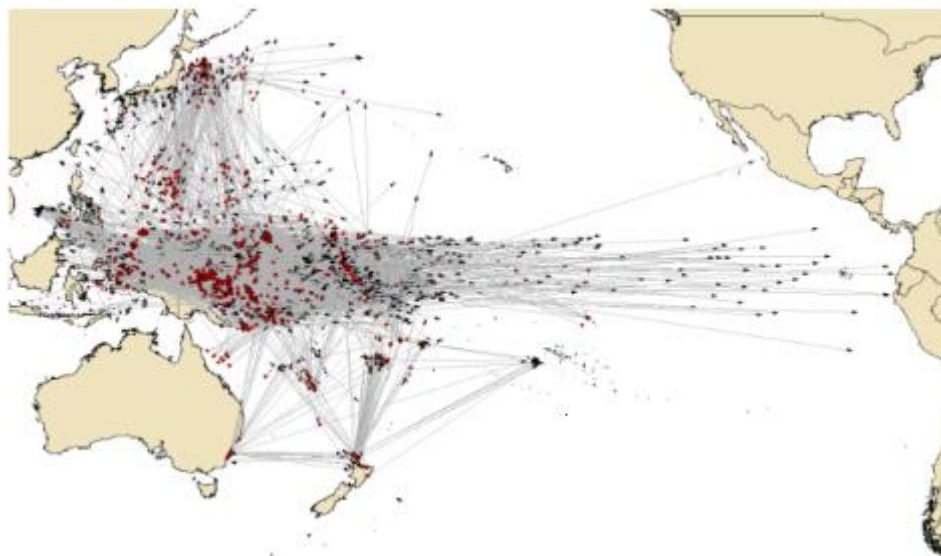


Figure 16. Map of the movements of tagged skipjack released in the WCPO and subsequently recaptured. (from McKechnie et al. 2016a).

Catch

The catch by the UoA is shown in Table 4. The total catch from the whole stock, as used in the most recent stock assessment, shows the continued dominance of catches by purse seines (Figure 17). This catch has been taken from all the regions used in the assessment, and the relative importance of each region has varied over time (Figure 18) (the modelled regions are shown in Figure 18).

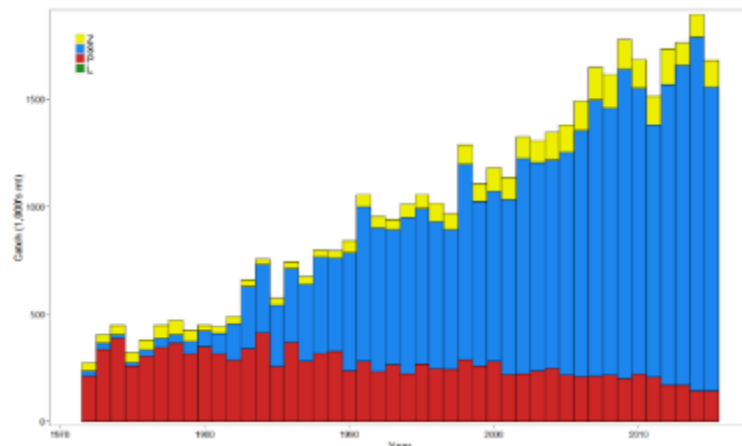


Figure 17. Skipjack tuna. Time series of total annual catch (1000's mt) by fishing gear from the reference case model over the full assessment period. The different colours refer to longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow) (from McKechnie et al. 2016a).

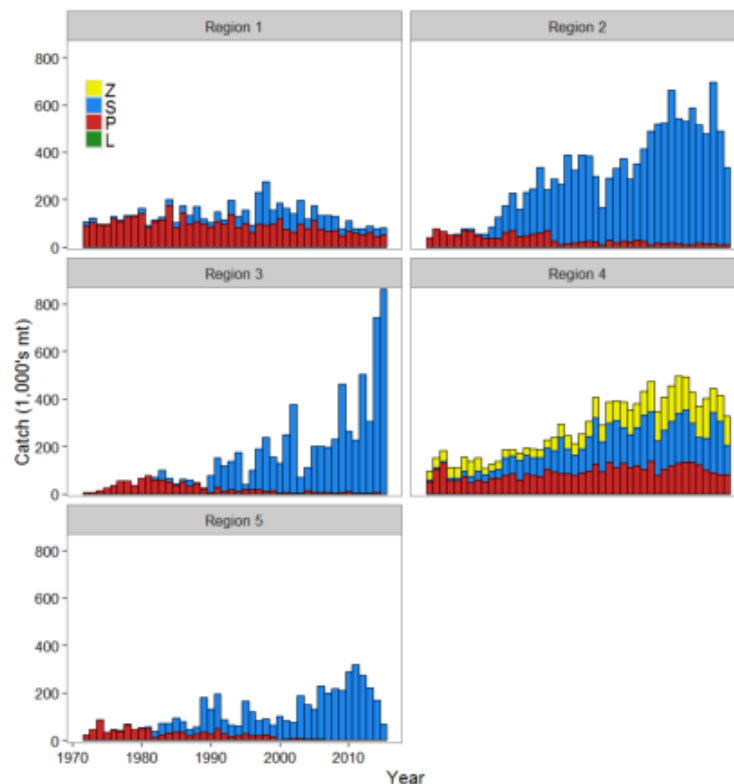


Figure 18. Skipjack tuna: time series of total annual catch (1000's mt) by fishing gear and assessment region from the reference case model over the full assessment period. The different colours refer to longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow) (from McKechnie et al. 2016a).

Stock assessment

Stock assessments for skipjack tuna are undertaken by the Oceanic Fisheries Program (OFP) of the Secretariat for the Pacific Community (SPC) as the scientific advisory body for the WCPFC. It uses MULTIFAN-CL which is an integrated statistical modelling framework that with a large degree of flexibility as to which model components are fixed or estimated (including biological parameters, fishery characteristics and variances).

Draft results of assessments are submitted to the meeting of the Scientific Committee (SC) for discussion and review by members, after which it is revised and a final report presented to the WCPFC plenary, usually held in December.

The assessment reports contain descriptions of structural assumptions, model parameterization and priors. These have been progressively developed over the years and the latest report generally only contains details of changes to these assumptions which may be more fully described in earlier versions. Stock assessments for skipjack tuna have been conducted regularly since 2000 with the most recent one being in 2016 (McKechnie et al. 2016a). The assessment model uses MULTIFAN-CL and is based mainly on catch and effort data for various fleets, size data and tagging data. This assessment followed the previously agreed approach but also addressed several flagged improvements. The conclusions of this assessment were as follows:

1. The current stock assessment estimates stock status to be very similar to the 2014 assessment, with a period of moderately higher spawning biomass over the subsequent years.
2. Current catches are lower than, but approaching, estimated MSY.
3. Fishing mortality of all age-classes is estimated to have increased significantly since the beginning of industrial tuna fishing, but fishing mortality still remains below the level that would result in the MSY and is estimated to have decreased moderately in the last several years.
4. Recent levels of spawning biomass are well above the level that will support the MSY, and are well above the limit reference point, 20%SB F=0 .5
5. Depletion-based reference points (including SB latest /SB F=0 , SB recent /SB F=0 and SB 2015 /SB F=0[2015]) for the reference case model, sensitivity analyses and uncertainty grid suggest that the skipjack stock is most probably at or close to the target reference point of 50%SB F=0.
6. Modelling assumptions explored in sensitivity and structural uncertainty analyses had a moderate impact on model output but did not change the broad conclusions about recent stock status.
7. Modelling results were most sensitive to assumptions about weighting of data components, tag mixing period and steepness, and several important avenues of research related to these assumptions have been identified and will improve future assessments.

These results are also summarised in Table 11 and illustrated in Figure 19 and Figure 20.

The SC could not reach a consensus regarding the use of this as the basis of an agreed base case leading to a majority view (Option 1 in Table 11) and an alternative view (Option 2) was conveyed to the Commission. The concerns they expressed at the SC meeting were addressed by SPC in a follow up paper to the Commission (McKechnie et al. 2016b) which produced similar or more optimistic assessment results. This did not lead to consensus at the Commission as to an accepted base case model but there was agreement that the status of skipjack tuna was not of concern. We consider there to be enough evidence to support the conclusion reported by Dr Hampton to the Commission that the stock is not overfished and is not experiencing overfishing.

In addition to the reference case, a wide range of other model formulations were examined. The key uncertainties explored concerned the assumed steepness of the stock-recruitment relationship, the weighting of length samples and the tagging data, and the tag mixing period, producing 54 combinations of these factors for which a separate model was run for each.

A retrospective analysis has also been undertaken previously for the assessment (Rice et al. 2014, which involves rerunning the model after consecutively removing successive years of data to estimate model bias. The results of the retrospective analyses were the basis of a modification to the reference case whereby recruitment deviates for the last four quarters were not estimated and a better reference point developed for spawning potential depletion (the most recent year of the assessment).

For skipjack tuna an alternative model formulation had also been explored using age- and season-specific movement rates based on the ecosystem model SEAPODYM (Lehodey et al. 2001) to test the plausibility of using ecosystem model output in the place of internal estimation (Rice et al. 2014). At this time the use of the SEAPODYM movement parameters greatly degraded the likelihood and so this model was not included in the uncertainty grid described above, but the more recent assessment produced results which were more consistent with the predictions of SEAPODYM (McKechnie et al. 2016).

As noted above, draft stock assessments are reviewed by the SC, which includes scientists from member countries. These are external to SPC, the agency undertaking the assessments, but are part of the internal WCPFC processes and we do not consider that this review constitutes an external review as intended by MSC requirements.

Table 11. Skipjack tuna. Estimates of management quantities for the selected stock assessment models. For the purpose of this assessment, “recent” is the average over the period 2011–2014 and “latest” is 2015. The column “Ref Case” shows summaries for the reference case and the remaining columns are the quantiles of the structural uncertainty grid, e.g. 5% and 50% are the 5% quantile and the median (50% quantile), respectively. Option 1 in the text recommends basing management advice on the reference case model and considering the uncertainty represented by the 5% and 95% quantile columns. Option 2 recommends basing management advice on the range of model runs in the structural uncertainty grid, as represented by the 5% and 95% quantile columns (from McKechnie et al. 2016a).

Quantity	Ref Case	50%	5%	25%	75%	95%
C_{latest}	1,679,528	1,679,444	1,678,646	1,679,170	1,679,497	1,679,592
MSY	1,891,600	1,875,600	1,618,060	1,785,400	1,976,700	2,199,880
$Y_{F_{recent}}$	1,594,800	1,607,000	1,486,660	1,533,200	1,755,200	1,808,860
f_{mult}	2.23	2.07	1.57	1.85	2.29	2.62
F_{MSY}	0.24	0.24	0.21	0.22	0.26	0.28
F_{recent}/F_{MSY}	0.45	0.48	0.38	0.44	0.54	0.64
SB_{MSY}	1,626,000	1,628,000	1,258,700	1,425,750	1,852,750	2,166,100
SB_0	6,764,000	6,359,500	5,214,050	5,853,750	7,095,250	8,340,450
$SB_{F=0}$	7,221,135	6,876,526	5,778,079	6,408,578	7,425,353	8,555,240
SB_{latest}/SB_0	0.62	0.55	0.43	0.49	0.59	0.71
$SB_{latest}/SB_{F=0}$	0.58	0.51	0.39	0.47	0.57	0.67
SB_{latest}/SB_{MSY}	2.56	2.15	1.6	1.81	2.43	3.08
$SB_{recent}/SB_{F=0}$	0.52	0.49	0.4	0.46	0.52	0.57
SB_{recent}/SB_{MSY}	2.31	2.04	1.58	1.82	2.32	2.65

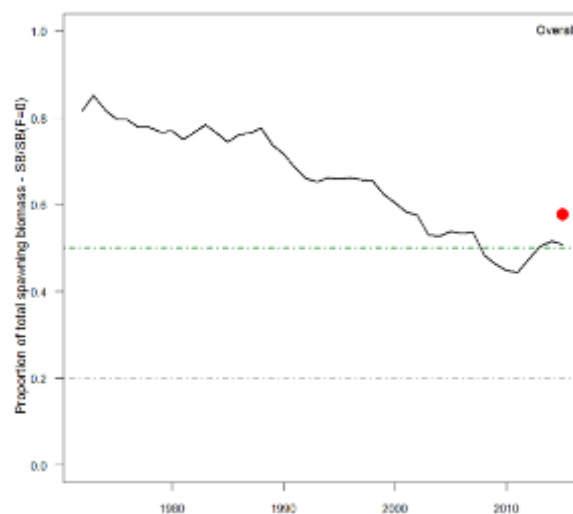


Figure 19. Skipjack tuna. Ratio of exploited to unexploited spawning biomass, $SB_{latest}/SB_{F=0}$, for the reference case model. The current WCPFC limit reference point of 20% $SB_{F=0}$ is provided for reference as the grey dashed line, the adopted target reference point, 50% $SB_{F=0}$, is shown by the green dashed line, and the red circle represents, $SB_{latest}/SB_{F=0}$, the level of spawning biomass depletion based on the agreed method of calculating $SB_{F=0}$ over the last ten years of the model (from McKechnie et al. 2016a).

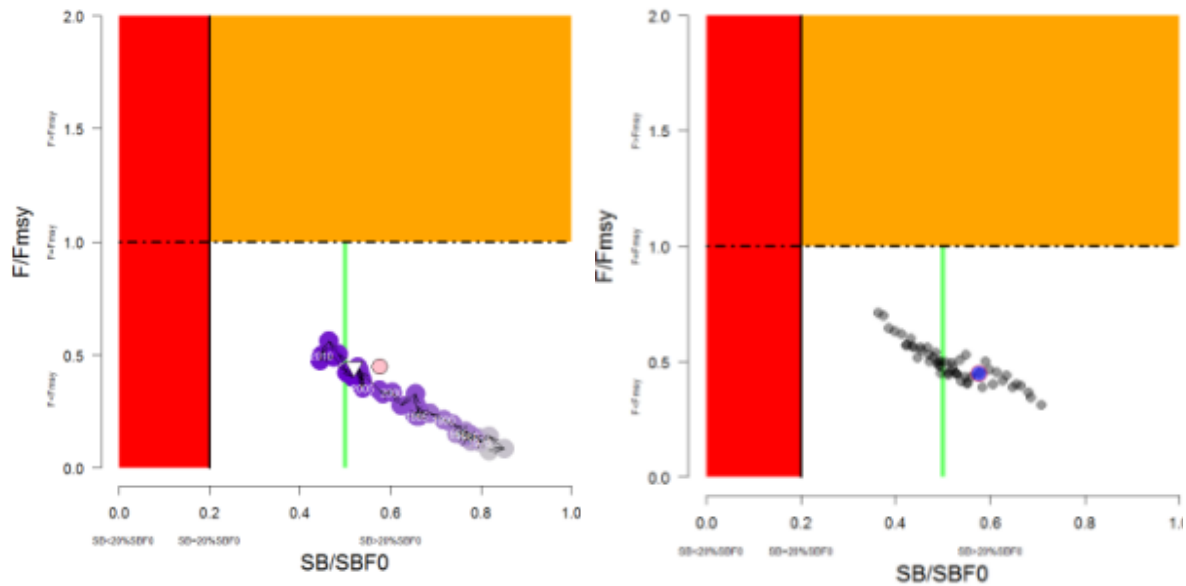


Figure 20. Skipjack tuna. Temporal trend for the reference case model (left) and the structural uncertainty grid (right) in stock status relative to $SBF=0$ (x-axis) and $FMSY$ (y-axis). The red zone represents spawning potential levels lower than the agreed LRP, which is marked with the solid black line ($0.2SBF=0$). The orange region is for fishing mortality greater than $FMSY$ ($F=FMSY$; marked with the black dashed line). The green line indicates the interim target reference point $50\%SBF=0$ (from McKechnie et al. 2016a)

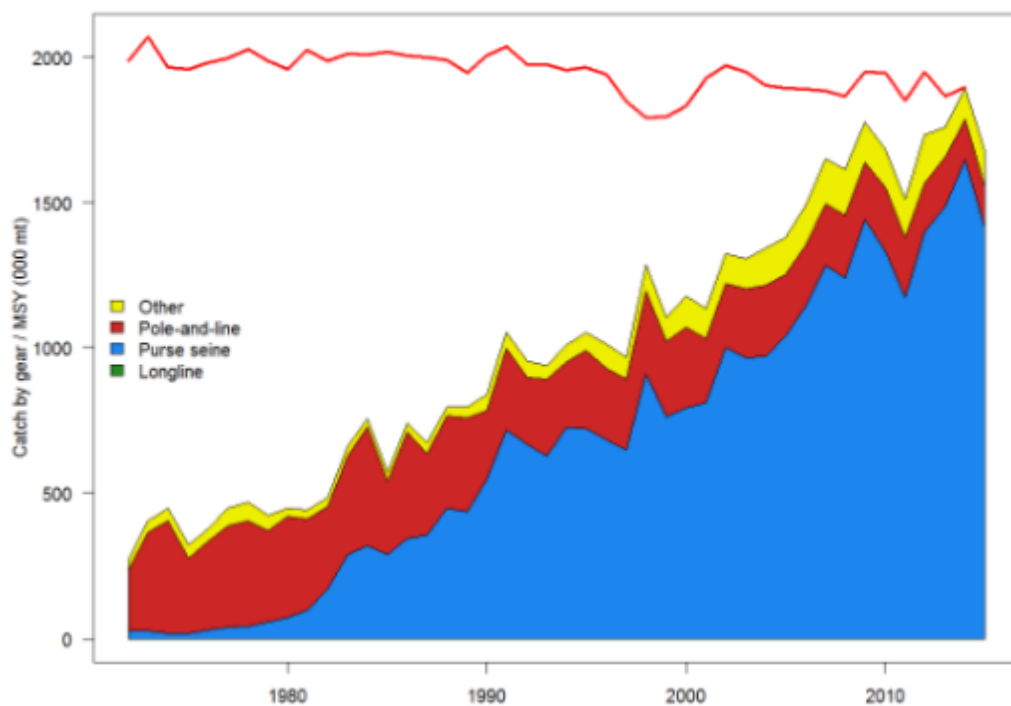


Figure 21. History of the annual estimates of MSY (red line) for the reference case model compared with annual catch by the main gear types (from McKechnie et al. 2016a).

Management

There are three distinct levels of management for the UoA which are described more fully in Section 3.5. This section provides some background to the WCPFC level of management.

WCPFC management

Skipjack tuna were not included in the earlier tuna specific Conservation and Management Measures (CMMs) passed by the WCPFC because there were no concerns about the status of the species. They were first included in CMM 2012-01 and have been included in all later iterations of this CMM. CMM 2016-01 deals with skipjack, yellowfin and bigeye tuna and includes the following requirements for purse seine effort control:

Exclusive Economic Zones

20. Coastal States within the Convention Area that are Parties to the Nauru Agreement (PNA) shall restrict the level of purse seine effort in their EEZs to 2010 levels through the PNA Vessel Days Scheme (VDS).

21. CCMs shall support the ongoing development and strengthening of the PNA VDS including implementation and compliance with the requirements of the VDS as appropriate.

22. Other coastal States within the Convention Area with effort in their EEZs exceeding 1,500 days annually over the period 2006-2010 shall limit effort in their EEZs to 2001-2004 average or 2010 levels.

23. Other coastal States within the Convention Area other than those referred to in paragraph 20 and paragraph 22 shall establish effort limits, or equivalent catch limits for purse seine fisheries within their EEZs that reflect the geographical distributions of skipjack, yellowfin, and bigeye tunas, and are consistent with the objectives for those species. Those coastal States that have already notified limits to the Commission shall restrict purse seine effort and/or catch within their EEZs in accordance with those limits. Those coastal State CCMs that have yet to notify limits to the Commission shall do so by 30 June 2014.

High Seas purse seine effort limits

25. For 2017, non-SIDS CCMs shall restrict the level of purse seine effort on high seas to the limits indicated in Attachment D. The Commission shall review these limits at its meeting in 2017 and agree on high seas purse seine effort limits to apply after 2017.

26. Notwithstanding any agreement that may be reached at its annual meetings in 2014, 2015 and 2016 on high seas purse seine effort limits the total effort level for non-SIDS CCMs shall not exceed the total level of effort in Attachment D.

CMM 2016-01 also specifies other management measures including three months (July, August and September) prohibition of setting on FADs for all purse seine vessels fishing in EEZs and high seas, and also high seas purse seine effort limits. The annual high seas limit for USA vessels through to 2017 is 1270 days. In addition to this, the USA NMFS has set a compatible limit of 558 fishing days per year with the USA EEZ, in accordance with CMM 2016-01 para. 23. These limits are applicable until 2017. Operationally, the USA considers that the limits apply to a combined area comprised of the high seas and EEZ for a total of 1,828 days. The 2016-2017 ELAPS days (EEZ and high seas) were codified as Rule 81 FR 41239, amending USA Code of Federal Regulations: 50 CFR Part 300.

Management by Indonesia

The management system for Indonesia is described in Section 3.5.

Harvest strategy

The WCPFC has progressed through a stepwise process for implementing the components of a harvest strategy ('the combination of monitoring, stock assessment, harvest control rules and management actions, which may include a Management Plan (MP) or an MP (implicit) and be tested by Management Strategy Evaluation (MSE)', MSCI Vocabulary v1.1).

Establishing a limit reference point (LRP) has involved initially agreeing to a hierarchical approach to identify LRPs for key target species (2011), adopting specific LRPs for skipjack tuna (2012), and agreeing to the time period over which the LRP would be calculated (2013). SC9 (noting the results in SC9-MI-WP-02) recommended that the time window (from start year t_1 to end year t_2) to be used for defining the LRP of 20% of unfished Spawning Biomass ($SB_{F=0,t_1-t_2}$) satisfy the following criteria:

- a) have a length of 10 years;
- b) be based on the years $t_1=y_{last}-10$ to $t_2=y_{last}-1$ where y_{last} is the last year used in the assessment; and
- c) the approach used for calculating the unfished biomass levels be based on scaled estimates of recruitment according to the stock recruitment relationship.

For a target reference point (TRP), WCPFC's CMM 2014-01 (WCPFC 2014b) reiterated the general objective (contained in previous CMMs) that its management measures aim to ensure that stocks are maintained at a minimum, at levels capable of producing their maximum sustainable yield. This was also expressed in the specific objective that the Fishing Mortality Rate (F) for skipjack will be maintained at a level no greater than the Fishing Mortality (F) at Maximum Sustainable Yield (MSY) F_{MSY} , i.e. $F/F_{MSY} \leq 1$. A series of Management Objectives Workshops were held and there is now an interim target reference point for skipjack tuna following the adoption of CMM 2015-06 which specified that

"The target reference point for the WCPO skipjack tuna stock shall initially be 50 per cent of the estimated recent average spawning biomass in the absence of fishing, ($SB_{F=0,t_1-t_2}$).".

The harvest strategy for skipjack tuna is more advanced than for the other main species of tropical tunas. Nevertheless, the workplan that WCPFC adopted in 2015 and revised in 2016 for yellowfin tuna (Table 12) indicates that there are still important decisions to be made concerning harvest control rules.

Table 12. Agreed work plan for skipjack tuna for the adoption of harvest strategies under CMM 2014-06.

Year	Activity
2016	<ol style="list-style-type: none"> Record management objectives for the fishery or stock (a). Agree acceptable levels of risk (c). Agree monitoring strategy (d). Develop harvest control rules (e). Management strategy evaluation (f) <ol style="list-style-type: none"> SC provide advice on a monitoring strategy to assess performance against reference points.

	<ol style="list-style-type: none"> 2. SC provide advice on a range of performance indicators to evaluate performance of harvest control rules. 3. Commission record management objectives for skipjack 4. Commission agree to acceptable levels of risk for breaching Limit Reference Point for skipjack. 5. Commission agree to a monitoring strategy to assess performance against reference points. 6. Commission agree performance indicators to evaluate harvest control rules.
2017	<ol style="list-style-type: none"> 6. Develop harvest control rules (e). 7. Management strategy evaluation (f). <ol style="list-style-type: none"> 1. SC provide advice on candidate harvest control rules based on agreed reference points. 2. Commission consider advice on progress towards harvest control rules.
2018	<ol style="list-style-type: none"> 8. Develop harvest control rules (e). 9. Management strategy evaluation (f). <ol style="list-style-type: none"> 1. SC provide advice on performance of candidate harvest control rules. 2. TCC* consider the implications of candidate harvest control rules. 3. Commission consider advice on progress towards harvest control rules.

* TCC = Technical and Compliance Committee

The VDS system operates alongside WCPFC measures. At the 22nd Annual PNA Meeting in April 2017, the PNA countries agreed to confirm the provisional 2015 TAE of 44,625 days. In addition, a TAE of 44,890 days was adopted for 2016 and set as the provisional PNA TAE for 2017. Purse seine fishing effort (based on logsheet days) have been reported as 36,365 days and 40,349 days for 2015 and 2016 respectively (Clark 2017). In addition, non-PNA member Tokelau joined the VDS in 2015 and was allocated a TAE of 985 days for 2015 and 991 days for 2016 (i.e. a total VDS TAE of 45,610 days for 2015 and 45,881 days for 2016) (PNA 2016a).

Information

The information used in the assessment of skipjack tuna consists of catch, effort, length-frequency and weight-frequency data for the fisheries defined in the analysis, and tag release-recapture data. These data come from a range of sources including mandatory logbooks with daily catch and effort records for each fishing operation (as described in CMM 2013-05), a VMS (as adopted under CMM 2014-3), 100% observer coverage of fishing operations providing a range of data including a detailed record of catch composition (through the Regional Observer Program as instigated under CMM 2006-07 and CMM 2007-01, and implemented through a range of standards and procedures available on the WCPFC website: <https://www.wcpfc.int/regional-observer-programme>). Records of authorised fishing vessels are also required to be maintained (as described in CMM 2013-10).

Information is also available on stock structure (from tagging and other work), and all other key aspects of the species' biology. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery.

3.4.6 Secondary Species

All retained secondary species represented less than 5% of the total catch (Table 9) and none of the secondary species representing between 2-5% of the catch are considered less resilient; therefore, there are only minor secondary species.

The fishery only uses bait that have been caught by the fishermen by handline while targeting Yellowfin tuna. Among the species used as bait, purple-backed squid is the most commonly used but still represented <5% of the total catch and is therefore also a minor secondary species. All other species are minor secondary species and no additional background information is provided on them.

Shark finning

Most sharks caught by the fishery are assessed as ETP species (see Section 3.4.7) but, when sharks are caught by the fishery, and they are not one of the target species, the FCR v2.0 requires an assessment of whether shark finning is taking place as part of the evaluation of the management strategies under Principle 2. The issue is therefore considered here as background to the evaluation provided under PI 2.2.2

WCPFC measures

WCPFC's CMM for sharks (CMM 2010-07) includes the following requirements:

6. CCMs shall take measures necessary to require that their fishers fully utilize any retained catches of sharks. Full utilization 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 or transshipment.
7. CCMs shall require their vessels to have on board fins that total no more than 5% of the weight of sharks on board up to the first point of landing. CCMs 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. CCMs may alternatively require that their vessels land sharks with fins attached to the carcass or that fins not be landed without the corresponding carcass.
8. As finer resolution data become available, the specification of the ratio of fin weight to shark weight described in paragraph 7 shall be periodically reviewed by the Scientific Committee (SC) and the SC will recommend any appropriate revisions to the Commission for its consideration. The SC and the Technical and Compliance Committee (TCC) are directed to consider if additional appropriate measures that give effect to paragraph 7 are required.
9. CCMs shall take measures necessary to prohibit their fishing vessels from retaining on board, transshipping, landing, or trading any fins harvested in contravention of this Conservation and Management Measure (CMM).
10. In fisheries for tunas and tuna-like species that are not directed at sharks, CCMs shall take measures to encourage the release of live sharks that are caught incidentally and are not used for food or other purposes.

The SC10 report noted that there were no specific documents to address the efficacy or effectiveness of this CMM and that the SC has not been able to assess the specification of the ratio of fins-to-carcass weight, as CMM 2010-07 required. Concerns had also been expressed at the TCC (TCC10 2014) about

ambiguity in several provisions in this CMM, particularly the fin-to-carass ratio, that made it impossible to determine compliance standards for the measure. At SC12 these concerns were reiterated, and the SC concluded that

“SC12 was unable to confirm the validity of using a 5% fin to carcass ratio in CMM 2010-07 and forwards these concerns to TCC, noting that an evaluation of the 5% ratio is not currently possible due to insufficient information for all but one of the major fleets implementing these ratios. SC12 took note of SC12-EB-IP-02 that confirms that the information which can be used to evaluate the effectiveness of the WCPFC ban on shark finning (CMM 2010-07) is currently very limited.”

The subsequent TCC meeting agreed and recommended to the Commission that “WCPFC13 recognize that it is not possible for TCC to assess compliance related to the application of the 5% ratio prescribed in para. 7 of CMM 2010-07.”

Therefore, although WCPFC has measures intended to prohibit the practice of shark finning it is not currently able to determine whether this objective is being achieved.

3.4.7 Endangered, Threatened and Protected (ETP) Species

Outcome

There are three species that have been recorded as being caught by UoA vessels that are classified as ETP species: silky shark and two species of turtles.

Silky Shark are classified as ETP species because they are protected by WCPFC Conservation and Management Measures CMM 2013-08. CMMs are considered 'binding' international agreements, that need to be recognized by national legislation.

The turtles are classified as ETP species because they are on Appendix I of CITES. These species are also listed as vulnerable, endangered, or critically endangered on IUCN's Redlist.

There are species of sharks and other species that are caught by the UoA that are listed as vulnerable, endangered or critically endangered by the IUCN, but these are not recognized as ETP under MSC processes in which a species IUCN status is only considered if it is a member of an out-of-scope group (SA3.5.1.3). Other species of sharks (i.e. Shortfin Mako sharks) are listed under CMM 2010-07 as a 'key species', requiring members to report on catch to the Commission, however, there are no specific management measures. However, this species is listed as endangered in the IUCN red list.

In the four years from 2015 to 2018 only one loggerhead turtle was recorded as being caught and two hawksbill turtles were recorded in 2017 and 2018. Similarly, there were single incidents of a silky shark and a short fin Mako being caught in these four years. There were also six occasions on which the shark species were not identified.

Table 13. Interactions with landed ETP Species for North Buru from 2015-2018 for FAD sets and Free Sets. Data from I-Fish.

Species	FAD Sets	Free Sets
Sharks & rays		
Unknown Sharks	2	4
Silky Shark	1	0
Marine turtles		
Hawksbill Turtle	0	2
Loggerhead Turtle	0	1

During the site visit the personnel from I-Fish noted that the records of landed species, did not necessarily indicate mortality. Presumably, in cases such as those recorded for the sea turtles these were specimens in poor condition, brought to land to recover and then released. The assessment team was not able to verify this information.

Data was also provided for landed ETP species with known fate for both North Buru and Seram (Table 14). The only recorded dead species are sharks.

Table 14. List ETP species' interactions with known fate for both North Buru and North Seram from 2015-2018. The data is assumed to include both FAD and Free sets. Data from I-Fish.

Species	All Sets	Fate
Unknown Sharks	3	Dead
Short Fin Mako	1	Dead

The assessment team choose to group ETP species as a single scoring element, since the number of interactions is so low.

Management

Regional Level

Sharks

The WCPFC's CMM for sharks (CMM 2010-07) includes the following resolutions applicable to its member states:

1. Commission Members, Cooperating non-Members, and participating Territories (CCMs) shall implement, as appropriate, the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA Sharks).
2. CCMs shall advise the Commission (in Part 2 of the annual report) on their implementation of the IPOA Sharks, including, results of their assessment of the need for a National Plan of Action and/or the status of their National Plans of Action for the Conservation and Management of Sharks.
3. National Plans of Action or other relevant policies for sharks should include measures to minimize waste and discards from shark catches and encourage the live release of incidental catches of sharks.
4. Each CCM shall include key shark species, as identified by the Scientific Committee, in their annual reporting to the Commission of annual catch and fishing effort statistics by gear type, including available historical data, in accordance with the WCPF Convention and agreed reporting procedures. CCMs shall also report annual retained and discarded catches in Part 2 of their annual report. CCMs shall as appropriate, support research and development of strategies for the avoidance of unwanted shark captures (e.g. chemical, magnetic and rare earth metal shark deterrents).

In addition to its general CMM for sharks (CMM 2010-07), WCPFC introduced a CMM specifically for silky sharks in 2013 (CMM 2013-08) which contained a variety of measures including the following:

- a prohibition on retaining on board, transshipping, storing on a fishing vessel, or landing any silky shark caught in the Convention Area, in whole or in part, in the fisheries covered by the Convention. (CMM 2010-07 had permitted silky shark to be retained but not just their fins).
- a requirement to release any silky shark that is caught in the Convention Area as soon as possible after the shark is brought alongside the vessel, and to do so in a manner that results in as little harm to the shark as possible. (This is stronger language than CMM 2010-07 which had indicated that “National Plans of Action or other relevant policies for sharks should include measures to minimize waste and discards from shark catches and encourage the live release of incidental catches of sharks).
- a requirement for CCMs to estimate, through data collected from observer programs and other means, the number of releases of silky shark caught in the Convention Area, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports.

Sea Turtles

The WCPFC has adopted CMM 2008-03 for sea turtles which require CCMs to implement the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and to ensure the safe handling of all captured sea turtles, in order to improve their survival. Best practice guidelines to ensure the survival of captured sea turtles are also outlined and obligatory to follow.

National Level

Sharks

The Ministry of Marine Affairs and Fisheries published the National Plan of Action (NPOA) Conservation and Management of Sharks and Rays 2016-2020. The main objectives of NPOA Shark and Ray 2016-2020 are:

- a. Preparing national regulation on sharks and rays management,
- b. Implementation of international regulation regarding sharks and rays management,
- c. Improving data accuracy of sharks and rays catch,
- d. Protection/management of endangered sharks and rays utilization,
- e. Improving research on sharks and rays, and,
- f. Improving stakeholders ‘understanding on sharks and rays management

The NPOA establishes nine primary strategies to accomplish the outlined objectives which include the development and implementation of a national regulation, updating information on the status of shark and ray fisheries and strengthening data collection.

THE NPOA identifies several challenges to the implementation to the regional and international provisions for shark protection at the national level. For the small-scale sector in particular it identifies

two specific challenges: (1) data collection in small-scale fishing ports has not been adequately implemented (2) there should be different regulations between small-scale and large scale fleets, as to ensure that the shark fishing policy does not have a significant impact on small-scale fisheries that have limited economic opportunities. The team interprets the latter point to refer to small-scale fisheries that may target shark species.

Members of the WCPFC are required to report the annual catch of blue shark (*Prionace glauca*), silky shark (*Carcharhinus falciformis*), oceanic whitetip shark (*Carcharhinus longimanus*), mako sharks (*Isurus* spp.) and thresher sharks (*Alopias* spp.), including the catch that are kept and disposed, and research and development activities conducted to reduce shark catch.

At the WS of 2018 Annual Catch Estimates in WCPFC area of Competence in Bogor, MDPI presented all data in I-Fish database including Shark and it was incorporated it in the national report without indicating data sources.

MDPI submits data on shark bycatch to KKP to present as part of the national report in the WCPFC's annual catch estimates workshop.

Sea Turtles

In Indonesia, sea turtles are protected under a variety of decrees, acts, and regulations. The Government Regulation No. 7, provides protections to all sea turtle species. Indonesia is reported as having a legal framework requiring fishers to recover and release sea turtles at sea, and programs to educate vessel operators on appropriate handling of sea turtles when caught incidentally. Although the team is aware that there are extensive efforts on the ground, the specific frequency and coverage of these training programs was not provided.

Fishery Specific “Informal” Arrangements:

Fair Trade USA Guidelines

The fishers in the UoA are part of the Fair Trade certification which has in place requirements for the management of ETP species, the Fair Trade Report for 2019 confirms the following information:

- Enumerators participating in the Port Sampling Program receive training to identify ETP species.
- Fishers that are part of the Fishing Associations receive awareness programs on ETP species.
- Fishers' interview confirm that they release ETP species, and whenever possible they will try to unhook any ETP species accidentally captured.
- Each Fishing Association (FA) also has in place internal guidelines which prohibit the take of protected species.

Code of Conduct

The Code of Conduct Asosiasi Perikanan Pole & Line dan Handline Indonesia (AP2HI) (Indonesian Pole & Line and Handline Fisheries Association), signed in 2018 by Harta Samudra, includes the following guidelines:

Have a public facing policy that minimizes catching sharks, sea turtles, marine mammals, sea birds, and Endangered Threatened and Protected (ETP) species;

Ensure that crew members undergo training on best practice of handling and release of:

Sharks, sea turtles, marine mammals, sea birds and ETP species;

Commit to best practices in FAD construction by using non- entangling and biodegradable materials;

AP2HI is currently developing and testing an audit methodology for reviewing compliance of the guidelines by its members.

3.4.8 Habitat Impacts

Overview

When assessing the status of habitats and the impacts of fishing, teams are required to consider the full area managed by the local, regional, national, or international governance body(s) responsible for fisheries management in the area(s) where the UoA operates (this is called the “managed area” for assessment purposes).

According MSC FCRV2.0 SA3.13.3, the assessment team must determine and justify which habitats are commonly encountered, vulnerable marine ecosystems (VMEs), and minor (i.e., all other habitats) for scoring purposes, [where]:

- “A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat’s range within the management area(s) covered by the governance body(s) relevant to the UoA; and
- A VME shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines⁷ (definition provided in GSA3.13.3.2) [as having one or more of the following characteristics: uniqueness or rarity, functional significance, fragility, Life-history traits of component species that make recovery difficult, and/or structural complexity]. This definition shall be applied both inside and outside EEZs and irrespective of depth.”

Both commonly encountered and VME habitats are considered ‘main’ habitats for scoring purposes (GSA3.13.3).

Gear and Habitat Interactions

Direct Impacts

The fishing gear does not physically interact with benthic habitat during its operation. Any impacts of the fishery will, therefore, be confined to direct or indirect effects on the surface waters in which the fishery operates. The specifics of the fishing methods are described in Section 3.2.3 *Description of Fishing Practices: Gear*.

Anchored FADs are also employed in the fishery, there is contact between the substrate and the concrete blocks employed to anchor the FAD. The anchors are constructed as a low box with a surface area of approximately 1 square meter surface area and deployed at a depth between 10 and 20 meters. The number of FADs deployed by the fishery is quite small, for North Buru there are records of six AFADs utilized by the vessels in the UoA. The assessment team did not receive information on the number of AFADs in North Seram, however, the number is not expected to be significantly larger, given that only roughly 15% of catch is estimated to come from sets on AFADs.

The AFADs deployed in North Buru and North Seram do not overlap with Marine Protected Areas or any vulnerable marine ecosystems (VMEs).

On account of the small footprint of the anchored FADs and the limited number of FADs, the team considers that the fishing gear (AFADs) do not come in contact regularly with a habitat at a spatial scale that would warrant the designation of a “main” habitat.

VMEs

The fishing area where the vessels of the UoA operate is known as the Coral Triangle Area, a marine region located along the equator and including the economic exclusive zone of six countries (Indonesia, Malaysia, Philippines, Papua New Guinea, Solomon Islands and Timor Leste). The Coral Triangle contains a high diversity of coral and fish species and fish (Green et al., 2011). Distribution maps of coral reefs in Indonesia (Figure 22) and the anecdotal information collected during the site visit, indicate that the fishery does not operate in areas with occurrence of coral reefs.

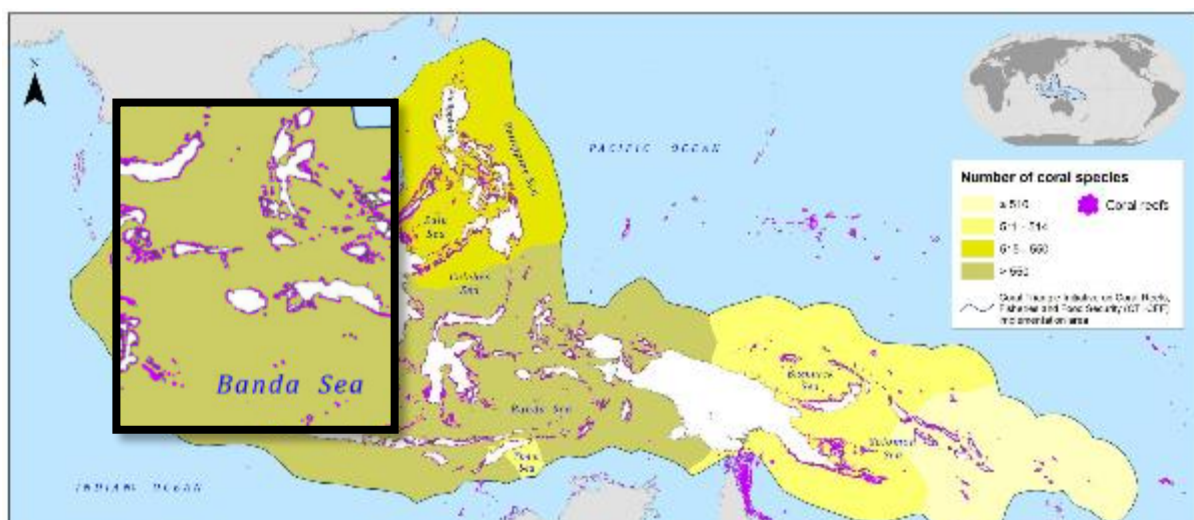


Figure 22. Map of distribution of coral species in the Coral Triangle, with insert with a close-up of the Buru and Seram Islands. Image taken from Veron (2009) Coral Geographic: a spatial database; Malaysia from the State of the Coral Triangle Report (SCTR) for CT countries; Coral reefs – UNEP-WCMC (2010) Global Distribution of Coral Reefs in the Coral Triangle Atlas (<http://ctatlas.reefbase.org>)

Asaad et al. (2018) employed a range of ecological and biological criteria to assess area of marine biodiversity importance in the Coral Triangle region. The results of the study identified sites of biodiversity importance based on the analysis of derived from five ecological criteria: (1) distribution data for three biogenic habitats (coral reefs, seagrass meadows, and mangrove forests) (2) potential species richness (3) the presence of species of conservation concern; (4) the occurrence of restricted-range species; (5) sea turtle nesting habitat and migratory routes as indicators of important areas for sea turtles. The criteria identified by Asaad et al. (2018) align with the FAO guidelines for VME.

The first criteria evaluating the distribution of coral reefs, seagrass meadows and mangrove forests was employed to assess the criterion for sensitive habitat. The analysis found that the largest coverage of biogenic habitat in the Coral Triangle (CT) was coral reefs (14%), followed by mangrove forests (12%) and seagrass (3%). In Indonesia the areas with all three biogenic habitats occurred in northern part of Sulawesi Island, the Moluccas Islands and the Raja Ampat Archipelago of Indonesian Papua. The general area of operation of the UoA appears to occur in areas of 'Medium' to 'Low' categories of coral reefs, mangroves and seagrasses coverage (Figure 23).

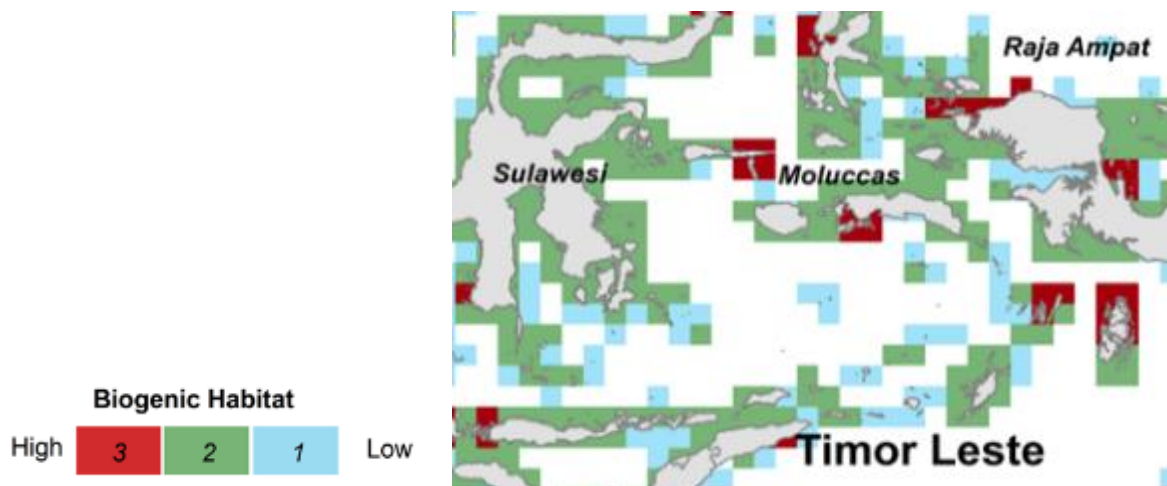


Figure 23. Map of areas with coverage of coral reefs, mangroves and seagrasses. Figure modified from Fig. 2 in Asaad et al. (2018)

Four sites were identified in Indonesia as the most important for biodiversity by Asaad et al. (2018): the northern tip of Sulawesi, Ambon Island, Kei Islands, and Raja Ampat Archipelago. The areas where the UoA operates in northern Buru and Seram were identified as areas of 'Medium' and 'Low' biodiversity importance (Figure 24).

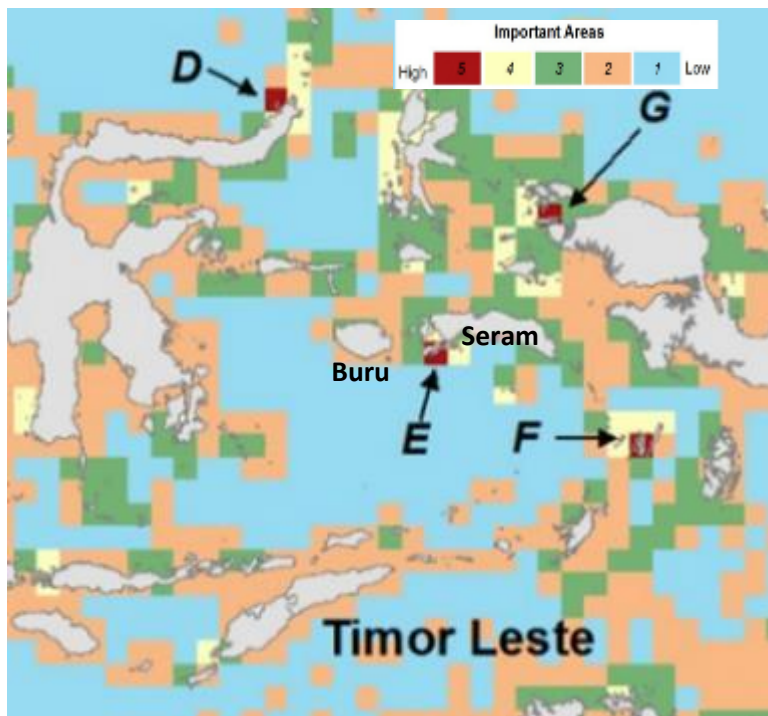


Figure 24. Close-up of map showing sites of biodiversity importance in the Coral Triangle, with each site defined using half-degree cells. Analysed based on unweighted sum of biodiversity score derived from five ecological criteria. Figure modified from Fig. 5 in Asaad et al. (2018)

Based on the literature review the assessment team identified as two potential VMEs: coral reefs and seagrass. Based on the analysis of distribution of these habitats and the identification of sites of biodiversity importance, of habitats and the anecdotal information collected at the site visit, the assessment team considers the distribution of VMEs are broadly understood, and there is no indication that the UoA overlaps with any VMEs. Nonetheless, the information on the distribution of VMEs is not available at a level of detail that enables the team to confirm there is no interaction with the vessels in the UoA, thus taking a precautionary approach both coral reefs and seagrass are identified as potential VMEs.

Potential Indirect Impacts AFADs

Although AFADs may have minimal impact at low densities, the deployment of high number of anchored and drifting FADs to support both small scale and industrial fisheries can create higher FAD densities that increases potential of impacts of FADs (Itano 2007).

Entanglement

Small-scale vessels of Indonesia employ traditional anchored FADs (AFADs), also known as rumpons, which generally do not have any netting in their construction. Visits from ISSF staff to the principal tuna purse seine Indonesian ports between 2012 and 2017 “[...] confirm the absence of netting materials for these AFADs.” (Murua et al., 2017). There are no recorded accidental entanglement events in AFADs (Murua et al., 2017b).

Marine Debris

Coral reefs face a range of threats. Local threats come from coastal development, watershed based pollution, marine-based pollution and damage, overfishing and destructive fishing. Global threats arise from changing climate and ocean chemistry such as warming seas, acidifying seas, sea level rise and storms (Burke et al. 2011 and 2012). Certain fishing gear can also have a destructive impact on coral reef ecosystems, lost or abandoned fishing gear can continue “ghost fishing” or can also cause physical damage to reefs, which can take corals decades to recover (Burke et al. 2012).

Research conducted in the Indian Ocean in the Seychelles Islands on environmental impacted of beached drifting FADs 2011 and 2015 found that dFADs impacted coral reef more than other habitats. Of the identified dFADs, 39%, were found attached to coral reefs. The study found that the construction of the FAD was an important factor, with 48,9% of dFADs using nets as the aggregator, found on coral reefs compared to 23% of dFADs using synthetic ropes (Balderson and Martin, 2015). Seagrass has also been recorded to have been entangled in FADs (Zudaire et al. 2018). Another issue identified is FADs becoming a contributor to marine pollution, with more than 70% of FADs encountered were made of synthetic material. Proposed solutions to mitigate impact on ‘beached’ FADs include building FADs with biodegradable materials and the use of non-entangling FADs (Zudaire et al. 2018).

The longevity of anchored FADs in other similar small-scale fisheries has been identified as proximately 2 years. Once an anchored FAD breaks from their anchor, they can become a form of marine debris, that can either acts as ghost fishing, or impact coastal habitats. (Beverly et al., 2012).

Southeast Asia has the most extensive and diverse coral reefs in the world, making up 28 percent of the global total. Reefs in this region are also considered the most at risk, with almost 95 percent of reefs affected. Main threat factors include; densely populated coastlines, shallow and easily accessible fishing grounds, and the highest global occurrences of blast and poison. In the region Indonesia has the largest area of threatened reef. Marine-based pollution is not a main threat factor and considered a threat to less than 5% of reefs in the region. On account of the lack of global spatial data on discarded fishing gear this is not accounted for in the analysis of marine-based pollution (Burke et al. 2012). Nevertheless, it seems very unlikely that its inclusion could greatly elevate the relative importance of marine debris as a local threat for coral reefs either within Indonesia’s waters or in the Coral Triangle as a whole; other local threats are estimated to be much more important.

Management

WCPFC

There are some conservation measures in place at the WCPFC that may pertain to FAD management, including the application of a three month prohibition on the setting on FADs for purse seine vessels fishing in the high seas and EEZs (CMM 2009-02) and the requirement for the submission of a Management plan for the use of FADs for vessels in the high seas (WCPFC CMM 2014-01). The requirements for the FAD management plans included, considerations on catch reporting, minimum distances between AFADs, FAD ownership, procedures for FAD deployment, specifications and requirements for FAD construction. Measures at the WCPFC on FAD management are aimed at vessels

operating in the high seas and drifting FADs, and there are few requirements that could be indirectly applicable to the small-scale vessels that are part of the UoA in this assessment.

National

In response to the WCPFC's CMM 2014-01, Indonesia prepared a FAD Management Plan, with applicability from 2015 to 2017. As of the date of the site visit for this assessment in 2019, no update for the FAD management plan for Indonesia has been published. The management plan has in place provisions requiring marking and registration of deployed FADs and contains guidelines on distance between AFADs, maximum number of FADs that can be deployed by each vessel. There are no specific considerations in the FAD management plan about sensitive habitat areas.

Nonetheless, none of the management measures in the FAD management plan are applicable to the small-scale vessels that are part of the UoA. According to the Indonesian FAD management plan a FAD license is required for a fishing vessel to deploy a FAD, and the FAD license is only valid for the validity period of the fishing permit of the vessel. Small-scale vessels <5 GT are not required to have a fishing permit/license under Indonesian regulations. Management officials have interpreted that the exclusion from fishing permits for small scale vessels under 5 GT, also extends to FAD permit requirements. Thus, small-scale vessels in the UoA are not required to follow any of the existing requirements for FAD management.

MDPI has led several efforts, including supporting the development management measures for FADs in the Draft Tuna Management Plan Maluku 2015 and the draft internal rules regarding FADS. However, these documents are not yet implemented.

Fishery Specific "Informal" Arrangements:

The AP2HI Code of Conduct includes the following guidelines relevant to FAD management:

Record and report the loss and/or recovery of fishing gear and FADs at sea. Retain old and broken fishing gear on-board for the appropriate disposal on land.

Ensure that FADs are deployed in permitted areas according to the restrictions specified under the FAD management plan;

Attend AP2HI workshops and trainings on FAD construction, deployment, and management;

Commit to best practices in FAD construction by using non- entangling and biodegradable materials;

Support the FAD management based on the prevailing laws and regulations

Provide AP2HI with relevant FAD registration documents.

MDPI participates in several initiatives to increase awareness on FAD management, including:

1. Registration of FADs at DKP.
2. Use of environmentally friendly material
3. Tuna locating technique.
4. Purposes of FAD,
5. Ownership.
6. Access right including sanction.

7. Fisheries Management.
8. Financing.
9. Reporting.
10. Monitoring and maintenance.

Information

The registration and inventory of FADs is lacking, and the assessment team received information only for the FADs employed by fishers in the North Buru area (6) and in North Seram (12). Although not all FADs employed by the fishers are registered, there is already an action plan expected to be completed by 2020 to register all FADs.

3.4.9 Ecosystem Impacts

Status

The MSC defines ‘key ecosystem elements’ as “the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics and are considered relative to the scale and intensity of the UoA. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity” (SA3.16.3 MSC 2014).

Further MSC guidance states that “key ecosystem elements may include trophic structure and function (in particular key prey, predators, and competitors), community composition, productivity pattern (e.g. upwelling or spring bloom, abyssal, etc.), and characteristics of biodiversity” (GCB3.18.1, MSC 2014).

Defining the key ecosystem elements that are applicable to the UoAs is not clear cut and for the purposes of this assessment we have considered a broad range of features and measures from studies at a wider ecosystem scale. The pelagic ecosystems that support the yellowfin tuna fisheries in the WCPO are spread over very broad spatial scales and are influenced by oceanographic and climatic factors beyond the fishery boundaries. Relevant studies include studies of trophic relationships (e.g. Kitchell et al. 1999), studies at scales that are smaller than the whole fishery (e.g. modelling of the ‘warm pool’ by Allain et al. 2015), and modelling of the whole Pacific Ocean (e.g. Sibert et al. 2006). Also, of relevance to this assessment is the potential ecosystem impacts of FADs themselves, including both on target and non-target species. Each have been examined for evidence of impacts of the fishery on the structure and function of the ecosystem.

Trophic Relationships

Adult yellowfin tuna are high trophic level species, second tier apex predators below sharks, swordfish, marlin and other billfish (Kitchell et al., 1999). They are major biomass components of the apex guild, represented by strong responses in a diversity of food web components (Kitchell et al., 1999). Their diet of a variety of pelagic and mesopelagic species, and their trophic position assure an important role as they themselves are prey for higher apex predators. Tunas are considered the most effective generalists in the system as they are abundant opportunistic carnivores with high degrees of trophic interaction and diet overlap (Kitchell et al., 1999). Ecosystem modelling indicated that adult skipjack and yellowfin have critically important ecosystem roles. Their removal evoked substantial and sustained changes in the structure of the system (Kitchell et al., 1999).

Allain et al. (2007) constructed a trophic mass-balance ecosystem model of the Warm Pool/Cold tongue pelagic ecosystem using Ecopath with Ecosim software (Figure 25). They describe the warm pool as an oligotrophic system characterized by low salinity, low nitrates, high temperature, deep thermocline, low surface chlorophyll and maximum chlorophyll located at 90m depth. Conversely, the cold tongue in the Eastern equatorial Pacific is described as an upwelling system with high salinity, high nitrates, low temperature, shallow thermocline, high surface chlorophyll and maximum chlorophyll at the surface. This model indicated that the ecosystem responds to both top-down and bottom-up processes, and has the characteristics of a complex form of ‘wasp-waist’ structure where the majority of the system’s biomass is comprised of mid-trophic level groups. Significant complexity was further added through the effects of climate change, including increased sea surface temperature leading to changes in ocean stratification dynamics and changes in the depth of the thermocline. A

combination of increased fishing and climate change produced complex trophic cascades, causing unpredictable increases and decreases in the biomass of groups representing all trophic levels, similar to unpredictable wasp-waist ecosystems in productive temperate ecosystems. This study noted that skipjack tuna appears to be a very resilient species, such that it was nearly impossible to eliminate it from the system with a top-down control (i.e., fishing), which is probably related to its high production rate and internal density-dependence induced by cannibalism.

The available model-based predictions provide only indirect evidence of the trophic impacts associated with declining apex predator abundance, as there are difficulties applying detailed trophic models to open ocean systems in which ecological and fishery data uncertainties are large (Cox et al., 2002).

Warm Pool Pelagic Ecosystem Evaluation

A further study (Allain et al. 2015) has examined a more restricted area of the warm pool pelagic ecosystem (Figure 26) using Ecopath with Ecosim (www.ecopath.org) to provide information on the potential impacts of tuna fishing. This ecosystem model was characterised by five trophic levels, a high number of trophic links between groups, and a diverse pool of prey for predators. In the model, the majority (74%) of the ecosystem's biomass was in trophic levels 1–2 (phytoplankton, zooplankton), whereas 89% of the industrial fish catch (tuna, edible bycatch and other top predators) was in trophic levels 3–5. The model was used to explore nine different scenarios of fishing effort, ranging from measures designed to reduce and/or increase the amount of bycatch, decrease and/or increase the amount of tuna harvested by altering the amount of longline fishing and purse-seine fishing effort on free swimming schools and on schools associated with FADs. The modelling showed that the warm pool ecosystem structure is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community). The intrinsic resistance of the ecosystem to perturbation appears to be related to the high diversity of predators in the food web that consume a wide range of prey. The structure of the ecosystem was most sensitive to changes in the biomass of prey groups (e.g. small pelagic fish such as anchovy).

This more recent model of the warm pool (Allain et al. 2015), however, covered only a part of the WCPO (Figure 26) and substantial catches of skipjack and yellowfin tuna are taken from waters outside the modelled area, so it is unclear whether the findings of this study would apply to other areas of the WCPO.

Pacific Ocean Ecosystem Evaluation

At a broader scale, Sibert et al. (2006) described biomass trends of exploited populations of top level predators in the whole Pacific Ocean (the WCPO and the Eastern Pacific Ocean combined) (Figure 27) and compares them to estimated biomass projections had the fishery never been exploited. This study found that the trophic level of the catch had decreased slightly, but no such decrease was apparent in the population trophic level (Sibert et al., 2006). Overall, findings indicated that tuna fishery impacts on the Pacific Ocean ecosystem were likely to be minor.

Ecosystem impacts of FADs and other considerations

Leroy et al. (2013) have critiqued the ecosystem impacts of drifting and anchored FADs use by purse-seine tuna fisheries in the Western and Central Pacific Ocean. The direct impacts of removals and their impact on stock status are well known. There is greater uncertainty about other effects such as

impacts on fish behavior, predator and prey interactions, and the potential flow on effects of these to population level impacts. The use of FADs varies spatially across the WCPO and the effects may also vary by species (Leroy et al. 2013) and ontogenetically (Fuller et al. 2015). Responses to FADs may also vary among individual fish (Phillips et al. 2017). Leroy et al. (2013) indicated that FADs both attract and retain tuna (by unknown but probably different mechanisms), and may affect distribution and migrations of tuna. FADs have been shown to influence the behavior and movement patterns of skipjack, yellowfin, and bigeye tuna, with the juveniles of each species occupying shallower habitats when associated with FADs. Leroy et al. (2013) also document residence time of tunas up to 55 days and hypothesized that dense fields of AFADs may entrain fish for extended periods although this has not been studied. They noted that the ways in which FADs interact with the biotic components of tuna environmental preferences, through prey concentration, increased feeding on juvenile conspecifics, or incorrect habitat utilization, need further investigation, including tuna foraging and the effect of FADs on the behavior of other important species in the pelagic ecosystem.

The results of more recent studies by Phillips et al. (2017) suggest that processes working at different scales may explain the inter- and intra-individual variability in fish behavior that they observed for bigeye and yellowfin tuna. They suggested that there was an interaction between fine scale variability in the availability of prey, the local density of conspecifics, and the multi-species composition of the schools themselves whilst islands and other bathymetric features may affect vertical behaviour at larger spatial scales. They concluded that purse-seiners set on floating objects because they bring tuna to a more easily found locality in horizontal space, and then aggregate them in relative shallow water through this surface behaviour. The surface-association events they identified varied greatly. While some events were clear and prolonged, the large majority are not, and extended surface-association behaviour was rarely exhibited immediately prior to capture.

Another important consideration in the relationship between fishing and the ecosystem is the impact of climate change. Tuna stocks are particularly susceptible to the effects of environmental change. In addition to the seasonal, inter-annual and decadal variability in the WCPO (e.g. the El Niño Southern Oscillation - ENSO), projected changes in the marine environment over the coming decades include increases in sea surface temperature, sea level rise, ocean acidification and increases in precipitation. Recent climate change modelling predicts slight increases in skipjack tuna catch and biomass in the western and central Pacific until 2050, followed by biomass stabilisation and subsequent decrease after 2060 as the catch plateaus (Lehodey et al., 2013a). A shift in feeding and spawning grounds is also anticipated to shift to more favorable conditions in the eastern Pacific Ocean away from the current western equatorial region, as well as an extension to higher latitudes (Lehodey et al., 2013a).

The available model-based predictions provide only indirect evidence of the trophic impacts associated with declining apex predator abundance, as there are difficulties applying detailed trophic models to open ocean systems in which ecological and fishery data uncertainties are large (Cox et al., 2002).

Overall, the above modelling studies, together with results of the stock assessments of the main species (described under Principle 1) suggests it is unlikely that the tuna harvested by UoA vessels in WCPO waters is having an irreversible impact on ecosystem functioning. The ongoing productivity of the purse seine fishery in the WCPO also provides evidence that the structure and function of the ecosystem has not been compromised by the fishery.

Ultimately, for this assessment against the MSC requirements, a key question about all these effects is whether they could affect populations in ways that would not be detected by current monitoring and assessment programs. Because if monitoring and assessment programs are able to detect any such changes and the harvest strategy is responsive to them, then the Principle 1 and 2 objectives are still likely to be achieved. The monitoring and assessment programs in place are very comprehensive, the scientists involved are well aware of these issues and are active in the research on them, so we consider it highly unlikely that they would disrupt key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

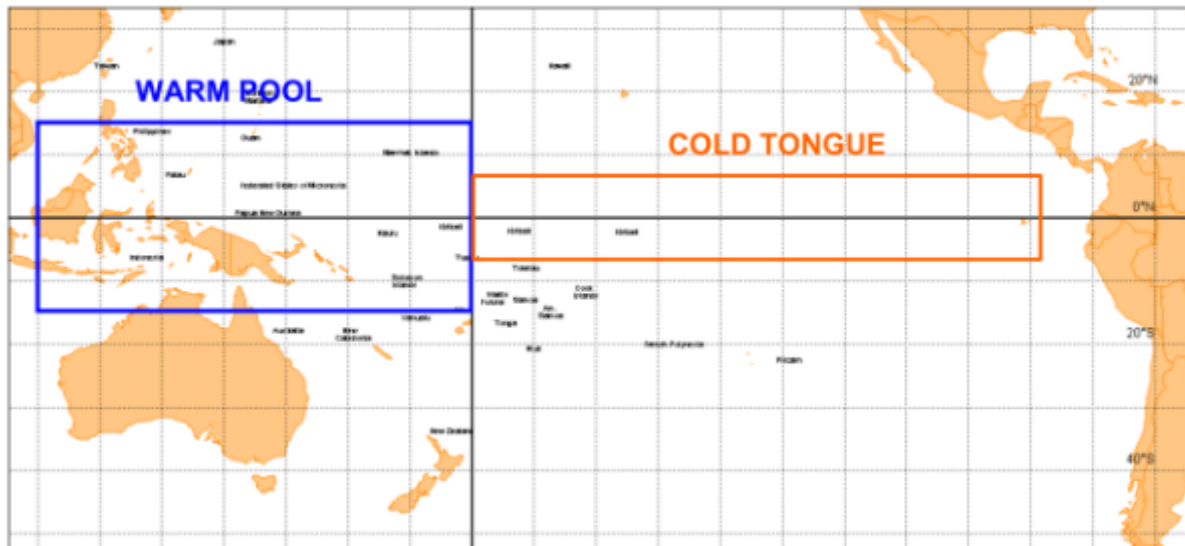


Figure 25. Spatial extent of the warm pool – cold tongue system in the Pacific Ocean (from Allain et al. 2007).

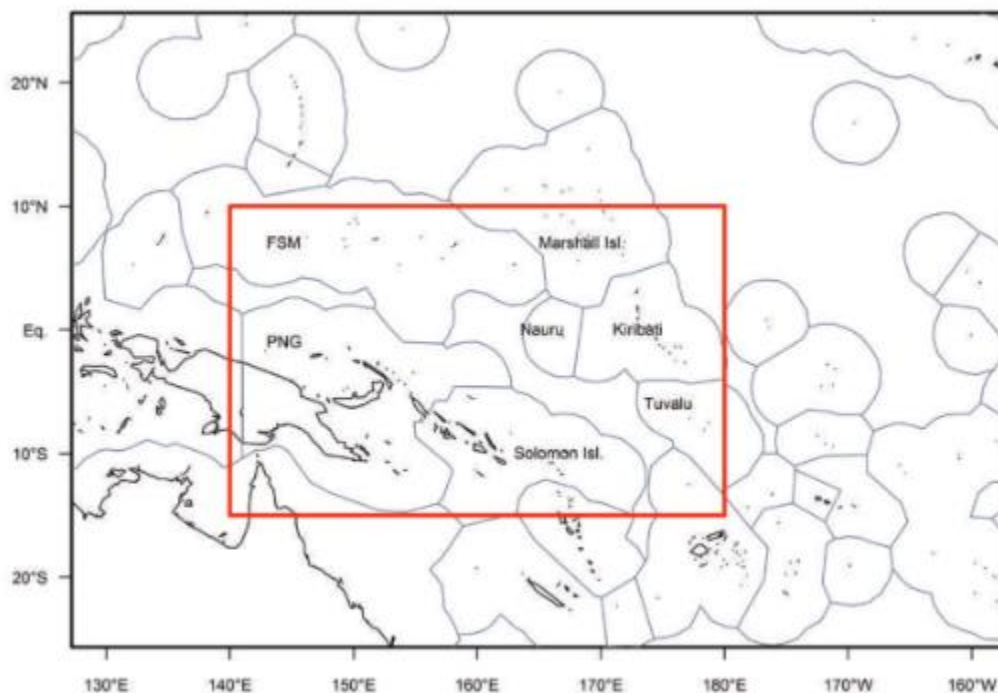


Figure 26. The boundaries of the area covered by the warm pool ecosystem model, and the exclusive economic zones of the countries included in the model. FSM = Federated States of Micronesia; PNG = Papua New Guinea (from Allain et al. 2015).

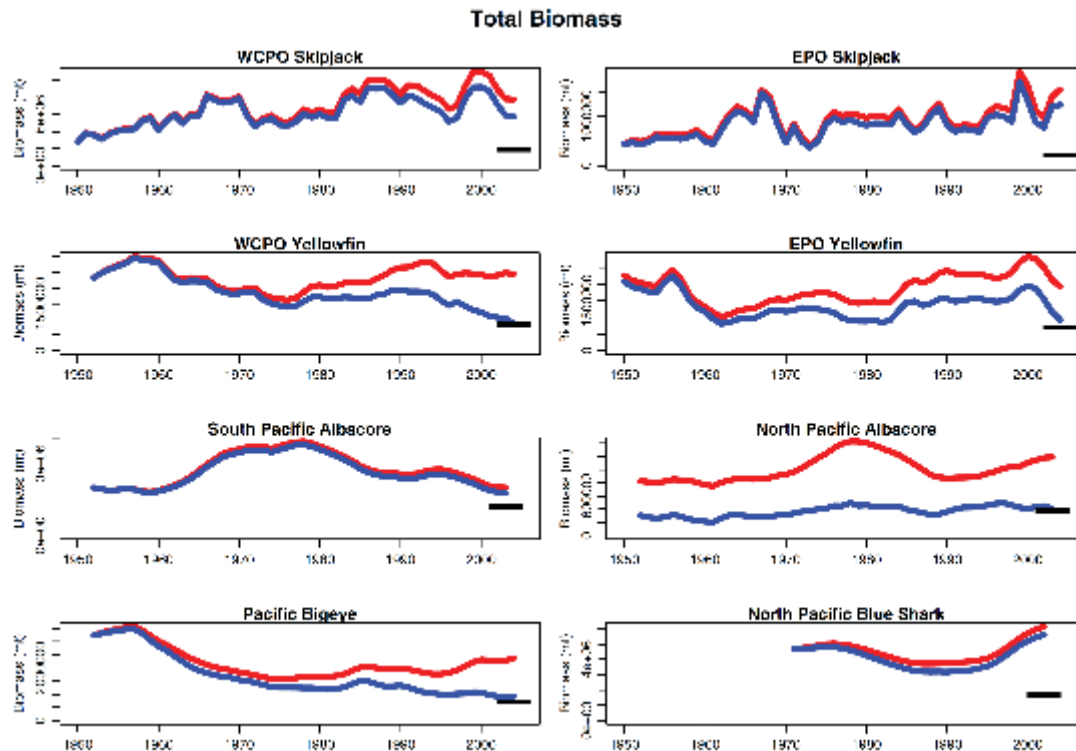


Figure 27. Trends in total biomass for eight stocks of large predators in the Pacific Ocean. Blue lines indicate the biomass estimated from the observed fishing history (the exploited population), and red lines indicate the biomass estimated in the absence of all fishing (the unexploited population). The single black line indicates the equilibrium biomass corresponding to maximum sustainable yield conditions, assuming current levels of recruitment and distribution of fishing mortality among fisheries. (from Sibert et al., 2006)

Management

The FAO Code of Conduct for Responsible Fisheries (1995) provides a reference framework for sustainable fisheries addressing ecosystem considerations, principles and goals needed for an Ecosystem Approach to Fisheries Management (EAFM). The Code is voluntary, although parts are based on international law, including the 1982 United Nations Convention on the Law of the Sea (UNCLOS). One of the principles of the Code is that management measures should not only ensure the conservation of target species but also species belonging to the same ecosystem. This approach is now explicit in the WCPFC Convention, although tuna fisheries remain managed on single-species basis and there does not appear to be integrated domestic and international strategies to manage the ecosystem components of this fishery.

The ecosystem role of yellowfin tuna is not explicitly considered within management decisions, but the overarching goal of managing to MSY levels (or above) implicitly takes this into account assuming ecosystem stability. In turn, consideration of the wider fishery implications, through the basis of management on the outcomes of the WCPFC assessments, supports the management strategy.

Information

As well as collecting data on target species taken in the WCPO fishery, there has been and continues to be collection of information for and assessments of a wide range of other components of the WCPO ecosystem, including:

- data on the bycatch of large purse-seine vessels and other fishing operations;
- data on the spatial distribution of the bycatch and the bycatch/catch ratios, collected for analysis of policy options to reduce bycatches;
- information to evaluate measures to reduce bycatch, such as closures, effort limits;
- assessment of habitat preferences and the effect of environmental changes.

This effort occurs through observer programmes (e.g. bycatch composition and quantities), trophic analyses (e.g. stomach contents, stable isotopes), and mid-trophic level sampling (e.g. acoustics and net sampling of micronekton and zooplankton). Allain et al. (2011) discuss a number of projects which contribute to EAFM. These include but are not limited to:

- Regional Observer Programme: has the objective to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the CMMs adopted by the Commission. The Programme is based on the use of existing regional, sub-regional and national observer programmes already in place amongst WCPFC members. Although there have been problems with data obtained under this programme, including biases introduced through operational changes and historically low coverage, recent improvements in the Programme, including 100% coverage in the purse seine fishery from 2010 and a minimum of 5% coverage in the longline fishery from 2012 should improve the quantity and quality of data available.
- data on species' diet has been used to develop Pacific Ocean food-web models (Eastern Tropical Pacific, Central North Pacific, Pacific Warm pool, and the Australian Eastern Tuna and Billfish Fisheries) developed with the Ecopath with Ecosim (EwE) modelling tool.
- the bycatch mitigation information system (BMIS) is the result of a WCPFC project to centralise and make information available on the mitigation and management of bycatch in WCPO. The database is a reference and educational tool that supports the Commission's responsibilities with regard to the sustainable management of non-target, or bycatch, species in WCPO fisheries targeting highly migratory species, including tuna and billfish (see <http://bmis.wcpfc.int/index.php>) (Fitzsimmons, 2011).

The ecosystem model, SEAPODYM, was developed to investigate spatial population dynamics of fish under the influence of both fishing and environmental effects. In addition to fisheries and other fish relevant data (e.g. tagging data, acoustic biomass estimates, eggs and larvae density), the model utilizes environmental data in a manner that allows high resolution prediction (Lehodey et al., 2008). SEAPODYM was initially developed for tuna species and complements the WCPFC Scientific Committee's MULTIFAN-CL models by providing additional information on how tuna distributions are structured in space and time.

Additional focus on ecosystem information has been provided through Kobe By-catch Technical Working Group (KBTWG) which was established in 2009 with the aim of supporting, streamlining, and seeking to harmonize the by-catch related activities of Ecosystems/By-catch working groups across RFMOs. The KBTWG's terms of reference include (from Nicol et al., 2013):

- Identify, compare and review the data fields and collection protocols of logbook and observer by-catch data being employed by each Tuna RFMO. Provide guidance for improving data collection efforts (e.g., information to be collected) and, to the extent possible, the harmonization of data collection protocols among Tuna RFMOs;
- Identify species of concern that, based on their susceptibility to fisheries and their conservation status, require immediate action across Tuna RFMOs. Review all available information on these species and identify their data needs;
- Review and identify appropriate qualitative and quantitative species population status determination methods for bycatch species;
- Review data analyses to identify all fishery and non-fishery (e.g. oceanographic and physical) factors contributing to bycatch, taking into account the confidentiality rules of each RFMO;
- Review existing bycatch mitigation measures including those adopted by each Tuna RFMO and consider new mitigation research findings to assess the potential utility of such measures in areas covered by other Tuna RFMOs taking into consideration differences among such areas; and
- Review and compile information on by-catch research that has been already conducted or is currently underway to delineate future research priorities and areas for future collaboration.

Leroy et al. (2013) noted that an important shortcoming for data analyses that would help evaluate the ecosystem impacts of FADS is the lack of information on the number and location of FADs in use in the WCPO. Some information on this is now forthcoming (e.g. Escalle et al. 2018b) and investigations are also continuing into issues such as the impacts of FADs on target and non-target species (Phillips et al. 2017).

At the WCPFC level, ecosystem considerations have been a long-standing area of investigation by the Scientific Committee. Ecosystem and bycatch are one of the themes that is addressed at all SC meetings and papers considered cover a broad range of topics under this heading.

3.5 Principle Three: Management System Background

3.5.1 Area of Operation and Relevant Jurisdictions

Yellowfin tuna is a highly migratory species which is subject to the United Nations Convention on the Law of the Sea (UNCLOS) 1982 and is managed under the Agreement relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. The Western and Central Pacific Fisheries Commission (WCPFC) management area within the EEZ of Indonesia. More specifically, the Indonesian Handline Yellowfin Tuna fishery under assessment operates within the waters of the Maluku Provincial government, part of the Fisheries Management Area (FMA) 715. Law of the Republic of Indonesia No.23/2014 concerning Local Government grants provincial government the authority to manage capture fisheries activities occurring in waters from 0-12 nautical miles from the shoreline. The fishery governance and management frameworks that this fishery falls under include regional mechanisms through WCPFC, national mechanism through Ministry of Marine Affairs and Fisheries of the Republic of Indonesia, local governance mechanism through Provincial government of the Maluku and informal management systems such as that under the Fair Trade Tuna hand-line fishermen associations. Informal management systems are considered legal and/or customary framework under Principle 3 (GSA 4.3).

Fishing is conducted from small fishing boats of less than 10 GT, which meets the standard of small-scale fishers as described under Law of the Republic of Indonesia No.7/2016 concerning Protection and Empowerment of Fisher, Fish Farmers, and Salt Farmers.

At the regional level, WCPFC has developed several Conservation and Management Measures (CMMs) and policies for different fisheries throughout the Convention area. As a signatory to WCPFC Convention, the Indonesian government must be in compliant with relevant WCPFC fisheries CMMs and policies within Indonesian EEZ and Indonesian (territorial) waters (See Figure 1)

This is stated under Article 8 of WCPFC Convention, 2000:

Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of highly migratory fish stocks in their entirety; and

The coastal State shall ensure that the measures adopted and applied by it to highly migratory fish stocks within areas under its national jurisdiction do not undermine the effectiveness of measures adopted by the Commission under this Convention in respect of the same stocks.

In particular, the management measures for Yellowfin tuna at WCPFC convention area is described under CMM2018-01 for Big-eye, Yellowfin and Skipjack Tuna, stating:

Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of bigeye, skipjack, and yellowfin tuna stocks in their entirety.

Measures shall ensure, at a minimum that stocks are maintained at levels capable of producing maximum sustainable yield, pending agreement on target reference points as part of the harvest strategy approach, as qualified by relevant environmental and economic factors including the

special requirements of developing States in the Convention Area as expressed by Article 5 of the Convention.

Coastal states are encouraged to take measures in archipelagic waters and territorial seas which are consistent with the objectives of this Measure and to inform the Commission Secretariat of the relevant measures that they will apply in these waters.

The Western and Central Pacific Fisheries Commission

The Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean established the WCPFC in 2004 to conserve and manage migratory fishery resources in the WCPO. More than half of the world's tuna catch is taken within the WCPFC Convention Area. The WCPFC is the overarching regional management framework relevant to this assessment.

The WCPFC Secretariat is based in Pohnpei, Federated States of Micronesia and includes a 'Scientific Committee' (SC) and a 'Technical and Compliance Committee' (TCC). The WCPFC comprises member nations, participating territories and the fishing entity of Chinese Taipei. A 'Northern Committee' was established to deal with management and conservation issues to the north of 20° N. In addition to these three bodies specified in the Convention, the Commission may establish other subsidiary bodies (e.g., the Finance and Administration Committee) and also employs ad hoc working groups as required. Ad hoc working groups have been established for data-related issues, the Commission's vessel monitoring system, the regional observer program, and other issues.

Scientists of the Secretariat of the Pacific Community's Oceanic Fisheries Programme (SPC- OFP) are responsible for leading much of the scientific research utilized by the Committees. WCPFC has a Memorandum of Understanding (MoU) with the SPC to provide scientific services, including data management services. Under the MoU, the SPC's Oceanic Fisheries Programme collects, compiles, and disseminates fisheries data; undertakes regional stock assessments of key target and non-target species; conducts ecosystem analyses; and advises on the WCPFC's observer program and other strategies to monitor and control fishing activities.

The SC is required to work closely with the Inter-American Tropical Tuna Commission, particularly in areas of overlap. Flag states in areas of overlap must nominate whether they will apply IATTC or WCPFC measures. The U.S. has chosen to apply WCPFC measures in such areas. The SC also works closely with the International Scientific Committee (ISC), which has certain responsibilities for scientific investigation of highly migratory species in the north Pacific in support of the Northern Committee.

The Convention incorporates provisions of the United Nations Fish Stocks Agreement (UNFSA), in particular:

- The objective of ensuring, the long-term conservation and sustainable use of highly migratory fish stocks (Article 2);
- The general principles in Article 5 of UNFSA including the application of the precautionary approach, incorporating the UNFSA Annex II Guidelines For The Application of Precautionary Reference Points (Article 5);
- The application of these principles by parties in their cooperation under the Convention, including the application of these principles in areas under national jurisdiction, (Article 7);
- Compatibility of measures established for the high seas and those adopted for areas under national jurisdiction (Article 8);
- Application of the dispute settlement provisions of the UN Fish Stocks Agreement to disputes between WCPFC Members (Article 31); and
- Recognition of the interests of small scale and artisanal fishers, and of communities and small island states dependent for their food and livelihoods on tuna resources (Article 30).

The Convention provides a framework for the participation of fishing entities in the Commission which legally binds fishing entities to the provisions of the Convention, participation by territories and possessions in the work of the Commission. The Convention also provides recognition of the special requirements of developing States, in particular, small island developing states (SIDS) and cooperation with other RFMOs whose respective areas of competence overlap with the WCPFC.

The Commission has 26 Members, of which most are SIDS. The current members are: Australia, Canada, People's Republic of China, Cook Islands, European Union (EU), Federated States of Micronesia (FSM), Fiji, France, Indonesia, Japan, Kiribati, Korea, Republic of the Marshall Islands (RMI), Nauru, New Zealand, Niue, Palau, Papua New Guinea (PNG), Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America (USA) and Vanuatu. Participating Territories include American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau and Wallis and Futuna. In addition, there are Cooperating Non-members consisting of Ecuador, El Salvador, Mexico, Liberia, Vietnam, Panama and Thailand.

A list of the Conservation and Management Measures (CMMs) relevant to the purse seine fishery can be sourced on the WCPFC website (www.wcpfc.int/conservation-and-management-measures).

The WCPFC has a consensus-based decision-making process, with provision for a two-chambered voting process requiring a 75% majority in both chambers if all efforts to reach a decision by consensus have been exhausted (WCPFC 2004a; Rule 22). This voting provision has not been used for deciding on conservation and management measures. In addition, there are provisions for a decision to be reviewed by a review panel at the request of a Member (WCPFC 2000; Annex II). Decision-making is open, with the process, outcomes and basis for decisions recorded in detail in records of Commission sessions and publicly available papers. The subsidiary bodies of the Commission provide extensive, detailed reports to the Commission, including advice and recommendations (see meeting reports at <http://www.wcpfc.int/meetings>).

Roles and responsibilities of WCPFC members are clearly described in the Convention, especially Articles 23 and 24, the Commission Rules of Procedure, Conservation and Management Measures,

and other Commission rules and decisions, including the Rules for Scientific Data to be Provided to the Commission, and the Rules and Procedures for Access to and Dissemination of Data Compiled by the Commission.

Article 30 recognizes special requirements for developing states in regard to high dependence on marine resources and the need to avoid adverse impacts on subsistence fishers and indigenous people. To this end, the Article established a fund to facilitate effective participation through provision of financial and technical resources and assistance to developing States.

The WCPFC allows participation by non-members and territories, with particular opportunities for cooperating non-Members. Observers are allowed to participate in meetings of the Commission and its subsidiary bodies, including the Scientific Committee, the TCC and the Finance and Administration Committee. As part of the conditions for Cooperating Non-Member status, applicants are required to provide annually a “a commitment to cooperate fully in the implementation of conservation and management measures adopted by the Commission and to ensure that fishing vessels flying its flag and fishing in the Convention Area and, to the greatest extent possible, its nationals, comply with the provisions of the Convention and Conservation and Management Measures adopted by the Commission.” (CMM 2009-11).

National Level Management

Indonesia ratified the UN Conventions on the Law of the Sea (UNCLOS) 1982 in 1985 through Law No.17/1985. Indonesia also ratified the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks in 2009 through Law No. 21/2009. On the basis of these international commitments, Indonesia through Presidential Regulation No.61/2013 ratified the Convention on the Conservation and Management of Highly Migratory Fish Stock in the Western and Central Pacific Oceans. This signified the formal engagement of the Indonesian government at WCPFC regional fisheries management organization. Indonesia became a full Cooperating Commission Member (CCM) of the WCPFC in December 2013, which enabled Indonesia to participate in General Session and Scientific and Technical Working Groups of the WCPFC. Besides the WCPFC, Indonesia is also party to other regional fisheries management organizations (RFMOs) such as Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and Indian Ocean Tuna Commission (IOTC).

Indonesian government established the Fisheries Management Areas (FMA), which are distinct ecological units, as a geographical unit of its fisheries governance and management. Indonesian waters were divided into 11 FMAs under the Ministry of Marine Affairs and Fisheries (MMAF) Decision No. 18/2014. MMAF often uses the FMA geographical scope as units to determine fisheries status, fishing capacity and fishing licensing allocation. The breadth of FMA that extends across more than one provincial administrative borders is considered ecologically meaningful to uphold the implementation of Ecosystem-based Approach to Fishery Management (EAFM) principles and requires close collaboration among provincial governments and other stakeholders involved to ensure cohesive management planning and efficient programs implementation. To create a consultative platform for these stakeholders to address fisheries management issues within each FMA, a fisheries management institution (also known as Fisheries Management Councils) was recently established through Decision of Directorate General (DG) for Capture Fisheries No. 47/KEP-DJPT/2017 concerning

Fisheries Manager for Indonesian FMAs. The structure of the Indonesian Fisheries Management Councils in each FMA can be seen at Figure 28 below.

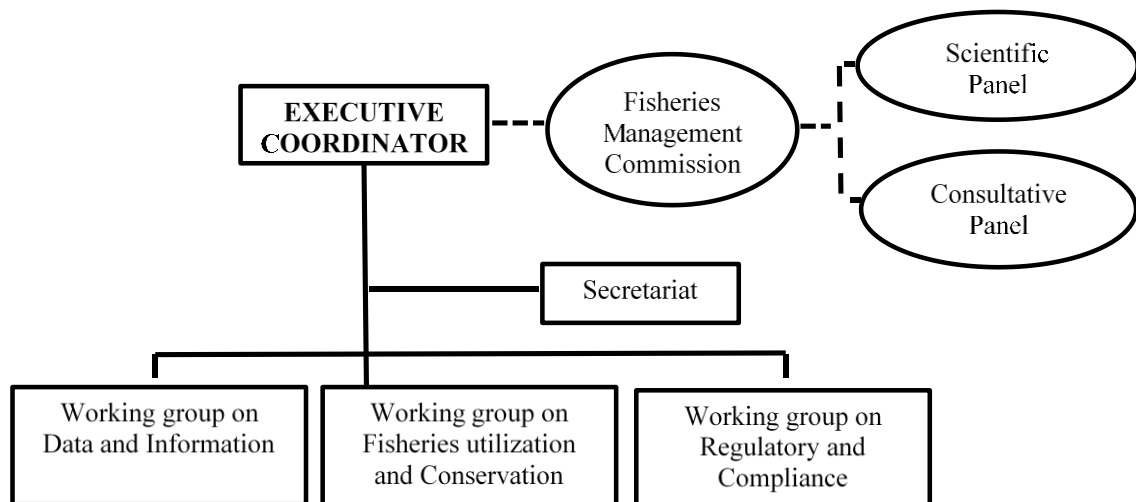


Figure 28. The structure of the Indonesian Fisheries Management Council

As an archipelagic state member of WCPFC, Indonesia is bound to comply with WCPFC requirement to ensure that highly migratory stocks (e.g., Yellowfin tuna) conservation and management measures developed and implemented under its national jurisdiction shall be compatible with measures established for the Convention's area. This has been reflected in the recently developed strategy document for Indonesian tuna harvest strategies titled "Framework for Harvest Strategies for Tropical Tuna in Archipelagic Waters of Indonesia" submitted to Scientific Committee of WCPFC at its fourteenth regular session held in Busan, Republic of Korea, August 2018. The Limit Reference Point for Yellowfin tuna adopted in this framework harvest strategy document was taken from that set by WCPFC (i.e. to maintain spawning stock biomass above 0.2 of the unfished level with a 90% probability). However, no Target Reference Point was set in the harvest strategy framework.

To enhance and strengthen broader scope of fisheries management, including fisheries enforcement in the region, Indonesian government along with its neighboring countries (Australia, Brunei Darussalam, Cambodia, Malaysia, Papua New Guinea, The Philippines, Singapore, Thailand, Timor-Leste and Vietnam) have developed Regional Plan of Action to promote responsible fishing practices including combating IUU fishing. At the national level, Indonesia has also produced various plans of action in support of marine conservation and fisheries management in line with its international commitments including:

- National Plan of Action for Conservation and Management of Sharks and Rays, 2016-2020
- National Plan of Action on Preventing and Combatting Illegal Unreported Unregulated (IUU) Fishing, 2012-2016.

The fishery under assessment oftentimes unintentionally catches sharks, rays, birds that might be categorized as Endangered, Threatened and Protected (ETP) species under the IUCN categories. However, these catch numbers are extremely limited for the UoA and when these species are captured, they are released back into the ocean (Fair Trade Capture Fisheries audit report, 2019). This practice

has been part of their compliance measures as groups of fishers that have received Fair Trade USA Capture Fisheries program certification since 2014.

As mentioned earlier, as the fishery consists of small-scale fishermen and according to Indonesian Law No.31/2004 concerning Fisheries (later amended to Law No. 45/2009) small-scale fishers are exempted from the requirement to obtain fishing licenses, known as *Surat Izin Penangkapan Ikan(SIPI)* (Article 27 (5) Fisheries Law No. 45/2009) and *Surat Izin Kapal Pengangkut Ikan/SIKPI* (fish carrier/vessel license) (Article 28 (4) Fisheries Law No. 45/2009). Instead, small-scale fishermen are free to conduct fishing operations in all FMAs (Article 61 (1) Fisheries Law No. 31/2004). They are obliged to register their vessel to the local fisheries agency but do not pay a fee (Article 61 (5) Fisheries Law No. 31/2004).

The fishing licenses for small-scale fisher are replaced by the proof of boat registration (MMAF Regulation No. 30/2012).

Maluku Provincial government

Indonesian Law No.23/2014 concerning Local Government defines new mandates for provincial government in relation to matters relating to marine capture fisheries management. These mandates now include, among others:

- Management of capture fisheries in sea waters up to 12 nautical miles.
- Issuance of capture fisheries business license (*surat izin usaha perikanan tangkap*) for fishing vessels measured above 5 GT to 30 GT.
- Issuance of licenses for provision of fishing vessels and fish carrier measured above 5 GT to 30 GT.
- Registration of fishing vessels above 5 GT to 30 GT.

Indonesia regulates fishing activities by controlling inputs to the fisheries through fisheries licensing system. MMAF Regulation No.30/2012 concerning Capture Fisheries Business in Indonesian FMAs authorizes Governor (the head of provincial government) to issue fishing licenses for fishing boats measured above 10 to 30 GT that operates within the FMA where that particular province sits in. As FMAs encompasses the waters of more than one provincial jurisdiction, it requires good collaboration among all provincial governments and relevant stakeholders belonging to an FMA to effectively and successfully plan, design and implement any fisheries management measures/interventions for particular fishery in that FMA. In this regard, the roles of Fisheries Management Councils mentioned earlier as a consultative platform for stakeholders to discuss and decide on fisheries management measures and interventions is critical. As the fishery under assessment falls within the category of small-scale fisheries, the only applicable to the UoA are the requirements for registration of the fishing vessels. The registration is that valid for 1 (one) year and renewable, at the local (Province) government fisheries agency.

Fair Trade Tuna Hand-line Fishermen Associations

The small-scale yellowfin handline tuna fishery (the unit of assessment/UoA) in north Buru and north Seram have been certified against Fair Trade USA Capture Fisheries Standard (FT USA) since October

2014. Coral Triangle Processor (CTP) based in Bali (the client under this MSC assessment) is also the client/holder of the above FT USA certificate with Yayasan Masyarakat dan Perikanan Indonesia (MDPI) as an FT USA implementing partner in Indonesia. The market incentive received by Fair Trade certified fishers is the so-called premium funds. The amount of the premium fund received is defined by the sales volume currently priced at US\$ 0.30 per kg of loin weight in the shipping container departing from the first processing factory. The amount of premium fund is very significant, especially for small-scale fishers living in the villages in north Buru and north Seram. In 2017, it was reported for example that the total premium fund disbursed to Fisher Associations (FAs) in north Buru was US\$ 72,807 or more than one billion Indonesian Rupiah with today's exchange rate (US\$ 1 ~ IDR 14,400). These premium funds have been utilized by fishers to support improve their children educations, social welfare and religious activities, environmental awareness, FA's organization strengthening, and fishers' safety at sea.

The creation of Fishers Associations (FAs) and Fair Trade Committees (FTCs) are mandatory for fishers to be able to receive premium funds. The premium funds are disbursed by the certificate holder on the FTC's bank account which is then distributed to FAs according to the FA funding proposals as approved by the FTC. The FAs are governed based on the rules defined in their establishment deeds. In general, each FA has administrator consist of a chairperson, a secretary, a treasurer and members. The FTC committees discuss data collection and issues related fisheries e.g. vessel registration, FAD, Capacity building, action plan, etc.

FT USA is a relatively new capture fishery certification standard that fills the gap of accessibility and social sustainability of left by other existing global certification standards. The FT USA evaluates economic, social and ecological aspects of the fishery (fishers, fishing gears, environment/habitats, and fish). The ecological aspect of the assessment is captured under the Resource Management section that looks at factors affecting the sustainability of primary, secondary and by-catch species in the fishery. Hence, FT USA requiresevidence of proper fishery documentation, data collection, determination of stock health and measures for biodiversity and ecosystem protections.

As part of the data collection programs required for FT USA certification, all members of yellowfin hand-line tuna FAs in north Buru and north Seram are required to report on their catches including name and amount/weight of primary species (yellowfin tuna), secondary species and by-catch caught and/or encountered when fishing at sea. All data collected from members of FAs were then stored, maintained and analyzed by MDPI in its online fisheries database system known as "I-Fish" in collaboration with government. As stated in the FAs establishment deeds, non-compliant fisher members of the FA will receive consequences including exclusion from the FA. In the past few years, for example, the Wamrugut Fisher Association in Waipure Village of north Buru have dismissed fishers as a form of disciplinary action to deal with their non-compliance, including their non-compliance on data collection requirement (personal communication with head of Wamrugut FA in February 2019).

MDPI has set fisheries co-management committees (FCMCs) which are different bodies from the Fisheries Management Councils (the FMCs from KKP). These committees meet every 6 months with all stakeholders to discuss topics of concern etc. Members of the Tuna Fisheries Management Committee consist of representatives from government, fishermen groups, suppliers, fisheries industry players, researchers and academics, industry associations and NGOs. The Tuna Fisheries Management Committee play an important role by offering an outreach platform to central

governments and stakeholders to discuss national fisheries management plans, data collection processes, the implications of new regulations or of concern in supply chains and activities

3.5.2 Group of stakeholders within the fishery under assessment

Yellowfin tuna in Indonesia is harvested using different fishing gears including hand-line, long-line, pole and line, purse seine and gillnet. Presently, Indonesian tuna fisheries are predominantly caught by small-scale fishers (with fishing boats of <5 GT) using hand-line (Zulficar Mochtar, Director General of Capture Fisheries, MMAF was quoted by Mongabay, 21 January 2019). He further stated that with the current moratorium for foreign fishing vessels operating within the Indonesian EEZs, Indonesia has not been able to fully utilize its allocated tuna fisheries quota in the EEZ and high seas. The participation of small-scale fishers in tuna fishery are encouraged as part of efforts by the government to provide better livelihood for small-scale fishers as it is also depicted in the tuna fisheries management plan.

Ministry of Marine Affairs and Fisheries (MMAF)

The main task of MMAF is to carry out government affairs in marine and fisheries sectors to support the president in administering the state government affairs. The main functions of MMAF include:

1. Formulation, affirmation, and implementation of policies and technical assistance and supervisions on matters relating to management of ocean space, management of conservation and marine biodiversity, management of coastal and small islands, management of capture fisheries, management of marine and aquaculture, strengthening of marine and fisheries products competitiveness, and surveillance of marine and fisheries resources.
2. Research activities, human resource development and community empowerment in the field of marine and fisheries
3. Fish quarantine, quality control, fisheries product safety and fish biosafety.
4. The organizational structure of MMAF and their mandates as per August 2017 is as follow:
5. Secretariat General
6. Inspectorate General
7. Directorate General of Spatial Planning
8. Directorate General of Capture Fisheries
9. Directorate General of Aquaculture
10. Directorate General of Strengthening Competitiveness of Marine and Fisheries Products
11. Directorate General of Surveillance for Marine and Fisheries Resources
12. Agency for Research and Marine and Fisheries Human Resource Development
13. Agency for Fish Quarantine, Quality Control and Safety of Fisheries Products
14. The goals of Indonesian marine and fisheries development plan as stated in the MMAF Strategic Plan 2015-2019 are intended to achieve the three missions of the Ministry which are: (a) Sovereignty, (b) Sustainability and (c) Prosperity. The stated goals are as follow:
15. To improve surveillance of marine and fisheries resource.
16. To establish fish quarantine systems, quality control of fisheries products, and fish biosafety.
17. To optimize management of ocean space, conservation and marine biodiversity.
18. To improve business sustainability from capture fisheries and aquaculture.
19. To improve competitiveness and logistic system of marine and fisheries products.
20. To develop human resource capacity and community empowerment.
21. To develop innovations on science and marine and fisheries technology.

22. The most relevant unit (Directorate General) within MMAF responsible for fisheries management is Directorate General of Capture Fisheries. The Director General for Capture Fisheries is supported by five Directors which are:
23. Secretary for Director General
24. Director for Fishery Resource Management
25. Director for Fishing Vessels and Fishing Gears
26. Director for Fishing Ports
27. Director for Licensing and Fishers Affairs

Maluku Provincial Government and Buru District Government

As described under Law No.23/2014 concerning Local Government, the mandate for capture fisheries management within the waters measured from 0-12 nautical miles lies solely within the hands of the provincial government. This means that, although by administrative boundaries, the villages and fishing grounds of the fishers under assessment in Buru and Seram are each located within the administrative boundaries of Buru district and Central Maluku district, the fisheries management authority lies within the Maluku provincial government. Usually, provincial government creates a unit supervised directly by the Governor, responsible for marine and fisheries affairs at the provincial level known as marine and fisheries agency (*Dinas Kelautan dan Perikanan/DKP*).

The fishery under assessment falls within the category of small-scale, therefore not required to obtain fishing licenses. Instead, they are obligated to register their fishing boats at the office of DKP at Maluku provincial government. The small-scale boat registration process can be challenging in many instances, considering the long distance from where fishers live in the villages in Buru and/or Seram to Ambon, the capital of Maluku provincial government, where *DKP* is located. To cope with this, *DKP* of Maluku province has just established their extension offices placed in areas closer to remote locations throughout the provincial waters, including that of Buru and Central Maluku districts. This will bring *DKP* offices closer to remote villages so that small-fishers who want to register their boats will no longer need to travel to Ambon.

Other national government agencies

Other national government agencies that may be present (have their offices) in the provincial/district areas and are relevant to fisheries management and safety at sea include enforcement agencies such as: Police Department (especially Water Policy unit), Navy, coast guard (Badan Keamanan Laut/Bakamla) and surveillance unit under the Directorate General of Surveillance for Marine and Fisheries Resources of MMAF. Also, another important agency is Ministry of Transportation – that currently still holds the authority to measure vessel/boat (including fishing vessel) - which is a prerequisite for obtaining fishing boat registration certificate. Also, both Ministry of Forestry and Living Environment and MMAF currently shares the responsibility concerning management of Endangered, Threatened and Protected (ETP) species in Indonesia. Research agencies and universities coordinated under the Ministry of Research, Technology and Higher Education such as Indonesian Science Institute as well as national universities are important agencies that may have important research/information contributing to effective and successful management of the target fishery. Finally, National Commission on Fisheries Resource Assessment (Komisi Nasional Pengkajian

Sumberday Ikan/ Komnas Kajiskan), a commission established as per mandate of Fisheries Law to provide scientific advice to Minister of Marine Affairs and Fisheries regarding Indonesian fisheries resource status. Members of this Commission represent among other fisheries experts, academia, and member of fishing associations throughout Indonesia.

Hand-line tuna fishermen associations

The Yellowfin tuna hand-line fishers under assessment in North Buru and Seram, are all members of Fishermen Associations (FAs) created under the auspices of the Fair Trade USA Capture Fisheries certification program. In general, the organizational structure of the FAs consisted of chairperson, secretary, treasurer and members with roles, rights, and responsibilities as described in the FAs establishment deeds. The main incentive for member of FAs is the 'premium fund,' a collection of funds obtained from proportion of sales of products (fish) caught by member of FAs. This fund might be used –upon consensus of all members- to support the needs of the FA members and various community development programs in the village. In return member of FA are obliged to comply with Fair Trade Capture Fisheries Standard, including catch data recording to inform among others assessment of stock status, safeguarding of Endangered, Threatened and Protected (ETP) species, and development of fisheries management plan.

Non-Government Organizations (NGOs) and other related fisheries associations

A number of non-government organizations, fisheries, and marine conservation-related projects and member of fisheries associations have also been working in Buru and Seram to support sustainable fisheries management. MDPI (Masyarakat dan Perikanan Indonesia) for example is an Indonesian NGO that has been working in Buru and Seram that has helped to create and to nurture the Fair Trade Fisheries Associations mentioned earlier. Besides, WWF Indonesia also has its presence in Buru working to support marine turtle conservation. Also, AP2HI (Asosiasi Perikanan Pole & Line dan Hand-line Indonesia) fisheries association, through PT Harta Samudera also has its presence within the area of the fishery under unit of assessment. PT Harta Samudra is also part of the client group under assessment. AP2HI is an association that promotes and supports sustainability of tuna fisheries in Indonesia and contributes to innovating the industry and helping fisheries achieve MSC certification through Fishery Improvement Projects.

3.5.3 Stakeholder consultation

The WCPF Convention clearly defines internal consultative processes among its member states, subsidiary bodies (Scientific Committee and Technical and Compliance Committee) and external consultative processes with other relevant intergovernmental organizations such as other Regional Fisheries Management Organizations (RFMOs) besides WCPFO. In addition, other interested parties, including NGOs, may participate in the SC and TCC meetings upon request as observers. The Commission provides regular updates on the past and upcoming meetings and workshop and makes publishes documents/reports of decisions, advice and guidelines on the website.

At the national level, fisheries stakeholder consultations were conducted to develop various fisheries management plans including that of Fisheries Management Plan for Tuna, Skipjack Tuna and Neritic Tuna, and Framework for Harvest Strategies for Tropical Tuna in Archipelagic Waters of Indonesia.

Especially for the development of the latter document (framework for tuna harvest strategy) published in mid-2018, there were 8 (eight) formal stakeholder consultations meetings/workshops conducted since its inception in March 2015. The meetings/workshops minutes indicated that they were attended by wide ranges of fisheries stakeholders including those representing provincial governments (including Maluku provincial government), various relevant Directorates within MMAF (including research agency), fisheries industry associations (including AP2HI, Indonesian Tuna Long-line Association/ATLI), NGOs (including MDPI, WWF, IPNLF), and experts from universities, National Commission on Fisheries Resource Assessment, CSIRO, and WCPFC-WPEA. The meetings records also indicated that MMAF has been actively seeking and receiving inputs/feedback/guidance from relevant stakeholders attending the meetings in determining ranges of key management measures potentially applicable for tuna fisheries management as well as biological references in defining stock status and limit reference point.

At the Fisheries Management Area (FMA) 715 level, a stakeholder consultative platform (Fisheries Management Council) (see The structure of the Indonesian Fisheries Management Council Figure 28) though it is still in its very early stage, has also been created in 2017. This FMA 715 council is chaired by the head of Ambon fishing port whom members consisted of representation from fisheries agencies at all provinces part of the FMA 715, scientists from government research agencies and universities, fishing industry associations, local/traditional fishers, and NGOs.

3.5.4 Decision-making process

The WCPF Convention promotes transparency in the decision making process and as a general rule, it shall be taken by consensus. As described under Article 20 of the Convention, if all efforts to reach consensus have been exhausted, decisions on questions of substance can be passed by a vote of three-fourths of the members of the Commission voting and present. This must include a three-fourths majority of the members of the South Pacific Forum Fisheries Agency (SPFFA) present and voting and a three-fourths majority of the non-members of the SPFFA present and voting. Votes on questions of procedure only require majority approval of the members of the Commission present and voting. Decision-making processes including the basis for making decisions, decision results/outcomes are recorded in the records of Commission sessions that are publicly available.

In general, the decision-making process in relation to the formalization of a Fisheries Management Plan in Indonesia includes stakeholder consultations, document formulation and approval/decision by the Minister of Marine Affairs and Fisheries. For fisheries-related documents other than Fisheries Management Plan, they might be decided/approved instead by Director General or other designated senior officials as in the case of tuna harvest strategy framework. All these consultations processes were of course chaired by the assigned senior officials from Directorate General of Capture Fisheries of MMAF in Jakarta.

The decision making concerning the substances of the harvest strategy was mostly taken place during the stakeholder consultation processes which were informed directly by inputs/feedback from participants. Nonetheless, we learned that still lot of questions concerning the substances during stakeholder consultations process in the tuna harvest strategy including that of Target Reference Point (TRP) that have not yet been fully addressed.

Fishery-Specific Management

Objectives for the Fishery

Fishery objectives

As stated within the WCPF Convention, the objective of the convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement. To achieve this the following principles and measures for fisheries conservation and management are taken:

1. Adopt measures to ensure long-term sustainability of highly migratory fish stocks in the Convention Area and promote the objective of their optimum utilization;
2. Ensure that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether sub-regional, regional or global;
3. Apply the precautionary approach in accordance with this Convention and all relevant internationally agreed standards and recommended practices and procedures;
4. Assess the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks;
5. Adopt measures to minimize waste, discards, catch by lost or abandoned gear, pollution originating from fishing vessels, catch of non-target species, both fish and non-fish species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species and promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques;
6. Protect biodiversity in the marine environment;
7. Take measures to prevent or eliminate over-fishing and excess fishing capacity and to ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of fishery resources;
8. Take into account the interests of artisanal and subsistence fishers;
9. Collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes; and
10. Implement and enforce conservation and management measures through effective monitoring, control and surveillance.

Indonesian Fisheries Law No. 31/2004 concerning Fisheries, defines nine objectives of fisheries management which are:

1. To improve the living conditions of small fishers and small fish farmers;
2. To improve country's foreign exchange income;
3. To drive job expansions and opportunities;
4. To ensure fish supply and increase protein intake from fish;
5. To optimize management of fish resources;
6. To improve productivity, quality, value added and competitiveness;
7. To increase availability of raw materials for fish processing industry;
8. To achieve optimum utilization of fish resources, fish cultivation land, and fish resources ecosystem; and

9. To ensure fish sustainability, fish cultivation land and coastal/marine space.

The fisheries management plan for FMA 715 has been developed and approved in 2016, by the Minister of MMAF through Ministerial Decision No.82/2016 concerning Fisheries Management Plan for Fisheries Management Area (FMA) 715. This document is meant to provide directions and guidance for local (provincial and district) governments and stakeholders in implementation of fisheries management within the area of FMA 715. The long-term goals and five-year targets (2016-2021) for fisheries management at FMA 715 as stated in the management plan document are as follow:

1. To achieve sustainable management of fishes and their habitats.
2. To improve social and economic benefits from sustainable fisheries
3. To improve active participation and compliance of stakeholders through collaborative management

The five years (2016-2021) fisheries management targets of FMA 715 defined based on the stated long-term goals above are as follow:

1. The use of legal fishing practices in coral reef fisheries increased by 50% from the baseline in 2016.
2. The level of utilization of small-pelagic fishes achieved sustainable level.
3. Areas of fisheries utilization within FMA 715 are developed and available.
4. Conflicts between migrant fishers (*nelayan andon*) with local fishers are eliminated.
5. Local wisdom in fisheries management are practiced and strengthened to support achieving sustainable fisheries.
6. Regular meetings of fisheries managers within the FMA 715, conducted at least twice in a year.
7. Fisheries Management Council for FMA 715 is established.
8. Surveillance activities in fisheries management are improved
9. Law enforcement in fisheries management is improved.
10. Fishing Aggregating Devices (FADs) are well-managed in accordance with applicable laws.

Indonesia has developed and formalized two important documents relating to tuna, skipjack tuna and neritic tuna fisheries management namely: (a) Fisheries management plan for tuna, skipjack tuna and neritic tuna, and (b) Framework for harvest strategies for tropical tuna in archipelagic waters of Indonesia. The long-term objectives of tuna, skipjack tuna and neritic tuna fisheries management as stated in the management plan include:

1. To achieve sustainable management of tuna, skipjack tuna and neritic tuna and their related-ecosystems. Under this objectives, eight targets were set for FMA 715 within a 5-year timeline (2015-2020) namely:
 1. Estimated potency and level of exploitation for tuna and skipjack tuna is fully (100%) available;
 2. Total allowable catch (TAC) estimate or catch limit for tuna and skipjack tuna is fully (100%) available;
 3. Harvest control rules and key indicators for tuna and skipjack tuna stocks is fully (100%) available;
 4. Climate change impacts mitigation study for tuna and skipjack tuna stocks is fully (100%) available;
 5. Assessment on the use of brach-line nylon in tuna long-line fishery is fully conducted;
 6. Tuna fishery risk-based assessment concerning by-catch and Ecologically-related species (ERS) for each fishing gears is completed;
 7. Assessment on the restriction of fishing with purse-seine in FAD is completed;
 8. Data on estimated potency and level of exploitation of by-catch is fully (100%) available
2. To improve compliance on implementation of law and regulations concerning the capture of tuna and skipjack tuna, by-catch and ERS. Under this objectives, seven targets were set for FMA 715 within a 5-year timeline (2015-2020) namely:

1. Within 2 year, a system to record all authorized (licensed) tuna and skipjack tuna fishing vessels within Indonesian archipelagic and territorial waters is available;
 2. Destructive fishing practices applied in tuna and skipjack tuna fishing are fully (100%) eliminated within 5 years;
 3. The catches of dolphins are fully eliminated within 5 years;
 4. Regulations to ban the holding of by-catch on board and landing of by-catch is fully in operation in 5 years.
 5. Tools to mitigate the ERS is available on board in 5 years' time;
 6. Meetings involving scientist, fisheries managers and stakeholders are conducted annually;
 7. Compliance on implementation of capture fisheries log books is improved by 40% within 5 year' time.
3. To meet market requirements for tuna and skipjack tuna. Under this objectives, one target was set for FMA 715 within a 5-year timeline (2015-2020) namely:
1. Supply chains system documented for tuna and skipjack tuna from Indonesian waters within 3 years' time.

As part of the implementation of action plans defined in the tuna, skipjack tuna and neritic tuna fisheries management plan, Indonesia has recently published a framework for its tuna fisheries harvest strategies. In this document, it is stated that the management objective of tuna and skipjack tuna management is to ensure the sustainability of Yellowfin tuna, big-eye tuna and skipjack tuna resources" through harvest strategy implementation. The operational objective is to maintain spawning stock biomass (SSB) above the limit reference point (LRP) of 0.2 of the unfished level with the probability of 90%. This was set to avoid the reduction of tuna and skipjack tuna stocks to level that average recruitment declines, which could hamper the ability of the species to reproduce. Indonesia is soon to set a Target Reference Point (TRP) for the fisheries when all possible implications for social and economic objectives are considered and understood. This activity to identify the TRP has already been scheduled as an action plan to be implemented soon under this harvest strategy implementation plan.

In the harvest strategy framework document, Possible options were identified for tuna and skipjack tuna fisheries management measures which are as follow:

1. Limit on use of Fish Aggregating Device (FAD).
2. Spatial closure (of important spawning or nursery grounds) and temporal closure (during important events such as spawning).
3. Number of fishing days (per gear, for semi industrial and industrial vessels).
4. Number of vessels– limited entry (per gear; for semi industrial and industrial vessels through licensing, permits, taxing, and royalties).
5. Total Allowable Catch (TAC) limits per Fishery Management Area.

Access Rights

In Maluku province, especially in the southeastern part, there are long-centuries standing traditional communal claim (ownership) by traditional communities over certain areas (territories) in coastal waters nearby their villages. This communal marine tenure is known as '*petuanan laut*'. Within this marine tenure areas, "outsiders" are excluded from access to marine resource, unless they have gained access permission to utilize marine resources from the local traditional leaders. All community members belonging to the community group that holds the ownership (property rights) are recognized as having use rights (known as *hak makan* = right to eat) over the resources. It means that all these community members have rights to utilize natural resources within the tenure areas in accordance with the community rules and norms applied in that particular society.

PERMEN No. 4 (2015) prohibits the catch of yellowfin tuna in the area, including pole-and-line and handline in area WPP 714 from October to December (3 months). Ibu Susi's public remarks during a visit to the region had aligned with the year-round closure of the whole 714 area, causing further pressure in Kendari particularly to follow her verbal comments. Some others have claimed that the Regulation exempts small-scale (although this is not stated anywhere in the Regulation).

In north Buru and north Seram, where the unit of assessment located, these traditional practices (marine tenure) do not exist. This means that both members of the local community and 'outsiders' have the 'same right' to access marine resources in the waters of north Buru and north Seram at anytime throughout the year subject to existing formal fisheries management regulations applied in those particular areas.

Small-scale fisheries (namely those who fish using fishing boat measured above 10 GT) in Indonesia are currently not regulated and are exempt from the existing fisheries management instruments. According to Fisheries Law No.31 year 2004, they are free from the requirement to have fishing licenses and fishing vessel licenses, free to conduct fishing operations in all Fisheries Management Areas and only obliged to register their vessel but do not pay a fee. Indonesian government perceived small-scale fishers as group of people who are poor, marginalized and vulnerable to social and economic shocks, and therefore need some level of social and economic support and protection. However, as stated previously whether the UoA is exempt from PERMEN No. 4 (2015) remains unclear.

Review and Audit of the Management Plan

As mentioned earlier, Indonesia has developed and formalized two important documents relating to tuna, skipjack tuna and neritic tuna fisheries management namely: (a) Fisheries management plan for tuna, skipjack tuna and neritic tuna, and (b) Framework for harvest strategies for tropical tuna in archipelagic waters of Indonesia. The fisheries management plan for tuna document is developed for 5 years timeline beginning from formal adoption of the document in 2015. The Directorate General of Capture Fisheries of MMAF will evaluate the plan after 5 years of its implementation against: (a) global development of tuna, skipjack tuna and neritic tuna fisheries, (b) latest relevant scientific findings/information, (c) changes of national policy and/or legislation, (d) changes of action plans, (e) achievement of results and problems encountered, and (f) other factors affecting tuna, skipjack tuna and neritic tuna fisheries.

The current interim tuna harvest strategy document is developed using the precautionary principles, as there are still a lot of technical information missing needed to improve the strategy. As stated in

the document, there will be some pilot testing implementations of the harvest strategy that will need to be refined and adapted, depending on the outcome of the pilot strategy implementation.

Monitoring, Control, Surveillance and Enforcement

At the regional level, monitoring, control and surveillance (MCS) consists of systems including the Minimum Harmonized Terms and Conditions of Access (MHTC), a regional VMS system, Regional Register of Foreign Fishing Vessels and a range of regional and international MCS cooperation programmes. Given that all the fishing activity occurs within the national level in FMA 715, the national and local (i.e. Fair Trade required) MCS mechanisms are more relevant.

Nationally, surveillance and enforcement of fisheries regulations are implemented by Directorate General of Surveillance for Marine and Fisheries Resources (*Direktorat Jenderal Pengawasan Sumberdaya Kelautan dan Perikanan (PSDKP)* of the MMAF. However, surveillance and enforcement are restricted to vessels above 30 GT that operate in the waters outside of 12 nautical miles. Provincial governments are responsible for MCS of fishing vessels less than or equal to 30 GT that operates in the waters from 0-12 nautical miles.

Often, PSDKP also conducts enforcement within the 0-12 nautical miles because of the provincial government's limited capacity to conduct these activities.

The fishing boat inspections are grouped under three categories namely: inspection of documents completeness (such as fishing license document, fishing logbooks) prior to departure, inspection of technical aspects of boat at fishing ports (e.g. type of gears used, VMS availability) and inspection of boats when fishing at sea. If all administrative and technical aspects are met, then PSDKP will issue fishing boat sea worthiness letter (Surat Laik Operasi /SLO) required to be brought along on board throughout fishing operation time at sea. This sea worthiness letter is required for all fishing boats when conducting fishing except for small-scale fishing boats. Also, fishing vessels are obligated to fill in fishing logbook (except for small-scale fishers) and install Fishing Vessel Monitoring System (except for fishing boats measured less than or equal to 30 GT). Violations of these may result in denial/refusal of the sea worthiness letter (Surat Laik Operasi /SLO).

The Law No.31/2004 amended through Law 45/2009 concerning Fisheries defines penalty schedules for violations ranging from fiscal penalties, suspension/cancellation of fishing licenses and full removal from the fishery. The penalties and fines, depending on the type of violations could raise up to USD 1.5 million and/or jail up to 10 years. However, there is no clear evidence of actions taken by the fisheries surveillance and enforcement agencies when confronted with violations involving small-scale fishers. Taking preventive actions (such as mediation) that could prevent further conflict among small-scale fishers involved often is a better choice rather than a strict stand to prosecute the case in court.

Besides PSDKP, other government agencies involved in marine surveillance and enforcement include Navy, Marine water Police, and coast guard (Indonesia Maritime Security Agency: Badan Keamanan Laut /Bakamla). The Indonesian government also promotes active engagements of communities in coastal/marine surveillance, through the community group surveillance (Kelompok Pengawas Masyarakat /Pokwasmas) often supported by NGOs and under a close supervision of government enforcement agencies such as police /marine water police agency. Within the FMA 715, PSDKP has its present (staff and large patrol boats) in Ambon (capital of Maluku province, 1 patrol boat), Bitung

(North Sulawesi province, 4 patrol boats) and Tual (southeastern part of Maluku province, 2 patrol boats).

The UoA is comprised of Fair Trade Fishermen Associations based in the Buru Regency (Indonesian: Kabupaten Buru) in the province of Maluku, Indonesia. As a Fair Trade certified fishery, there are many additional requirements that the fishermen employ that go beyond national or FMA requirements. For MCS, these include compliance on data collection, small-scale vessel registration, release of any by-catch of Endangered Threatened and Protected (ETP) species, safety at sea, and not engaging in child labor. As certified Fair Trade, these fisher associations are subject to annual audit on their compliance on matters mentioned earlier.

3.6 Harmonized Fishery Assessment

For this assessment, harmonization is required as follows:

Principle 1: Principle 1 scores for yellowfin in the WCPO have been agreed upon through a harmonization process that included aligning not only scores but also timelines for conditions.

Harmonisation is one of the MSC's main priorities in ensuring the credibility of the standard. In 2016 CAB representative and team members participated in a Harmonisation Workshop which resulted in agreed scores for Principle 1 for the yellowfin tuna and skipjack tuna stocks in the western Pacific managed by the Western and Central Pacific Fisheries Commission (WCPFC). The input provided by stakeholders for other fisheries in April of 2019 triggered harmonisation discussions amongst CABs to review the previously agreed-upon scores for these stocks. The harmonisation discussions did not result in a change to scores, however, they led CABs to seek further guidance on interpretation of the standard from MSC, particularly the potential for double scoring in PI 1.2.1 and PI 1.2.2. The MSC has not provided a response to the interpretation request submitted.

Table 15. Fisheries in the MSC System Considered for Harmonization for the WCPC Yellowfin Stock

	Fishery	Status	Principles for Harmonization	Conformity Assessment Body
1	American Samoa EEZ albacore and yellowfin longline	Certified	Principle 1	CU Pesca
2	Fiji albacore and yellowfin tuna longline	Certified	Principle 1	Acoura/LR
3	French Polynesia albacore and yellowfin longline	Certified	Principle 1	CU Pesca
4	MIFV RMI EEZ Longline Yellowfin and Bigeye Tuna	Certified	Principle 1	CU Pesca
5	Pan Pacific yellowfin, bigeye and albacore longline fishery	Under Assessment	Principle 1	CU Pesca
6	PNA Western and Central Pacific skipjack and yellowfin tuna	Certified	Principle 1	Acoura/LR
7	PNG Fishing Industry Association's purse seine Skipjack & Yellowfin Tuna Fishery	Under Assessment	Principle 1	SCS

8	PT Citraraja Ampat, Sorong pole and line skipjack and yellowfin tuna	Certified	Principle 1	DNV GL
9	Kiribati albacore, bigeye and yellowfin tuna longline fishery	Under Assessment	Principle 1	CU Pesca
11	Solomon Islands Longline Tuna Fishery	Under Assessment	Principle 1	SCS
12	Solomon Islands skipjack and yellowfin tuna	Certified	Principle 1	SCS
13	SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore & yellowfin longline	Under Assessment	Principle 1	CU Pesca
14	Tri Marine Western and Central Pacific skipjack and yellowfin tuna	Certified	Principle 1	CU Pesca
15	Tropical Pacific yellowfin and skipjack tuna free-school purse seine fishery	Certified	Principle 1	SCS
16	Walker Seafood Australia albacore, yellowfin tuna and swordfish	Certified	Principle 1	CU Pesca
17	WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine	Certified	Principle 1	CU Pesca

Principle 2: As Principle 2 evaluates fleet specific impacts, the scores may vary based on each fleet's catch behavior and interactions. There are no other fisheries with the same gear type operating in the same area that would require harmonization for this principle.

Principle 3: This fishery overlaps with the PT Citraraja Ampat, Sorong pole and line skipjack and yellowfin tuna fishery in some aspects of management as it relates to Principle 3. However, the fishery under assessment is a small scale fishery with a set of specific customary management frameworks in place via the organization of the Fishing Associations. Consequently, applicable management measures and requirements differ, and harmonization is not applicable.

3.7 Previous assessments

No previous MSC assessments were conducted for this fishery by a CAB.

3.8 Assessment Methodologies

This assessment was conducted by SCS Global Services, an accredited MSC certification body. The fishery was assessed using the MSC Certification Requirements Version 2.0, October 1st, 2014 utilizing process requirements found in FCR V2.0 and GCR V2.2., and the reporting template used in this report is V4.0. The default assessment tree was used without adjustments. The fishery will remain under V2.0 of the Certification Requirements for all performance requirements (PISGs) for the five-year duration of the certificate cycle, should the fishery be found capable of scoring at a level that confers certification.

3.9 Evaluation Processes and Techniques

3.9.1 Site Visits

The assessment team selected visit sites and interviewees based on information needed to assess management operations of the unit of assessment. The client group and other relevant stakeholders helped identify and contact fisheries management, research, compliance, and habitat protection personnel and agency representatives. Before the site visit and meetings were conducted, an audit plan was provided to the client and relevant stakeholders. The on-site meetings took place in Jakarta and Bali, Indonesia, between March 25th-28th, 2019. The assessment team visited agency offices including the Marine Affairs and Fisheries Office in the Maluku and PSDKP, and also visited the client office.

In addition to the meetings and attendees list above (Section 4.4.1), consultations have included large numbers of phone and email exchanges. A number of key organizations were contacted in advance of the fishery's formal entry into public full assessment by the team leader, by phone. SCS also worked with MSC outreach in advance of the fishery entering full assessment, to compile an extensive stakeholder list used for emailing announcements and assessment progress to stakeholders. This list contained over 300 individuals from approximately 200 organizations spanning the government, private, and non-profit sectors.

Prior to the onsite meeting, as well as following the onsite meeting, written stakeholder comments were received from: Parties of the Nauru Agreement (PNA). A summary of these concerns, and the original stakeholder comments can be found in Appendix 3.

Table 16 Audit Plan with location, participants, and session for the onsite visit that occurred from March 25th, 2019 to March 28th, 2019. All members of the assessment team attended the session unless otherwise indicated.

Day 1 - Monday March 25th, 2019				
Time	Relevant MSC (PI)	Session	Relevant Participants	Location
8:30am-9:30am	N/A	Opening Meeting SCS's opening meeting with client and introduction to the MSC assessment process Assessment team Responds to any questions from the client	<u>Anova Food USA:</u> Helen Packer, Bas Zaunbrecher <u>Harta Samudra:</u> Robert Tjoanda <u>MDPI:</u> Deirdre Duggan, Saut Tampubolon, Wildan <u>Auditors</u> Gabriela Sandy Halim	Jakarta Ruang Rapat Arwana I
		Break		
10:00 am 11:00 am	Principle 1	Stock Status Review: - Data Collection Strategy - Monitoring of stock abundance and fishery removals. - Integration of different data sources to stock assessment - Consideration for sources of error or uncertainty in the monitoring programs. - Quantifying catches of discards or illegal fishing	<u>SDI:</u> Trian Yunanda Syahril Abd. Raup (E-logbooks) <u>PUSRIKAN:</u> Fayakun Satria, Lilis Sadiyah, Wudianto Anung Widodo	Jakarta Ruang Rapat Arwana I
11:00 am 12:00 pm	Principle 1	Harvest Strategy Review: - Available tools to limit exploitation rate. - Availability of reference points - Availability of pre-agreed rules/actions used for determining a management action in response to changes in indicators of stock status with respect to defined 'trigger' reference points - Information and monitoring to support the harvest strategy - Applicable regulations on permitting/licensing of vessels	<u>Auditors</u> Gabriela Sandy Halim	
12:00 – 1:00 pm		Lunch		
1:00pm 2:30pm	Principle 3	Governance and Fishery Specific Management Review: - Fisheries Management Legal Framework - Details on the engagement at the level with the WCPFC	<u>SDI:</u> Trian Yunanda Syahril Abd. Raup (E-logbooks)	Jakarta Ruang Rapat Arwana I

		<ul style="list-style-type: none"> - Regulations for the yellowfin tuna fishery that are applicable to the vessels in the Unit of Assessment - Key areas of roles and responsibility within the fishery. - Dispute resolution mechanisms in place at all relevant jurisdictions. - Relevant regulations regarding FAD management - Management plan applicable to the vessels in the Unit of Assessment - Fishery Objectives: Management Plan - Consultation processes included in the management system. And are there recent relevant examples of these? - Relevant regulations regarding FAD management - Is a decision-making process for key fisheries decisions established and understood? - Where multiple jurisdictions are involved in management decisions, are the decision-making processes at each of these levels equally established and/or overlapping? 	<u>PUSRISKAN:</u> Fayakun Satria, Anung Widodo <u>Auditors</u> Gabriela Sandy Halim	
2:30pm 3:00 pm		Break		
3:00 pm 5:00 pm	Principle 3	Governance and Fishery Specific Management Review: <ul style="list-style-type: none"> - Fisheries Management Legal Framework - Details on the engagement at the level with the WCPFC - Regulations for the yellowfin tuna fishery that are applicable to the vessels in the Unit of Assessment 	<u>DKP Maluku:</u> Romelus Far-Far Mat Umarella <u>Other</u> Saut (MDPI) Robert (Harta Samudra) <u>Auditor</u> Halim	KKP meeting room #2
3:00 pm- 5:30pm	Principle 2	Ecosystem Impacts Meeting with Fisheries Research personnel and fishers to review: <ul style="list-style-type: none"> - Bycatch data - Interaction with ETP species - Marine Protected Areas, Habitat Considerations - Research on Ecosystem Impacts 	<u>PUSRISKAN:</u> Fayakun Satria, Anung Widodo <u>MDPI:</u> Wildan Deirdre <u>Auditors</u> Gabriela Sandy	Jakarta Ruang Rapat Arwana I

Day 2 - Tuesday March 26 th , 2019				
Time	Relevant MSC Performance Indicators (PI)/Clauses	Session	Relevant Participants	Location
8:30 am 9:30 am	Principle 3	Compliance and Enforcement Meeting with Enforcement agency personnel to review: - Compliance and Enforcement - Monitoring and Management Evaluation	<u>DG of Surveillance</u> Syafrizal <u>PSDKP - Ambon Surveillance Station</u> Harlym Raya Maharbhakti <u>Auditors</u> Gabriela Sandy Halim	Jakarta Ruang Rapat Arwana I
9:30-10:00		Break		
10:00 am 11:30 am		Meeting with any relevant stakeholders	<u>WWF Indonesia:</u> Achmad Mustofa <u>AP2HI:</u> Abdul Muis <u>SFP:</u> Dessy Anggraeni <u>Auditors</u> Gabriela Sandy Halim	Jakarta Ruang Rapat Arwana I

Day 3 - Wednesday March 27 th , 2019				
Time	Relevant MSC Performance Indicators (PI)/Clauses	Session	Relevant Participants	Location
8:00 am 9:00 am	N/A	Meeting with any relevant stakeholders	<u>IPNLE:</u> Jeremy Crawford (Call in on Skype) <u>Auditors</u> Gabriela Sandy Halim	Bali (MDPI office)
9:00 am 10:00 am	N/A	Meeting with any relevant stakeholders	<u>MDPI (Fair Trade):</u> Jaz <u>Auditors</u> Gabriela Sandy Halim	Bali (MDPI office)
10:00 am 11:30 pm	N/A	Team Meeting, compilation of findings (closed door)	<u>Auditors</u> Gabriela Sandy Halim	Bali (MDPI office)
11:30pm 12:30pm	N/A	Closing meeting Closing Meeting with the client – summary of preliminary findings, document requests, next steps.	<u>Anova Food USA:</u> Blane Olson, Helen Packer, Bas Zaunbrecher <u>Harta Samudra:</u> Robert Tjoanda <u>MDPI:</u> Deirdre Duggan, Saut Tampubolon, Wildan <u>Auditors</u> Gabriela Sandy Halim	Bali (Anova Office)

3.9.2 Evaluation Techniques

Documentation and Information Gathering

One of the most critical aspects of the MSC certification process is ensuring that the assessment team gets a complete and thorough grounding in all aspects of the fishery under evaluation. In even the smallest fishery, the assessment team typically needs documentation in all areas of the fishery from the status of stocks, to ecosystem impacts, through management processes and procedures.

Under the MSC program, it is the responsibility of the applying organizations or individuals to provide the information required proving the fishery or fisheries comply with the MSC standards. It is also the responsibility of the applicants to ensure that the assessment team has access to any and all scientists, managers, and fishers that the assessment team identifies as necessary to interview in its effort to properly understand the functions associated with the management of the fishery. Last, it is the responsibility of the assessment team to contact stakeholders that are known to be interested, or actively engaged in issues associated with fisheries in the same geographic location.

Information for the fishery assessment was gathered from stakeholder comments prior to the onsite visit (and after), and via phone conversations.

Scoring and Report Development Process

2. **Onsite Visit:** Scoring was initiated during the 3 day site visit and completed iteratively through phone calls, emails and skype teleconferences between March and August 2019.
3. **Additional Document Submission:** Following the onsite visit, the team compiled a list of requested documents for the client for submission within 2 weeks.
4. **Client Draft:** Rationales and associated background was developed by respectively assigned assessment team members, and then cross read by team members and SCS staff for production of the client draft report. Scoring was completed by consensus through this review process and team meetings by phone and email. The fishery received a total of conditions. The team finalized scoring and submitted the Client Draft in October 30th, 2019. Following initial receipt of the client draft of the report the client fishery worked with SCS to generate an acceptable client action plan.
5. **Peer Review:** Based on comments from peer reviewers the team modified content related to Principle 1, no scores were adjusted. The PCDR was submitted to MSC on November 21st, 2019 and subject to a 30-day stakeholder comment period that terminated on December 26th, 2019.
6. **PCDR:** The report was submitted to the MSC on November 21st, 2019 for Public Comment to the MSC website on November 26th, 2019 with the public comment period closing on December 26th, 2019. During the PCDR stakeholder comments were received from ISSF and a Technical Oversight from MSC. A variation request was submitted on February 2020, requesting to submit the PCDR for a second 30-day consultation period, after stakeholder

comments omitted in the first version of the PCDR were included. The second version of the PCDR was submitted to MSC on February 25th, 2020 for publication, with the consultation period closing on March 27th, 2020.

7. **Stakeholder Comment on PCDR:** Peer Review Comment Follow-up was received (See Appendix 2), and feedback from MSC via TO and comments from PNAO (See Appendix 3). Modifications were made to the Client Action Plan in response to stakeholder comments.

Scoring Methodology

The assessment team followed guidelines in MSC FCR v2.0 Section 7.10 “Scoring the fishery”. Scoring in the MSC system occurs via an Analytical Hierarchy Process and uses decision rules and weighted averages to produce Principle Level scores. There are 28 Performance Indicators (PIs), each with one or more Scoring Issues (SIs). Each of the scoring issues are considered at the 60, 80, and 100 scoring guidepost levels. The decision rule described in Table 17 determines the Performance Indicator score, which must always be in an increment of 5. If there are multiple ‘elements’⁴ under consideration (e.g. multiple main primary species), each element is scored individually for each relevant PI, then a single PI score is generated using the same set of decision rules described in Table 17.

Table 17. Decision Rule for Calculating Performance Indicator Scores based on Scoring Issues, and for Calculating Performance Indicator Scores in Cases of Multiple Scoring Elements. (Adapted from MSC FCRV2.0 Table 4)

Score	Combination of individual SIs at the PI level, and/or combining multiple element PI scores into a single PI score.
<60	Any scoring element/SI within a PI which fails to reach SG60 shall not be assigned a score as this is a pre-condition to certification.
60	All elements (as scored at the PI level) or SIs meet SG60 and only SG60.
65	All elements/SIs meet SG60; a few achieve higher performance, at or exceeding SG80, but most do not meet SG80.
70	All elements/SIs meet SG60; half* achieve higher performance, at or exceeding SG80, but some do not meet SG80 and require intervention action to make sure they get there.
75	All elements/SIs meet SG60; most achieve higher performance, at or exceeding SG80; only a few fail to achieve SG80 and require intervention action.
80	All elements/SIs meet SG80, and only SG80.
85	All elements/SIs meet SG80; a few achieve higher performance, but most do not meet SG100.
90	All elements/SIs meet SG80; half achieve higher performance at SG100, but some do not.
95	All elements/SIs meet SG80; most achieve higher performance at SG100, and only a few fail to achieve SG100.
100	All elements/SIs meet SG100.

**MSC FCRV2.0 uses the word ‘some’ instead of half. SCS considers ‘half’ a clearer description of the methodology utilized.*

⁴ MSC FCRV2.0 7.10.7: In Principle 1 or 2, the team shall score PIs comprised of differing scoring elements (species or habitats) that comprise part of a component affected by the UoA.

When calculating the Principal Indicator scores based on the results of the Scoring Issues (SI), SCS interprets the terms in the Table 2 as following:

- **Few:** Less than half. Ex: if there are a total of three SIs, one SI out of 3 is considered few.
- **Some:** Equal to half. Ex: if there are a total of four SIs, two SIs out of 4 is considered some.
- **Most:** More than half. Ex: if there are a total of three SIs, two SIs out of 3 is considered most.

The MSC provides a mandatory Excel template that facilitates the calculation of Principle level scores. Within the Excel template (and provided in Section 6.2) PIs are organized into components, where each PI within a component is weighted equally (**PI weight**), where the sum of PI weights per component equals 1. Multiple components make up each Principle, and components are likewise weighted (evenly, except in Principle 1) (**Component weight**), where the sum of component weights per Principle equals 1. The PI weight within the component multiplied by the component weight within the Principle provides a weight for each PI within the Principle (**PI weight * Component weight= PI Principle weight**). Each PI score is then multiplied by its weight within the Principle (**PI Principle weight**), and all weighted PI values are summed to generate a Principle level score, reported to the nearest one decimal place in accordance with MSC FCRV2.0 (7.10.3)

The decision rule for MSC certification is based on the resulting Principle level scores and is as follows:

- No PIs score below 60
- The aggregate score for each Principle, rounded to the nearest whole number, is 80 or above

4. Traceability

4.1 Eligibility Date

The target eligibility date is February 26th, 2019. This date the date of the second release of the Public Comment Draft Report. The traceability and segregation systems that are required to ensure the separation of any certified product from non-certified product are believed to be already in place for the client fleet.

At present, the fishery does not use the blue MSC ecolabel on product.

4.2 Traceability within the Fishery

The following traceability evaluation is for the UoC covering the Western and Central Pacific Yellowfin Tuna stock caught by members of the Fair Trade Fishing Associations that are part of the North Buru Committees, and that employ handline (hook and line) fishing gear targeting yellowfin tuna on either freely associated or on anchored FADs (aFAD), fishing within the Maluku province in area WPP 715. The fishers that belong to the Fair Trade Fishing Associations located in North Seram, are part of the UoA but not considered part of the UoC, and are classified as 'other eligible fishers', who may join the UoC at a later date. The traceability systems reviewed are only for the UoC.

There are nine Fishing Associations in the North Buru Committee landing fish in seven sites/villages (Table 18). The product is delivered to local buyer/suppliers who in turn sell it to one processing plants, Harta Samudra in Waplau, which is vertically integrated with the Harta Samudra plant in Ambon. The list of local buyers/suppliers that are included Table 18 are the existing buyers that are part of the UoA. The client would have to inform SCS of any changes in the buyers/suppliers.

Table 18. Fair Trade Associations in North Buru and landing sites that are part of the UoC. Please note that the North Seram FAs are not included here as they are not part of the UoC, only part of the UoA.

No	Name of Fishers Association	VILLAGE	SUPPLIER	FA CODE	FT fishermen (all have registered vessels)
1	Labuang Barat	Waplau	Komang	04G2	5
2	Tagalisa Tuna	Hatawano	Komang	04H2	8
3	Latamiha	Wailiang	Ayen/ismael	04C2	31
4	Waeplabung	Wailiang	Komang/hayon	04A2	12
5	Leisela Indah	Wamlana	Saldin	01B2	14
6	Wamlana Indah	Wamlana	Ayen	01C2	13
7	Setia Selalu	Waprea	Arman	04D2	14
8	Sinan Bersatu	Namsina	Komang/Chai	04K2	12
9	Wamrugut	Waepure	Nyong chan	01A2	14
North Buru TOTAL					123

Below we've listed the main stages of the supply chain within the fishery and the relevant tracking, tracing and segregation systems at each step: (note that these control systems are already in place for the buyers listed in Table 18)

Capture of product: Fishers that are part of the Fair Trade Fishing Associations (**Table 18**), catch yellowfin tuna employing handlines. Vessels in the UoA are operated by one or two fishers, with trips lasting one day.

On-board processing: In smaller boats (5 GT) fishers will loin the fish at sea, cutting the body in four pieces and putting each loin in a separate plastic bag. Loins are then stored in an icebox aboard the boat. Carcasses are also landed.

Product landing: The fish is unloaded in the small, informal ports at the location of the Fishing Associations (Table 18), where they are sold to local buyers/suppliers/middlemen. Effort is made to collect data from 20% of landing events in the port sampling sites. MDPI staff involved in the Port Sampling Program will record data on the trip including: number of fish caught, length of fish (or if processed, length of carcass and loin), name of the landing site, name of the local supplier/buyer, vessel name, name of captain, fishing area, total catch weight, gear employed, whether fishing was on free sets or AFAD, and catch volume. This information is then uploaded to the I-Fish database.

Product transport and basic processing: At landing fishers will sell their product to local buyers/suppliers, who aggregate product from several vessels, sometimes across several villages. Local suppliers will trim the fish and ice the loins to maintain quality and transport the loins to the processing plant in Waplau, on the island of Buru. There are nine local buyers purchasing from North Buru. The buyers/suppliers also purchase from fishers that are not part of the Fair Trade Associations and may also deliver product to processing companies that are not part of the Fair Trade Certification.

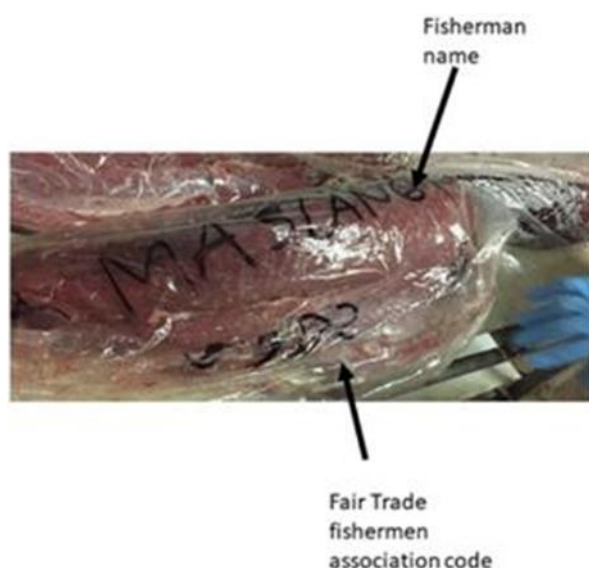


Figure 29. Example of Code on loin.

There are Fair Trade requirements (See Appendix 5) for fishers to have a traceability system in place. Note that not all Fair Trade Fishing Associations are part of the MSC UoC, however, FTUSA CFS

compliance criteria require records to be maintained down to the name of the individual fisher, and fishers can only be members of one Fishing Association.

The local buyer/supplier/middleman physically marks each individual loin by writing a code on the plastic bag holding the loin to identify that it is sourced from a Fair Trade Fishing Association, before transporting the product to the processing plant. The information on the plastic bag includes (Figure 29):

- 1) Fisherman name
- 2) Fishermen association code

Whether it is from FAD (rumpon) and which FMA

RUMPON: YA / TIDAK
WPP : 7151714

NOTE No.

DATE PURCHASE (=date of landing= date of catch)

Fisherman name

FA code

Weights of individual loins

Fisher signature

Supplier signature

Figure 30. Purchase receipt given by the suppliers to the fishermen

Tuna sourced from fishers that are not part of a Fair Trade association are not marked with the Fishing Association/Fair Trade code, and thus can be easily identified. Suppliers also are required to provide copies of purchase receipts (Fig. 30) to the fishers and are required to maintain records that include the signature of fishers, to verify the accuracy of the information recorded.

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Tanggal Pembelian: 90/9/17 Nama Nelayan: Hakim / Ulu-Luhung Nama Suplayer: KORPORASI

No	Nama Nelayan	Lain NFT	Lain FT	Kode FT	Keterangan
		Kg	Pcs		
1	Morinu	26.2	4	04H2	Hakim
2	Basir	27.2	4	04H2	Hakim
3	Lotar	64.0	8	04H2	Hakim
4	Basir	130.5	20	04H2	Hakim
5	Hakim	26.2	4	04H2	Hakim
6	Sarimin	73.2	8	04A2	Ulu-Luhung
7	Alimud		8	04A2	Ulu-Luhung
8					
9					
10					
TOTAL					

Fiserman name: [Signature]
Supplier signature: [Signature]

Figure 31. Delivery order form or Surat Jalan

Transfer of ownership from fishermen to local buyers/suppliers is considered the first point of sale. Suppliers then sell tuna to local processor(s). Along with the fisher name and FA code on bagged fish, supplier provides information to processor of their name, name of fisher, volume, and FA code. Sufficient to allow processor to confirm source of tuna as originating within the UoC (Figure 31).

Table 19. Traceability Factors within the Fishery:

Traceability Factor	Description of risk factor if present.
Potential for non-certified gear/s to be used within the fishery	There is no apparent risk. Handline fishermen only use handline gear to target tuna.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	Some vessels from North Buru very occasionally travel to WPP 714. Data obtained from the Spot Trace program, indicates that <1% of recordings took place in WPP 714, while data from the port sampling program, indicates that only 0.65% of the port sampled catch over a five-year time period was recorded as coming from in WPP 714. The assessment team considers these volumes to be negligible and to not present a significant risk factor at present. Currently, the main mitigation system in place is the reporting of the fishing areas in the fisher's logbook, which is then reviewed by the enumerators at landing. This, system is considered sufficient to identify when non-certified product originating from vessels fishing outside the area of the UoA. Future fishery assessment teams will continue to review the amount captured from 714 at future surveillance audits and if there is evidence that these amounts are becoming more than negligible, a more robust identification control mechanism may well be required then
Potential for vessels outside of the UoC or client group fishing the same stock	The stock is migratory and trans-boundary therefore it is shared across the Western and Central Pacific Ocean. Other gears and fleets fishing on the same stock include purse-seine, longline and pole-and-line located and flagged in various countries located/active in the Pacific Ocean tuna fisheries. There is an identification system in place to segregate and identify product caught by other vessels that fish in the same area and target the same stocks. The identification system is described in more detail in the following row. is not considered a risk factor,
Risks of mixing between certified and non-certified catch during	During landing and transport to the processing plant: there are fishermen who do not belong to the UoC who fish in the same area (North Buru and

storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	North Seram) and may also sell to suppliers that then sell to the processing plant. However, there is an identification system in place to differentiate fish caught by Fair Trade fishermen from non-Fair Trade fishermen (tagging and color coding) which addresses the risk of mixing. Suppliers also buy from Fair Trade Fishing Associations that are not part of the MSC UoA, this could present a risk, however, suppliers are required to provide information on the Fishing Association, and even the individual fishers, from which they sourced their product when selling it to the processing plant, thus mitigating the risk of mixing between certified and non-certified product.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	There is minimal processing at sea, however, this does not present any apparent risk, as all the yellowfin fish caught by the fishers in the Fishing Associations that are part of the UoA is eligible for certification. There is some secondary minimal processing by the local buyer/supplier, after the product is landed. Here there is some risk of mixing of loins from fishers that do not belong to the UoA. However, the measures in place require that buyers/suppliers keep records of the volumes of fish bought from fishers that are part of the UoA/Fair Trade Associations and that these are segregated and marked.
Risks of mixing between certified and non-certified catch during transshipment	Transshipment does not occur.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	None identified.

4.3 Eligibility to Enter Further Chains of Custody

The team has determined that the product originating from the UoC will be eligible to enter further certified chains of custody and be sold as MSC certified and carry the MSC ecolabel.

The point at which the fishery certificate ends, and chain of custody begins is at supplier's sale/delivery of yellowfin tuna to processor.

Typically, in a fishery like this, where there is risk (albeit small) of certified and non-certified catch landed by fishermen and traded by suppliers, and there is no universal, regulatory mechanism which includes records that demonstrate provenance, then CoC would begin at landing. The SCS assessment team has concluded that the existing Fair Trade systems in place do act as an effective proxy for regulatory measures and are sufficient to ensure that identification and segregation controls are in place up through delivery to processing plant. This determination allows suppliers to be included under the fishery certificate rather than requiring CoC for their activities.

Processor shall verify that it is purchasing yellowfin tuna from a named supplier in the client group (Table 19). While supplier is included under fishery certificate, they are still required to pass forward to processor the following information;

- Supplier name,
- name of fisher,
- volume/weight,
- fishing village, and
- FA code

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

There are no IPI stocks.

5. Evaluation Results

5.1 Principle Level Scores

Table 20. Final Principle Scores

Final Principle Scores	
Principle	Score
Principle 1 – Target Species	80.8
Principle 2 – Ecosystem	86.0
Principle 3 – Management System	82.1

5.3 Summary of PI Level Scores

Table 21. Summary of Performance Indicator Scores and Associated Weights Used to Calculate Principle Scores.

Principle	Component	Weight	Performance Indicator (PI)		Score
One	Outcome	0.333	1.1.1	Stock status	90
			1.1.2	Stock rebuilding	
	Management	0.667	1.2.1	Harvest strategy	70
			1.2.2	Harvest control rules & tools	60
			1.2.3	Information & monitoring	80
			1.2.4	Assessment of stock status	95
Two	Primary species	0.200	2.1.1	Outcome	100
			2.1.2	Management strategy	80
			2.1.3	Information/Monitoring	95
	Secondary species	0.200	2.2.1	Outcome	90
			2.2.2	Management strategy	80
			2.2.3	Information/Monitoring	95
	ETP species	0.200	2.3.1	Outcome	80
			2.3.2	Management strategy	90
			2.3.3	Information strategy	80
	Habitats	0.200	2.4.1	Outcome	95
			2.4.2	Management strategy	75
			2.4.3	Information	70
	Ecosystem	0.200	2.5.1	Outcome	90
			2.5.2	Management	85
			2.5.3	Information	85
Three	Governance and policy	0.500	3.1.1	Legal &/or customary framework	75
			3.1.2	Consultation, roles & responsibilities	95
			3.1.3	Long term objectives	90
	Fishery specific management system	0.500	3.2.1	Fishery specific objectives	70
			3.2.2	Decision making processes	80
			3.2.3	Compliance & enforcement	80
			3.2.4	Monitoring & management performance evaluation	80

5.4 Summary of Conditions

Table 22. Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1-1	By the third surveillance audit, demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points	PI 1.2.1	NA
1-2	SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.	PI 1.2.2	NA
2-1	Condition 2-1 (PI 2.4.2): By the year three surveillance the fishery shall provide some quantitative evidence that the measures/partial strategy [for AFADs] is being implemented successfully.	PI 2.4.2	NA
2-2	Condition 2-2 (PI 2.4.3): By year four the client shall provide evidence that: Information [for AFADs] is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. Adequate information [for AFADs] continues to be collected to detect any increase in risk to the main habitats.	PI 2.4.3.	NA
3-1	Condition 3-1: By year four the client shall present evidence that there is an effective national legal [and/or customary framework] system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	PI 3.1.1	NA
3-2	By year four the client shall present evidence that short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	PI 3.2.1	NA

With the information available, the fishery meets the minimum requirements for being awarded certification which includes meeting the SG60 for all Performance Indicators and an average score of 80 or greater for all three Principle scores. The team discussed the merits and shortfalls of the fishery and by consensus recommended certification for the fishery.

In accordance with MSC Certification Requirements, the findings will be made open to objection by interested parties for a period of 15 working days from publication of the Final Report with the Certification Determination. Please see the Final Report Stakeholder Announcement on the MSC website for the announcement detailing the objection period and dates.

With the information available, fishery meets the minimum requirements for being awarded certification which includes meeting the SG60 for all Performance Indicators and an average score of 80 or greater for all three Principle scores. The team discussed the merits and shortfalls of the fishery and by consensus recommended certification for the fishery.

In accordance with MSC Certification Requirements, the report was made open to objection by interested parties for a period of 15 working days from publication of the Final Report with the positive certification determination. No objections were received. The SCS Certification Board reviewed the report, Performance Indicator rationales, peer reviews and stakeholder comments and agreed with the Assessment Team's recommendation to re-certify the fishery. The certificate will be awarded after the Public Certification Report is posted to the MSC website.

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6. Appendices

6.1 Appendix 1. Scoring and Rationales

6.1.1 Performance Indicator Scores and Rationale

Principle 1

Evaluation Table for PI 1.1.1 Yellowfin tuna Stock – Stock status

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue	SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment		
Guided post	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
Met?	Y	Y	Y
Justification	<p>The diagnostic case from the 2017 stock assessment (Tremblayer-Boyer et al. 2017) estimated that the spawning biomass was at 40% of unfished levels in 2015 and was well above the WCPFC limit reference point, 20%SB_{F=0.5}. Recruitment was also estimated to have been stable since the mid-1960s (Figure 12).</p> <p>In the analysis of model structural uncertainty in the assessment (Tremblayer-Boyer et al. 2017), using a crosswise grid of 72 alternative model formulations, only two runs (<5%) fell below the limit reference point.</p> <p>Previous modelling had also indicated that a biomass of this level for yellowfin tuna had a greater than 95% likelihood of being above the limit reference point of 20% of unfished levels (SPC-OFP 2014). A stock above this limit reference point is considered to be above the point where recruitment would be impaired.</p> <p>Furthermore, Pilling et al. (2014) used stochastic projections under status quo conditions to estimate that it was exceptionally unlikely (<1%) that the yellowfin stock would fall below the limit reference point level or that fishing mortality would increase above the F_{MSY} level by 2032, and dependent upon the future recruitment assumption, it was exceptionally unlikely (<1%; long-term recruitment deviate assumption) or very unlikely (<10%; recent recruitment assumption) to fall below B_{MSY}.</p> <p>There is, therefore, a high degree of certainty that the stock is above the point where recruitment would be impaired, which meets the requirements of scoring issue a at the SG 60, SG 80 and SG 100 levels.</p>		
b	Stock status in relation to achievement of MSY		
Guided post		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
Met?		Y	N
Justification	<p>There is no explicit target reference point for yellowfin tuna but there is considered to be an implicit target of B_{MSY} (supported by CMM 2016-01).</p> <p>The grid medians for both SB_{recent}/SB_{MSY} and SB_{latest}/SB_{MSY} in the most recent assessment were 1.42 (Tremblayer-Boyer et al. 2017) which is well above this (default)</p>		

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
		<p>target reference point and, given the estimated stock trajectory, would have done so over the whole period modelled.</p> <p>This meets the requirements of scoring issue b at the SG 80 level.</p> <p>Following SA2.2.1.3 a high degree of certainty means greater than or equal to the 95th percentile of a distribution. This assessment (unlike the previous one) does not provide 95% confidence intervals for the ratios SB_{recent}/SB_{MSY} and SB_{latest}/SB_{MSY} but across the grid of uncertainties only two runs (<5%) fell below the chance of the stock being below B_{MSY} over recent years. This finding might suggest that that yellowfin tuna now meets the requirements of scoring issue b at the SG 100 level.</p> <p>Nevertheless, previous assessment scores for Yellowfin tuna, based on the 2014 stock assessment (Rice et al. 2014), were that the SG 100 level was not met because the lower 95% confidence intervals for B/B_{MSY} was less than 1 and the upper 95% confidence interval for F/F_{MSY} was greater than 1. The 2017 assessment was slightly more optimistic but as the stock has recently been estimated to have been below that threshold the SG 100 requirement that stock be above MSY over recent years is still not met.</p>		
References		Pilling et al. 2014, Rice et al. 2014, Tremblayer-Boyer et al. 2017		
Stock Status relative to Reference Points				
	Type of reference point	Value of reference point	Current stock status relative to reference point	
Reference point used in scoring stock relative to PRI (SIa)	Level of spawning biomass in the absence of fishing ($SB_{F=0}$) LRP: 20% $SB_{F=0}$	$SB_{F=0} = 2,592,702$ t $0.2X SB_{F=0} = 518,540$ t	$SB_{latest}/SB_{F=0} = 0.46 > LRP$ $SB_{recent}/SB_{F=0} = 0.42 > LRP$	
Reference point used in scoring stock relative to MSY (SIb)	Level of spawning biomass relative to MSY (SB_{MSY})	$SB_{MSY}=750,100$ t	$SB_{latest}/SB_{MSY} = 1.58$ $SB_{recent}/SB_{MSY} = 1.46$	
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant): Click here to enter text.				90

Evaluation Table for PI 1.1.2 Yellowfin tuna – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guidepost	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.
	Met?	Not scored		Not scored
	Justification	Not scored- Stock does not require rebuilding.		
b	Rebuilding evaluation			
	Guidepost	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	Not scored	Not scored	Not scored
	Justification	Not scored- Stock does not require rebuilding.		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				N/A

Evaluation Table for PI 1.2.1 Yellowfin tuna – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guided post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG 80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG 80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG 80.
	Met?	Y	N	Not scored
	Justification	<p>Agreed harmonized score: 60</p> <p>MSC defines a harvest strategy as ‘the combination of monitoring, stock assessment, harvest control rules and management actions, which may include an MP or an MP (implicit) and be tested by MSE’ (MSC – MSCI Vocabulary v1.1).</p> <p>The harvest strategy for WCP0 yellowfin has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. There are, however, no formal harvest control rules. This conclusion is consistent with the results of extensive harmonisation discussions among CABs as described in detail in Section 4.1.</p> <p>The range of measures applied to the sectors that fish for yellowfin tuna are expected to achieve stock management objectives meeting the requirements of the SG 60 level.</p> <p>Nevertheless, the general stock decline for yellowfin (albeit with a recent increase in stock size), the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, reduces the level of confidence that the harvest strategy would be responsive to the state of the stock or that the elements will work together when required to do so to achieve the management objectives.</p> <p>It is also not clear that coherent management actions are applied throughout the range of the stock, particularly in Indonesia and the Philippines.</p> <p>Overall this prevents the conclusion that the strategy is designed to achieve stock management objectives.</p> <p>Yellowfin tuna is therefore considered to meet the SG 60 level of this scoring issue but not the SG 80 or SG 100 levels.</p>		
b	Harvest strategy evaluation			
	Guided post	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	Not scored
	Justification	Yellowfin tuna have been estimated to be above default target levels and the status quo stock projections undertaken indicate that “it was exceptionally unlikely (<1%) that the yellowfin stock would fall below the limit reference point level or that fishing mortality would increase above the F_{MSY} level by 2032” (Pilling et al. 2014a).		

PI 1.2.1	There is a robust and precautionary harvest strategy in place			
		Furthermore, the most recent stock assessment (Tremblayer-Boyer et al. 2017) indicates that fishing mortality for yellowfin tuna has always been below the F_{MSY} level and that the stock has not declined below the default target of B_{MSY} . This constitutes good evidence that the harvest strategy is meeting its objectives. Therefore yellowfin tuna is considered to meet both the SG 60 and SG 80 levels of this scoring issue		
c	Harvest strategy monitoring			
	Guided post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Monitoring in place for the longline fishery for yellowfin tuna include mandatory logbooks with records of catch and effort for each fishing operation, a VMS, tagging data, biological studies and port inspections. There is, however, only very limited observer coverage of fishing operations so there are relatively few data on the discarded component of the catch, but few yellowfin would be expected to be discarded. The data that are collected do support a sophisticated stock assessment process that provides robust estimates of stock status that is sufficient to determine whether the harvest strategy is working. This meets the SG 60 requirements.		
d	Harvest strategy review			
	Guided post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Not scored
	Justification	Not scored as not all SG 80 requirements are met.		
e	Shark finning			
	Guided post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant)	Not relevant	Not relevant
	Justification	Sharks are not a target species (or even a main retained species) of this fishery. This PI is therefore not relevant.		
f	Review of alternative measures			
	Guided post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a biannual review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	CMM 2015-01 (and its predecessors) requires that “To create a disincentive to the capture of small fish and to encourage the development of technologies and fishing strategies designed to avoid the capture of small tunas and other fish, CCMs shall require their purse seine vessels fishing in EEZs and on the high seas within the area bounded by 20°N and 20°S to retain on board and then land or transship at port all bigeye, skipjack, yellowfin tuna.” Exceptions to this requirement are possible where the fish are unfit for human consumption for reasons other than size or when serious malfunction of equipment occurs. Reporting of discards is done via vessel logbooks and Observer Programs.		

PI 1.2.1	There is a robust and precautionary harvest strategy in place	
		<p>Compliance with CMM 2015-01 (and its predecessors) is verified by observers with any violations (such as illegal discards) being reported to the WCPFC via the Observer authority. Reported discards for the UoA represented 0.9% of the total catch for 2014 and 2015. Discarded catches of yellowfin across the whole fleet are also estimated to be minor and are ignored in the stock assessment (Tremblayer-Boyer et al. 2017).</p> <p>The rules in place indicate that this scoring issue is not relevant to the UoA.</p>
References	Pilling et al. 2014, Tremblayer-Boyer et al. 2017	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
<p>CONDITION NUMBER: 1-1</p> <p>By the fourth surveillance audit, demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points</p> <p>Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.</p>		70

Evaluation Table for PI 1.2.2 Yellowfin tuna – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guided post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.
	Met?	Y	N	Not scored
	Justification	<p>A generally understood HCR is taken here to mean one that is not well defined, as otherwise there is no distinction between requirements at the SG 60 and SG 80 levels. This PI is also assessed taking account the guidance for scoring ‘available’ HCRs at SG 60 containing in SA2.5.2, SA2.5.3 and SA2.5.5.</p> <p>The first option for scoring ‘available’ HCRs is intended to cover the situation where even generally understood HCRs are not yet clearly in place for a fishery. For WCPFC fisheries, including yellowfin tuna, there are measures for controlling fishing effort through closures, limits on fishing capacity and, for vessels involved, through limits on fishing days under the VDS. There are expectations about responses and examples of how actions have been implemented for species such as bigeye tuna, but there is no clear linkage or explicit process that links changes in stock status to emergent associated management actions. Therefore we do not consider that there are even generally understood HCRs <i>that are also “in place”</i>; and the options for ‘available’ HCRs are evaluated below.</p> <p>The second question to address, is whether there are HCRs that meet the requirements for being considered as ‘available’.</p> <p>The guidance in SA2.5.2a indicates that teams shall accept ‘available’ HCRs in cases where, “...Stock biomass has not previously been reduced below the MSY level or has been maintained at that level for a recent period of time that is at least longer than 2 generation times of the species, and is not predicted to be reduced below B_{MSY} within the next 5 years”.</p> <p>As noted at PI 1.1.1 scoring issue (b), the 2017 assessment provides probabilistic estimates of parameters of interest, and has been extensively explored using a crosswise grid of sensitivity tests (Tremblayer-Boyer et al. 2017). The stock assessment estimates spawning biomass for yellowfin tuna, SB, to be at 46% of unfished levels ($SB_{F=0}$) and 1.58 times SB_{MSY}. The stock is estimated to have never been reduced to SB_{MSY} and has hence been above SB_{MSY} in all years.</p> <p>According to WCPFC (2014a), paragraph 37, “Future status under <i>status quo</i> projections (assuming 2012 conditions) depends upon assumptions on future recruitment. When spawner-recruitment relationship conditions are assumed, spawning biomass is predicted to increase and the stock is exceptionally unlikely (0%) to become overfished ($SB_{2032} < 0.2SB_{F=0}$) or to fall below SB_{MSY}, nor to become subject to overfishing ($F > F_{MSY}$). If recent (2002-2011) actual recruitments are assumed, spawning biomass will remain relatively constant, and the stock is exceptionally unlikely (0%) to become overfished or to become subject to overfishing, and it was very unlikely (2%) that the spawning biomass would fall below SB_{MSY}.”</p> <p>An estimate of the generation time of yellowfin tuna using the MSC definition (Box GSA4 in CR v2.0) is not available but SPC have produced an estimate of 5 years by a different</p>		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
		<p>method (Berger et al. 2013) and by any method of estimation 2 generation times will be much less than the 20 years used in the projections mentioned above.</p> <p>The CR v2.0 SA2.5.2a condition is therefore met and HCRs are therefore considered to be 'available'.</p> <p>The third question to address is whether these available HCRs meet the requirement for reducing the exploitation rate as the LRP is approached. The guidance in SA2.5.3 requires that "Teams shall recognise 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached' only in cases where, HCRs are effectively used in some other UoAs, that are under the control of the same management body and of a similar size and scale as the UoA; or An agreement or framework in place that requires the management body (<i>in this case WCPFC</i>) to adopt HCRs before the stock declines below B_{msy}".</p> <p>There are CMMs that are in place for a range of tuna species within the WCPFC (including yellowfin) that contain a range of management measures that are designed to constrain fishing mortality to acceptable levels. Nevertheless, none are considered to be more highly developed than the measures currently in place for yellowfin tuna and therefore they do not offer an example of effectiveness in reducing exploitation as the PRI is approached.</p> <p>Option a. is therefore not considered to be met.</p> <p>Option b. examines plans for the introduction of an effective HCR. WCPFC Conservation and Management Measure CMM 2014-06 (WCPFC, 2014) sets out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and decision rules or ("harvest control rules"), with a clear intention that harvest control rules, tested using simulation approaches, will be part of the implemented harvest strategies. The Commission agreed to adopt a work plan at its 2015 annual meeting, which was revised in 2016 and 2017, with application to skipjack, bigeye, yellowfin, Pacific bluefin, and South and North Pacific albacore tunas. In fact, work towards establishing reference points and harvest control rules was progressed through the Management Objectives Workshop (MOW) process.</p> <p>We note that there is no specific requirement in CMM 2014-06 linking implementation of the HCRs to stock projections. Nevertheless, given that yellowfin tuna are projected to remain well above B_{MSY} for many years and that the process CMM 2014-06 describes has already been initiated – considered in place - we have considered that the requirements of Option b. SA2.5.3b are met. The requirements of the SG 60 level are therefore considered to be met.</p> <p>In summary, generally understood HCRs are not in place. Yellowfin is a stock that has not previously been reduced below MSY, which has always been maintained well above the TRP and has an improbably low likelihood of becoming overfished or to experience overfishing. Therefore this stock meets the requirements to be considered against "availability" requirements. In the WCPF, HCRs are not yet effectively used in any other WCPFC-managed UoAs. However, there is a framework that is in place, expected to develop further that will require the WCPFC to take action on HCRs before there is any detectable, projected risk that yellowfin stock status could decline below B_{MSY}.</p>		
b	HCRs robustness to uncertainty			
	Guided post		<p>The HCRs are likely to be robust to the main uncertainties.</p>	<p>The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.</p>
	Met?		N	Not scored
	Justification	Agreed harmonized score: SG 80 is not met.		

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place			
		The 'available' harvest control rules are not sufficiently articulated to allow an evaluation of the extent to which they are robust to the main uncertainties. When well-defined HCRs are developed they can be evaluated as to whether this is the case. The SG80 requirements are not considered to be met.		
c	HCRs evaluation			
	Guided post	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	Y	N	Not scored
	Justification	As noted under scoring issue a above, following SA2.5.3b, we have recognised 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached'. SA2.5.5b, which requires that teams shall include in their rationale a description of the formal agreement or legal framework that the management body has defined, and the indicators and trigger levels that will require the development of HCRs. The agreement is contained in CMM 2014-06 whose objective is "To agree that the Commission shall develop and implement a harvest strategy approach for each of the key fisheries or stocks under the purview of the Commission according to the process set out in this conservation and management measure." This CMM contains general principles (including a description of a harvest strategy) and principles and elements of the proposed harvest strategies (which are consistent with the MSC definitions). The definitions include target and limit reference points and decision rules (or "harvest control rules"), with a clear intention that harvest control rules, tested using simulation approaches, will be part of the implemented harvest strategies. The specified timelines are that: <i>"The Commission shall agree a workplan and indicative timeframes to adopt or refine harvest strategies for skipjack, bigeye, yellowfin, South Pacific albacore, Pacific bluefin and northern albacore tuna by no later than the twelfth meeting of the Commission in 2015. This workplan will be subject to review in 2017."</i> Work towards establishing reference points and harvest control rules was initiated before this CMM was passed through the Management Objectives Workshop process and requires no additional trigger for their development. The requirements of SA2.5.5b are therefore considered to be met. Furthermore, SA2.5.6 requires that, in scoring issue (c) for "evidence" teams shall include consideration of the current levels of exploitation in the UoA, such as measured by the fishing mortality rate or harvest rate, where available. The most recent stock assessment for yellowfin tuna (Tremblay-Boyer et al. 2017) and the earlier <i>status quo</i> projections (Pilling et al. 2014a) provide some evidence that the tools in use (the VDS and WCPFC effort limits) are effective in controlling exploitation of yellowfin tuna and achieving the exploitation levels that are required. As noted above, these indicate that fishing mortality for yellowfin tuna has always been below the F_{MSY} level, that the stock has not declined below B_{MSY} and that it is exceptionally unlikely (<1%) that fishing mortality will increase above the F_{MSY} level by 2032. The current levels of exploitation are therefore acceptable and the requirements of SA2.5.6 are met. This meets the requirements of the SG 60 level. The HCRs are only regarded as being 'available' in scoring issue (a) and not 'in place', so we have considered that it is not possible to score more than 60 for issue (c) since the SG 80 refers to the tools 'in use' in the fishery and not the tools 'in use or available' . In any case, not all available evidence indicates that current exploitation is adequately contained by the existing main tools (VDS and WCPFC effort limits) as catches of yellowfin (although slightly lower in 2015) are still generally increasing and, although fishing mortality remains		

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place	
		below the F_{MSY} level, it has increased continuously since the beginning of industrial tuna fishing. So the effectiveness of the CMM 2014-01 for restricting fishing mortality to previous levels is not well demonstrated. The requirements of the SG 80 level are therefore not clearly met.
References	Berger et al. 2015, Tremblayer-Boyer et al. 2017, Pilling et al. 2014a, WCPFC (2014a), WCPFC 2014 (CMM for HCRs)	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
<p>CONDITION NUMBER : 1-2</p> <p>SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.</p> <p>SI b) By the fourth surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties.</p> <p>SI c) By the fourth surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p> <p>Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.</p>		60

Evaluation Table for PI 1.2.3 Yellowfin – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guided post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	N
	Justification	<p>Stock structure - the WCPO yellowfin fishery is assessed and managed as a single stock. However, suggestive evidence for population structure is emerging for the tropical tunas (e.g. Kolody et al., 2013).</p> <p>Williams (2013) identified data gaps (for all key species, rather than yellowfin in particular) as follows:</p> <ul style="list-style-type: none"> • Vietnamese domestic fleet: no annual catch data provided (but this now appears to be provided – see Davies et al. 2014); • Philippines and Indonesian fleets: catch data not broken down by gear type; operation (logsheets) data not provided; • Chinese Taipei fleet: no operational data, aggregated effort data or size data prior to 2004; likewise for the Japanese coastal fleet up to the present data; likewise for the Japanese pole and line fleet prior to 1972; • Several countries may have historical data which has not been identified • Historical estimates of coverage rates from logsheets and port sampling are missing in some cases; • Some key (distant water) fleets provide only aggregated rather than operation level data – this is identified as a constraint on stock assessments, and on the use of more details spatial models such as SEAPOPDYM. <p>Overall, given the size and complexity of the fishery, the range and comprehensiveness of the data available is impressive and improving all the time. Nonetheless, these data gaps do constrain stock assessments – as does bias and lack of precision in some of the data sets, particularly historical data. Perhaps more importantly, the stock assessment continues to rely on commercial CPUE as an index of stock abundance, and although these data are carefully analysed and standardised as far as possible, there are no fishery-independent data sets with which they can be compared, while issues such as spatial and temporal changes in catchability remain problematic. On this basis, the team concluded that SG 80 is met, but SG 100 is not met.</p>		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
b	Monitoring			
	Guidpost	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	Y	N
	Justification	Stock abundance and removals are monitored at a level of accuracy and coverage that is sufficient to support the harvest control measures in place. There is not, however, a high degree of certainty about all the information required. Operational level data are not provided by some WCPFC members (although some who do not provide it to WCPFC make their country's data available for assessment purposes). The issues raised above mean that we do not consider there to be a high degree of certainty about stock abundance or the robustness of the assessment to this uncertainty. . This meets the requirements for the SG 60 and SG 80 levels but not the SG 100 level.		
c	Comprehensiveness of information			
	Guidpost		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	This scoring issue was the subject of particular attention in the original skipjack tuna assessment (Banks et al. 2011) and in particular whether there was good information on the level of fishery removals from some countries. The conclusion was that “despite a number of deficiencies in compilation and analysis from the Indonesia and Philippines, this reaches SG 80”. Since that assessment there has been additional work to improve the level of data available (noted in the Surveillance Reports for skipjack tuna) and we conclude that the requirements of the SG 80 level are also met for yellowfin tuna.		
References		Banks et al. 2011, Tremblayer-Boyer et al. 2017		
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				N/A
Condition				

Evaluation Table for PI 1.2.4 Yellowfin tuna – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guidepost		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		Y	Y
	Justification	The most recent assessment applied to yellowfin tuna (Tremblayer-Boyer et al. 2017), like other recent assessments, is an integrated, model-based assessment that is undertaken by an experienced and internationally recognised stock assessment program at the SPC. The assessment combines a wide range of datasets and incorporates the major population dynamics of yellowfin (growth, natural mortality, movement, maturity and fecundity, recruitment) and the fishery dynamics (selectivity and catchability of the different fishing fleets and the spatial and temporal distribution of fishing effort). SPC have considerable experience in the development and application of this modelling approach. It thus takes into account major features relevant to the biology and the nature of the fishery. It therefore meets the requirements of the SG 80 and SG 100 levels of this scoring issue		
b	Assessment approach			
	Guidepost	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	Y	Y	
	Justification	The assessment reports provide a wide range of estimates of stock status relative to indicators of interest to management including both the generic target reference point (SB_{MSY}) and the limit ($20\%SB_{F=0}$) reference point that has been agreed for yellowfin tuna. The assessment provides estimates of latest (2015) and recent (2011-2014) spawning potential relative to the equilibrium unexploited spawning potential (SB_0), relative to the average spawning potential predicted to occur in the absence of fishing for the period 2005–2014 ($SB_{F=0}$), and relative to the spawning potential that will produce the maximum sustainable yield (SB_{MSY}). It also provides estimates of the average fishing mortality-at-age for a recent period (2011–2014) relative to F_{MSY} (F_{recent}/F_{MSY}). This therefore meets the requirements of the SG 60 and SG 80 levels		
c	Uncertainty in the assessment			
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	Y

PI 1.2.4		There is an adequate assessment of the stock status		
	Justification	<p>The assessment of yellowfin tuna has provided explicit commentary on the major sources of uncertainty, has assessed the sensitivity of the assessment to these uncertainties, and has evaluated current and future stock status relative to these in a probabilistic way.</p> <p>More than a hundred runs were undertaken in conducting the 2017 yellowfin assessment, but in terms of presenting information on the bounds of plausible model sensitivity the report focused on a small set of uncertainty axes. These axes were used for “one-off” changes from the diagnostic case model and several of these sensitivity models were used in the structural sensitivity analyses. Sensitivities explored included changes to model settings for steepness, the tag mixing period, the relative weighting of length and age data, an alternative approach to estimating the effective sample size of frequency samples, the weighting of the tagging data in the model, annual versus quarterly estimates of recruitment deviations, estimating versus fixing natural mortality, alternative CPUE indices, inclusion of additional tagging data, alternative treatments of reporting rates of tag returns, and use of a different regional structure.</p> <p>Structural uncertainty in the assessment model was evaluated by running a ‘grid’ of models to explore the interactions among selected ‘axes’ of uncertainty. The grid contained all combinations of two or more parameter settings or assumptions for each uncertainty axis. The axes were generally selected from those factors explored in the one-off sensitivities with the aim of providing an approximate understanding of variability in model estimates due to assumptions in model structure not accounted for by statistical uncertainty estimated in a single model run, or over a set of one-off sensitivities.</p> <p>This meets the requirements of the SG 60, SG 80 and SG 100 levels of this scoring issue</p>		
d	Evaluation of assessment			
	Guided post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			Y
	Justification	<p>There is an ongoing program of review of assessment assumptions and approaches by the staff in the SPC-OFP. Alternative hypotheses are continually being explored (within funding and time constraints) and assessments are updated and modified as required.</p> <p>Model structure has been updated to reflect the availability of new data or new interpretations of existing data and a suite of sensitivity analyses have been undertaken to explore the impact of options such as changing assumptions for fixed parameters or different treatments of the data. Furthermore, retrospective analyses have been undertaken to explore any systematic biases in the model and the results used to adjust the reference case.</p> <p>The assessment for yellowfin tuna has been shown to be robust and therefore meets the requirements of this scoring issue.</p> <p>We note that there has been no simulation testing of the model but such testing is not necessary to meet the requirements.</p>		
e	Peer review of assessment			
	Guided post		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.

PI 1.2.4		There is an adequate assessment of the stock status		
	Met?		Y	N
	Justification	<p>Internal reviews are undertaken by SPC and there has been an external review of the assessment of Bigeye tuna (Ianelli et al. 2012) which provided recommendations that were also applicable to other similar assessments such as for yellowfin tuna. Many of those recommendations have been addressed with the latest yellowfin assessment.</p> <p>There have also been external reviews commissioned of different aspects of the data analyses that feed into the assessments.</p> <p>This is also a level of review provided by submission to the scientific committee of the WCPFC, at which experienced scientific staff from several countries attend, but we consider this to be internal to WCPFC processes. .</p> <p>We note, as discussed in the background, there have been two earlier reviews of the previous yellowfin tuna assessment (Haddon 2010 and Maguire 2010) which were commissioned by the USA through the Center for Independent Experts (CIE). A response to these reviews was provided by SPC to SC7 (SPC-OFP 2011) but there was no reference to the findings of this review or the response in the subsequent stock assessment (Davies et al. 2014). Given the manner of its initiation (it was not commissioned by the WCPFC or SPC) and the lack of a clear response in the subsequent assessment we are inclined to take a conservative approach in not considering scoring the last scoring issue to have been met at the SG 100 level. An effective external review should lead to an acknowledgment of deficiencies identified and evidence of a response in the subsequent assessment.</p> <p>Therefore we consider that this scoring issue is met at the SG 80 level but not at the SG 100 level.</p>		
References		Davies et al. 2014, Haddon 2010, Ianelli et al. 2012, Maguire 2010, SPC-OFP 2011, Tremblayer-Boyer et al. 2017		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				N/A
Condition				

Principle 2

Fishing on AFADs is evaluated separately from fishing on free schools for PIs 2.1.1, 2.1.2 and 2.1.3 because skipjack tuna is a main primary species for only AFAD fishing. For PIs 2.2.1, 2.2.2 and 2.2.3 both types of fishing have no main secondary species and the same scores and rationales apply to each.

PI 2.1.1 – Primary species outcome

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.		
Scoring Issue	SG 60	SG 80	SG 100
a	Main primary species stock status		
Guided post	<p>Main primary species are likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main primary species are highly likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, there is either evidence of recovery or a demonstrably effective strategy in place between all MSC UoAs which categorise this species as main, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.</p>
Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: Y Free school: Y
Justification	<p><u>AFADs</u>: Skipjack tuna is the only main primary species for AFADs. The WCPFC fishery for skipjack tuna is MSC certified in a number of fisheries with no conditions under P1 1.1.1. As detailed in the background, the stock is well above the PRI (Figure 19, Figure 20) and above levels that are consistent with MSY (Table 11). This meets SG 60, SG 80 and SG 100 requirements</p> <p><u>Free schools</u>: There are no main primary species for free school sets. By default SG 60, SG 80 and SG 100 requirements are met.</p>		
b	Minor primary species stock status		
Guided post			For minor species that are below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species
Met?			AFAD: Y Free school: Y
Justification	<p><u>AFADs and Free school</u>: Bigeye tuna is the only minor primary species. Bigeye tuna are considered to be not overfished and not subject to overfishing (WCPFC-SC 2018). The catch of bigeye tuna by the UoA (< 1t) represents a negligible percentage of the total catch of this species in the WCPFC (126,929 t in 2017) (WCPFC-SC 2018) and therefore it does not hinder rebuilding.</p>		
References	WCPFC-SC 201		
OVERALL PERFORMANCE INDICATOR SCORE:			Score 100
CONDITION NUMBER (if relevant):			

Element	SI a	SI b	Element score	PI score
Sets on Anchored FADs	100	100	100	100
Sets on Free Sets	100	100	100	

PI 2.1.2 – Primary species management strategy - AFADs

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
Guided post	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to above the point where recruitment would be impaired.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.	
Met?	AFADs: Y Free school: Y	AFADs: Y Free school: Y	AFADs: N Free school: N	
Justification	<p><u>AFADs</u>: Skipjack tuna is the only main primary species and bigeye tuna the only minor primary species. The catch of skipjack by UoA vessels (<100t) is such a small proportion of the total WCPFC catch (over 1.5 million t: WCPFC-SC 2018) that its impact on the stock is not discernible and could not be hindering recovery should that be necessary. Therefore, following GSA3.5.1 on p 436 of the FCR, neither measures nor a partial strategy is considered necessary and SG80 is met.</p> <p>There is no explicit strategy for managing the handline fishery for species other than yellowfin tuna. Although the scale and intensity of fishing in the UoA, and the low level of catch of skipjack and bigeye, is such that no formal strategy is required in practice, SG100 scoring does not contain an “if necessary” clause. SG100 is therefore not met.</p> <p><u>Free school</u>: There are no main primary species for free school fishing. By default, SG 60 and SG 80 requirements are met.</p> <p>Bigeye tuna is the only minor primary species. There is no explicit strategy for managing the handline fishery for species other than yellowfin tuna. Although the scale and intensity of fishing in the UoA, and the low level of catch of bigeye (<0.5t), is such that no formal strategy is required in practice, SG100 scoring does not contain an “if necessary” clause. SG100 is therefore not met.</p>			
b	Management strategy evaluation			
Guided post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.	
Met?	AFADs: Y Free school: Y	AFADs: Y Free school: Y	AFADs: N Free school: N	
Justification	<p><u>AFAD</u>: Consistent with the rationale for PI 2.1.2a and the low levels of catch of skipjack and bigeye tuna, as neither measures nor a partial strategy are considered necessary, the SG 60 and SG 80 requirements are considered to be met.</p> <p>There has been no form of testing, however, other than some recent data collection on catch levels verified by some time-lapse cameras on a sample of vessels. This is not yet considered sufficient to provide high confidence about a partial strategy. The SG100 requirements are therefore not considered to be met.</p> <p><u>Free school</u>: Consistent with the rationale for PI 2.1.2a and the low levels of catch of bigeye tuna, as neither measures nor a partial strategy are considered necessary, the SG 60 and SG 80 requirements are considered to be met.</p> <p>There has been no form of testing, however, other than some recent data collection on catch levels verified by some time-lapse cameras on a sample of vessels. This is not yet</p>			

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
		considered sufficient to provide high confidence about a partial strategy. The SG100 requirements are therefore not considered to be met			
c	Management strategy implementation				
	Guidepost		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).	
	Met?		AFAD: Y Free school: Y	AFAD: N Free school: N	
	Justification	<p><u>AFADs</u>: Consistent with the rationale for PI 2.1.2a and the low levels of catch of skipjack and bigeye tuna, as neither measures nor a partial strategy are considered necessary, the SG 80 requirements are considered to be met.</p> <p>There is no explicit strategy for the UoA for managing the primary species. Although the very low level of catch may persist and provides some evidence that current arrangements would be sufficient, this does constitute “clear evidence” that objectives are being achieved. SG100 requirements are therefore not met.</p> <p><u>Free school</u>: Consistent with the rationale for PI 2.1.2a and the low levels of catch of bigeye tuna, as neither measures nor a partial strategy are considered necessary, the SG 80 requirements are considered to be met.</p> <p>There is no explicit strategy for the UoA for managing the primary species. Although the very low level of catch may persist and provides some evidence that current arrangements would be sufficient, this does constitute “clear evidence” that objectives are being achieved. SG100 requirements are therefore not met</p>			
d	Shark finning				
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.	
	Met?	Not relevant	Not relevant	Not relevant	
	Justification	AFAD and Free school: The scoring issue has not been scored as no Primary species are sharks.			
e	Review of alternative measures				
	Guidepost	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.	
	Met?	Not relevant	Not relevant	Not relevant	
	Justification	AFAD and Free school: The scoring issue has not been scored as there are no unwanted catches of Primary species.			
References		WCPFC-SC 2018			
OVERALL PERFORMANCE INDICATOR SCORE:					Score
CONDITION NUMBER (if relevant):					80

Element	SI a	SI b	SI c	SI d	SI e	Element score	PI score
Sets on Anchored FADs	80	80	80	NA	NA	80	80
Sets on Free Sets	80	80	80	NA	NA	80	

PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main species			
	Guidepost	Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: Y Free school: Y
	Justification	<u>AFADs</u> : Skipjack tuna is the only main primary species. The information available to score the impact of the UoA on the status of skipjack comes from the landing's records completed by fishers, which are verified by some time-lapse camera coverage, and port-sampling at landing. Given that the catches and impact on skipjack tuna status are negligible, the team considers the available information for this fishery adequate to estimate the impact of the UoA with a high degree of certainty. This meets the requirements of the SG 60, SG 80 and SG 100 levels. <u>Free school</u> : There are no main primary species but following SA3.3.1, this scoring issue is still required to be scored. The information available to score the impact of the UoA on the status of any potential main primary species comes from the landing's records completed by fishers, which are verified by some time-lapse camera coverage, and port-sampling at landing. Given that the catches and impact of the fishery are negligible, the team considers the available information for this fishery adequate to estimate the impact of the UoA with a high degree of certainty. This meets the requirements of the SG 60, SG 80 and SG 100 levels		
	Information adequacy for assessment of impact on minor species			
b	Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			AFAD: Y Free school: Y
	Justification	<u>AFAD</u> : Bigeye tuna is the only minor primary species. As for skipjack tuna, the information available to score the impact of the UoA on the status of bigeye comes from the landings records, verified by some time-lapse camera coverage, and the small scale of the fishery. These provide quantitative information that is adequate to determine that the UoA has a negligible impact on the status of bigeye tuna. This meets the requirements of the SG 100 level. <u>Free school</u> : Bigeye tuna is the only minor primary species. The information available to score the impact of the UoA on the status of bigeye comes from the landings records, verified by some time-lapse camera coverage, and the small scale of the fishery. These		

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
		provide quantitative information that is adequate to determine that the UoA has a negligible impact on the status of bigeye tuna. This meets the requirements of the SG 100 level		
c	Information adequacy for management strategy			
	Guidepost	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main Primary species.	Information is adequate to support a strategy to manage all primary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	<u>AFAD</u> : Consistent with the rationale for PI 2.1.2a, and given the low levels of catch of skipjack tuna, as neither measures nor a partial strategy are considered necessary as per GSA3.5.1, the SG 60 and SG 80 requirements are considered to be met for skipjack tuna, the only main primary species. As outlined in the rationale for PI 2.1.2c, given there is no explicit strategy for the UoA for managing all primary species, the information presently available is not yet sufficient to evaluate of whether objectives are being achieved. SG100 requirements are therefore not met. <u>Free school</u> : Consistent with the rationale for PI 2.1.2a, there are no main primary species so neither measures nor a partial strategy are considered necessary, and the SG 60 and SG 80 requirements are considered to be met. As outlined in the rationale for PI 2.1.2c, given there is no explicit strategy for the UoA for managing all primary species, the information presently available is not yet sufficient to evaluate of whether objectives are being achieved. SG100 requirements are therefore not met		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				95

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	100	100	80	95	95
Sets on Free Sets	100	100	80	95	

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biological based limit and does not hinder recovery of secondary species if they are below a biological based limit.		
Scoring Issue		SG 60	SG 80	SG 100
a	Main secondary species stock status			
	Guidepost	Main Secondary species are likely to be within biologically based limits. OR If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are highly likely to be above biologically based limits OR If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.	There is a high degree of certainty that main secondary species are within biologically based limits.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: Y Free school: Y
	Justification	<u>AFAD and Free school</u> : There are no main secondary species for either AFAD or free school sets. By default SG 60, SG 80 and SG 100 requirements are met.		
b	Minor secondary species stock status			
	Guidepost			Minor secondary species are highly likely to be above biologically based limits. OR For minor species that are below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			AFAD: N Free school: N
	Justification	<u>AFAD and Free school</u> : The low UoA catches of minor secondary species are very unlikely to would hinder recovery and rebuilding (if needed). Some, such as squid are of short-lived and highly productive species, and for many other minor secondary species such as black		

PI 2.2.1		The UoA aims to maintain secondary species above a biological based limit and does not hinder recovery of secondary species if they are below a biological based limit.	
		marlin, rainbow runners and the frigate tunas the UoA catches are very small compared to the large catches of many of these species across the WCPFC area. Nevertheless, the status of many of the minor secondary species is not known, nor is the percentage of the total removals by MSC UoAs that the catch by this UoA represents. There is insufficient evidence to support a SG100 score using the default tree and no PSA has been conducted on minor species.	
References			
OVERALL PERFORMANCE INDICATOR SCORE:			
CONDITION NUMBER (if relevant):			Score
			90

Element	SI a	SI b	Element score	PI score
Sets on Anchored FADs	100	80	90	90
Sets on Free Sets	100	80	90	

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guided post	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school: There are no main secondary species for either AFAD or free school fishing. By default SG 60 and SG 80 requirements are met. There is no explicit strategy for managing the secondary species in the handline fishery. Although the scale and intensity of fishing in the UoA, and the low level of catch of any secondary species, is such that no formal strategy is required in practice, SG100 scoring does not contain an “if necessary” clause. SG100 is therefore not met.		
b	Management strategy evaluation			
	Guided post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school: Consistent with the rationale for PI 2.2.2a and the low levels of catch of secondary species, as neither measures nor a partial strategy are considered necessary, the SG 60 and SG 80 requirements are considered to be met. There has been no form of testing, however, other than some recent data collection on catch levels verified by some time-lapse cameras on a sample of vessels. This is not yet considered sufficient to provide high confidence about a partial strategy. The SG100 requirements are therefore not considered to be met.		
c	Management strategy implementation			
	Guided post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school: Consistent with the rationale for PI 2.1.2a and the low levels of catch of secondary species, as neither measures nor a partial strategy are considered necessary, the SG 80 requirements are considered to be met. There is no explicit strategy for the UoA for managing the secondary species. Although the very low level of catch may persist and provides some evidence that current arrangements would be sufficient, this does constitute “clear evidence” that objectives are being achieved. SG100 requirements are therefore not met		

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
d	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	<u>AFAD and Free school</u> : There have been a low number of records of silky shark and short-fin mako sharks (some classified as ETP) having been caught by UoA fishers but no instances of shark finning have been recorded. The port sampling program has a 20% coverage of effort, and there is also the use of Time-Lapse Cameras on a small number of trips. The team considers that given the scale and impact of the fishery, this level of external validation is sufficient to provide a highly likely level of confidence that shark finning is not taking place. We therefore consider it to be highly likely that shark finning is not taking place. Nevertheless, we acknowledge that enforcement of the prohibition on shark finning is difficult across the many potential landing sites and therefore we do not consider there to be a high degree of certainty to this conclusion. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.		
e	Review of alternative measures to minimise mortality of unwanted catch			
	Justification	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Guidepost	<u>AFAD and Free school</u> : This scoring issue has not been scored as there are no unwanted catches of secondary species.		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				80

Element	SI a	SI b	SI c	SI d	SI e	Element score	PI score
Sets on Anchored FADs	80	80	80	80	NA	80	80
Sets on Free Sets	80	80	80	80	NA	80	

PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts on main secondary species			
Guidepost	Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and adequate to assess with a high degree of certainty the impact of the UoA on main secondary species with respect to status.	
Met?	AFAD:Y Free school: Y	AFAD:Y Free school: Y	AFAD:Y Free school: Y	
Justification	<u>AFAD and Free school:</u> There are no main secondary species for either AFAD or free school sets. By default SG 60, SG 80 and SG 100 requirements are met. The information available to score the impact of the UoA on the status of any potential main secondary species comes from the landing's records completed by fishers, which are verified by some time-lapse camera coverage, and port-sampling at landing. Given that the catches and impact of the fishery are negligible, the team considers the available information for this fishery adequate to estimate the impact of the UoA with a high degree of certainty.			
b	Information adequacy for assessment of impacts on minor secondary species			
Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.	
Met?			AFAD:Y Free school: Y	
Justification	<u>AFAD and Free school:</u> The system of monitoring landings, coupled with the time lapse cameras used for a sample of UoA vessels, has provided some quantitative information on the level of impact on minor secondary species. The status of many of the minor species is not well known but the low levels of catch recorded, and the small scale of the fishery are sufficient evidence to estimate that the fishery's is on the status of any of these species is very limited.			
c	Information adequacy for management strategy			
Guidepost	Information is adequate to support measures to manage main secondary species.	Information is adequate to support a partial strategy to manage main secondary species.	Information is adequate to support a strategy to manage all secondary species, and evaluate with a high degree of certainty	

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
				whether the strategy is achieving its objective .
	Met?	AFAD:Y Free school: Y	AFAD:Y Free school: Y	AFAD:N Free school: N
	Justification	<p><u>AFAD and Free school</u>: There are no main secondary species for either AFAD or free school sets. By default SG 60 and SG 80 requirements are met.</p> <p>As there is considered to be no explicit strategy for the UoA for managing the secondary species it cannot be determined whether the information available would be sufficient to support the objectives of such a strategy. SG100 requirements are therefore not met</p>		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				95

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	100	100	80	95	95
Sets on Free Sets	100	100	80	95	

PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guided post	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and likely to be within these limits.	Where national and/or international requirements set limits for ETP species, the combined effects of the MSC UoAs on the population/stock are known and highly likely to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a high degree of certainty that the combined effects of the MSC UoAs are within these limits.
	Met?	AFAD:NA Free school: NA	AFAD:NA Free school: NA	AFAD:NA Free school: NA
	Justification	There are set limits from no national and/or international requirements for ETP species, thus this SI is not scored.		
b	Direct effects			
	Guided post	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Known direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	AFAD:Y Free school: Y	AFAD: Y Free school: Y	AFAD:N Free school: N
	Justification	AFAD and Free school Species of marine turtles and sharks and rays are occasionally caught during fishing operations by UoA vessels. The data from the port sampling program (20% coverage) indicates that the numbers of ETP species captured and landed are very low. During 2015-2016 for the area of North Buru landings were recorded for the following species: silky sharks (n= 1), hawksbill turtle (n= 2) and loggerhead turtle (n= 1). There were also recordings of unknown sharks (n=4), unknown rays (n=1), which could be potential ETP species (Source I-Fish data). Presumably, not all landed species are dead, and some may be released alive. The number of species with fate confirmed as dead or consumed for both Buru and Seram from 2015-2018 is also quite low, with unknown sharks (n=3). The results from the time-lapse camera program did not record any interactions with ETP species at sea. Despite the low coverage of this program (1.2%) and some issues with accuracy of data, it provides an additional data source to confirm there are very low levels of interactions with ETP species. Considering the scale and intensity of the impact of the UoA and the low number of recorded interactions, the assessment team considers that the known direct effects on ETP species are highly likely to not hinder the recovery of any of these species, meeting SG80 . Given that the primary data source is from the port sampling program, there is limited information on the number of interactions with ETP species that are not landed. Although the information gathered through time-lapse cameras provides additional confidence that the number of interactions with ETP species is very low, there is no information on potential unobserved mortality from organisms that are released. For this reason, the UoA does not reach the SG100.		
c	Indirect effects			
	Guided post		Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
	Met?		AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	<p>AFAD and Free school</p> <p>Indirect trophic effects of fishing for tuna on the tropical pelagic ecosystem have been considered through a variety of modelling approaches (Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2014) and, although the impacts are not negligible, they have not been considered irreversible and no particular impacts on ETP species have been identified.</p> <p>The warm pool ecosystem was found to be resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community) a feature apparently related to the high diversity of predators in the food web that consume a wide range of prey (Allain et al. 2015).</p> <p>The indirect effects have thus been considered and are unlikely to create unacceptable impacts on any ETP species, but the level of evidence is insufficient to assign a high degree of confidence to this conclusion.</p> <p>The requirements of the SG 80 level but not of the SG 100 level are therefore considered to be met for each of the elements</p>		
References		Clarke 2018, Common Oceans (ABNJ) Tuna Project 2018b, Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2014.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				80

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	N/A	80	80	80	80
Sets on Free Sets	N/A	80	80	80	

PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: meet national and international requirements; ensure the UoA does not hinder recovery of ETP species.		
		Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guidepost	There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	AFAD:NA Free school: NA	AFAD:NA Free school: NA	AFAD:NA Free school: NA
	Justification	There are no requirements for protection or rebuilding provided through national ETP legislation or international agreements, thus this SI is not applicable.		
b	Management strategy in place (alternative)			
	Guidepost	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species
	Met?	AFAD:Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school There are several measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species. The fishing gear employed in this fishery (handline with anchored FADs) along with the restrictions on what constitutes a small-scale vessel (< 0.5 GT capacity), represent measures that limit the impact of the fishery and indirectly contribute to the management of the ETP species component. Other relevant measures in place include; monitoring of interaction of ETP species via the Port Sampling Program and the Time Lapse camera Initiative, frequent Training on ETP identification to enumerators who are collecting data via the Port Sampling Program and awareness campaigns for fishers on ETP species. Given the scale, intensity and cultural context of the fishery, the assessment team determines that these measures are enough to ensure the UoA does not hinder the recovery of ETP species, meeting SG80. These arrangements are not considered part of a tested strategy, thus the SG100 is not met.		
c	Management strategy evaluation			
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high

PI 2.3.2		The UoA has in place precautionary management strategies designed to: meet national and international requirements; ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.		
				confidence that the strategy will work.
	Met?	AFAD:Y Free school: Y	AFAD: Y Free school: Y	AFAD: Y Free school: Y
	Justification	AFAD and Free school Based on the quantitative information about the fishery provided from the Port Sampling Program and the Time Camera Lapse Initiative there is a high degree of confidence that the strategy will work, meeting SG100.		
d	Management strategy implementation			
	Guided post		There is some evidence that the measures/strategy is being implemented successfully.	There is clear evidence that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).
	Met?		AFAD:Y Free school: Y	AFAD:Y Free school: Y
	Justification	AFAD and Free school The information provided from the Port Sampling Program and the Time Camera Lapse Initiative, and evidence from education workshops with the fishers, provides evidence that the measures in the strategy are being implemented successfully. there is a high degree of confidence that the strategy will work, meeting SG100.		
e	Review of alternative measures to minimize mortality of ETP species			
	Guided post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school The Port Sampling Program data is regularly reviewed by the MDPI staff, the implementation and review of the Time Lapse camera and its limitations, provides evidence to meet SG80. There is no evidence of a biennial review, thus the SG100 is not met.		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				90

Element	SI a	SI b	SI c	SI d	SI e	Element score	PI score
Sets on Anchored FADs	N/A	80	100	100	80	90	90
Sets on Free Sets	N/A	80	100	100	80	90	

PI 2.3.3 – ETP species information

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: Information for the development of the management strategy; Information to assess the effectiveness of the management strategy; and Information to determine the outcome status of ETP species.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guidepost	Qualitative information is adequate to estimate the UoA related mortality on ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.	Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	AFAD and Free school The port sampling program and the time lapse camera provides quantitative information which is considered adequate to assess the UoA related mortality given the scale and impact of the fishery, meeting SG80. Information on post-capture mortality is not available, for ETP species that are captured and not landed, for this reason the SG100 is not met.		
b	Information adequacy for management strategy			
	Guidepost	Information is adequate to support measures to manage the impacts on ETP species.	Information is adequate to measure trends and support a strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: N
	Justification	Although the information obtained from the Port Sampling Program is limited only to verify the ETP species which are landed, the Time Lapse Camera program provides a verification mechanism to validate the data obtained at landing. The information is considered adequate when balanced against the low impact of the gear type employed in the UoA, thus meeting the SG80. Information from non-observed impacts is limited, thus the SG100 is not met.		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				80

Element	SI a	SI b	Element score	PI score
Sets on Anchored FADs	N/A	80	80	80
Sets on Free Sets	N/A	80	80	

PI 2.4.1 – Habitats outcome

PI 2.4.1	The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area(s) covered by the governance body(s) responsible for fisheries management.		
Scoring Issue	SG 60	SG 80	SG 100
a	Commonly encountered habitat status		
Guided post	The UoA is unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
Met?	AFAD: NA Free school: NA	AFAD: NA Free school: NA	AFAD: NA Free school: NA
Justification	<p><u>Free School & Anchored FADs</u> Handlines deployed on free school sets do not physically interact with benthic habitat during its operation.</p> <p>The north Buru and north Seram fishers of the UoA also employ anchored FADs in addition to free sets fishing, to fish for yellowfin tuna.</p> <p>The concrete blocks employed to anchor the FAD contact the marine substrate. The anchors have surface area of approximately one square meter surface area and deployed at a depth between 10 and 20 meters. The number of FADs deployed by the fishery is quite small, for North Buru there are records of six AFADs utilized by the vessels in the UoA. Though no data was received for North Seram, the number is expected to be similar, given that only roughly 15% of catch/sets are estimated to come from sets on AFADs.</p> <p>SlA for this PI is only applicable to commonly encountered (main) habitats. There are no commonly encountered habitats that regularly come into contact with handline gear on free school or AFAD sets, for this reason this SI is not applicable.</p>		
b	VME habitat status		
Guided post	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
Met?	AFAD: Yes Free school: NA	AFAD: Yes Free school: NA	AFAD: No Free school: NA
Justification	<p><u>Free School</u> Free School sets do not interact with any VMEs, thus this SI is not applicable.</p> <p><u>Anchored FAD</u> The area of operation of the UoA does not overlap with any Marine Protected Area. However, the assessment team identified a coral reef and sea grass habitats as sensitive habitats occurring in the Coral Triangle region, where the fishery takes place that would qualify as potential VMEs.</p> <p>Information on the broad distribution of these habitats, which is considered adequate to the scale and intensity of the UoA, indicates there is no overlap with the UoA and coral reef and sea grass habitats. Anecdotal evidence collected during the onsite visit and that the AFADs are deployed in sandy and rocky substrates and confirmed that the UoA does not interact with any VMEs. Coordinates for AFADs in North Buru were provided to the assessment team.</p> <p>The only direct interaction of the fishery with potential VMEs is with the deployment of the anchor in FADs, as outlined in SlA of this PI, the footprint of the anchor and the number of FADs employed by the UoA is negligible</p> <p>Anchored FADs that break from their anchor can become a form of marine debris, impacting coastal habitats, including coral reefs. For coral reefs in the Southeast Asia</p>		

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area(s) covered by the governance body(s) responsible for fisheries management.	
		<p>region, the main threat factors include densely populated coastlines, overfishing and destructive fishing practices (Burke et al. 2012). There is no global spatial data available on the impact of discarded fishing gear, nor on the impact of AFADs specifically. Research conducted in the Indian Ocean in the Seychelles Islands on environmental impacted of beached drifting FADs 2011 and 2015 found that DFADs impacted coral reef more than other habitats. The study found that the construction of the FAD was an important factor, with close to 50% of drifting FADs that employed nets as aggregators found on corals compared to 23% of drifting FADs employing synthetic ropes on coral reefs (Balderson and Martin, 2015). Seagrass has also been recorded to have been entangled in FADs (Zudaire et al. 2018).</p> <p>Marine-based pollution, without including impacts of discarded fishing gear, is considered to affect less than 5% of coral reefs in Southeast Asia (Burke et al. 2012). The inclusion of FADs is unlikely to elevate the relative importance of marine debris as a local threat for coral reefs either within Indonesia’s waters or in the Coral Triangle to a point where it would result in a driving threat factor. Moreover, the AFADs employed in the UoA are thought to not have entangling material, making them less likely to impact coral reefs and sea grasses.</p> <p>The assessment team concluded that it is highly unlikely that direct and undirect impacts of the UoA on coral reef and seagrass habitats reduces structure and function of these habitats to a point of serious or irreversible harm, thus meeting SG80.</p> <p>There is no evidence on the impacts of AFADs for the UoA, thus the SG100 is not met.</p>	
c	Minor habitat status		
	Guided post		There is evidence that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?		AFAD: Yes Free school: Yes
	Justification	The MSC identifies serious or irreversible harm to habitat structure and function such that “[...] the habitat would be unable to recover to at least 80% of its unimpacted structure, biological diversity and function within 5-20 years, if fishing were to cease entirely.” (Table SA8: Principle 2 Phrases). Handline gear does not interact with benthic habitats. Although, anchored FADs do interact with the benthic substrate, the small surface area of the anchors and the small number of deployed anchored FADs have a negligible footprint on marine habitats, thus the assessment team concludes that the UoA is highly unlikely to reduce the structure and function of minor habitats to a point of serious or irreversible harm, thus meeting the SG100.	
References		Click here to enter text.	
OVERALL PERFORMANCE INDICATOR SCORE:			Score
CONDITION NUMBER (if relevant):			95

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	N/A	80	100	90	95
Sets on Free Sets	N/A	N/A	100	100	

PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guided post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: Y
	Justification	<p>Free School</p> <p>As outline in PI 2.4.1, free school sets have no interaction with benthic habitats thus there is no need to have measures or partial strategy because there is no or negligible impact on the Habitats component, meeting at least the SG80 level.</p> <p>Even those fisheries that do not regularly contact benthic habitats need to be scored at the SG100 to assess indirect impacts such as gear loss. There are guidelines in place via the AP2HI Code of Conduct requiring that for the free sets element there is no other potential impact on habitats, thus the assessment team determined that a strategy is not required to manage impacts meetings SG100.</p> <p><u>Anchored FAD</u></p> <p>Although the impacts of AFADs is considered negligible, meeting Habitat Outcome SG80, there are no explicit management measures to control the number of AFADs deployed by the UoA. There is the potential risk of an increase in AFADs leading to an increase in impact on the Habitat component, particularly VMEs.</p> <p>At the regional level (WCPFC) there are some measures in place including the application of a three month prohibition on the setting on FADs for purse seine vessels fishing in the high seas and EEZs (CMM 2009-02) and the requirement for the submission of a management plan for the use of FADs for vessels in the high seas (WCPFC CMM 2014-01). In response to the WCPFC's CMM 2014-01, Indonesia prepared a FAD Management Plan, valid from 2015 to 2017. None of the management measures in the FAD management plan are applicable to the small-scale vessels that are part of the UoA, and there are currently no explicit management measures in place to regulate the deployment and registration of FADs employed by small-scale vessels (< 5 GT).</p> <p>There are also no specific considerations in any of the measures in place at the regional (WCPFC) or national level about sensitive habitat areas.</p> <p>Harta Samudra has signed the Code of Conduct of <i>Asosiasi Perikanan Pole & Line dan Handline Indonesia</i> (AP2HI) (Indonesian Pole & Line and Handline Fisheries Association). Which includes the guidelines/recommendations: recording and reporting the loss and/or recovery of fishing gear and FADs at sea, committing to best practices in FAD construction by using non- entangling and biodegradable materials, supporting the FAD management based on the prevailing laws and regulations, and provide AP2HI with relevant FAD registration documents.</p> <p>The guidelines outlined in the AP2HI Code of Conduct provide a basis for an informal management measures and mechanisms that respond to the absence of regulations for AFADs employed by small-scale fisheries at the regional and national levels. These measures (recording and reporting loss of FADs, registration of FADs, and use of biodegradable materials) represent a cohesive arrangement that can work to monitor the number of deployed and lost FADs and information on the areas of deployment, creating a basis to detect an increase in impact that requires a change in measures, this is considered a partial strategy, meeting SG80.</p> <p>A strategy at the SG100 level should contain “mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts”.</p>		
b	Management strategy evaluation			

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.
	Met?	AFAD: Y Free school: Y	AFAD: Y Free school: Y	AFAD: N Free school: Y
	Justification	<p>Free School: The operation of pelagic handline provides an objective basis for confidence that the UoA when fishing on free school sets does not interact with the benthic habitat. Information about the areas of operation of the vessels in the UoA obtained from vessel monitoring tracking and footage from the time lapse cameras confirm that the operations of the UoA will not have an impact on habitat, meeting SG100.⁵</p> <p>Anchored FAD: There information provided on the low number of FADs employed in the fishery and the general distribution of substrates, provides some objective basis for confidence that the measures in place are currently working to ensure the UoA does not reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm, meeting SG80. There is not enough information on all AFADs used by the fishers in the UoA, and their location, thus the SG100 is not met.</p>		
c		Management strategy implementation		
	Guidepost		There is some quantitative evidence that the measures/partial strategy is being implemented successfully.	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		AFAD: N Free school: Y	AFAD: N Free school: Y
	Justification	<p><u>Free School:</u> There is no need to have measures or a partial strategy for free sets because there is no impact on Habitats, meeting at least the SG80 for this scoring issue. There is information of the area of operation of the handlines sets collected via vessel monitoring systems implemented on a selection of vessels, and there is evidence that all fishers are only employing handline as the gear type as evidenced by the port sampling reports, meeting the SG100.</p> <p><u>Anchored FAD:</u> As outlined in Scoring Issue a of this Principal Indicator, the assessment team considers the “informal” measures put in place via the (AP2HI) Code of Conduct to be relevant measures to the protection of coral reefs. However, the assessment team did not receive evidence of</p>		

⁵ As per the response to the MSC Interpretation Log: “Although it is not specified in the requirements, the MSC’s intent is that the ‘if necessary’ in scoring issue (a) also pertains to scoring issues (b) and (c). If the fishery does not need to have measures or partial strategy because there is no or negligible impact on Primary, Secondary, Habitats or Ecosystem components, it would meet at least the SG80 level in scoring issues a-c.” (Interpretation Log Use of 'if necessary' in P2 management PIs (Use-of-if-necessary-in-P2-management-PIs-2-1-2-2-2-2-2-4-2-2-5-2-PI-2-1-2-1527262011402)2.5.2)Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SA PI 2.1.2, 2.2.2, 2.4.2, 2.5.2)

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
		registration of FADs for Seram, nor evidence of recording and reporting the loss and/or recovery of fishing gear and FADs at sea, it can't be concluded that the partial strategy is being implemented successfully, thus the SG80 is not met.		
d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs			
	Guidepost	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is clear quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	AFAD: Y Free school: NA	AFAD: Y Free school: NA	AFAD: N Free school: NA
	Justification	Free School The fishery operation on free school sets and anchored FADs does not interact with any VMEs and so this scoring issue is not relevant. Anchored FADs There are no specific management requirements to protect coral reefs or seagrass habitats for AFADs at the WCPFC or the Indonesia management framework. At the national level the management requirements to protect coral reefs and seagrass include the establishment of marine protected areas, the regulation of certain fishing practices that are harmful to coral reefs (i.e. explosives and cyanide) and ban on the export of corals. Out of these measures the only relevant to the UoA is that of Marine Protected areas. Data captured on the location of a sample of fishing vessels, indicates that the vessels in the UoA don't fish within MPA, thus there is some quantitative evidence that the UoA complies with the protection measures for VMEs, meeting SG80. Without information on the location of all AFADs employed by the UoA the SG100 is not achieved.		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant): Condition 2-1: By the year four surveillance the fishery shall provide some quantitative evidence that the measures/partial strategy [for AFADs] is being implemented successfully.				75

Element	SI a	SI b	SI c	SI d	Element score	PI score
Sets on Anchored FADs	80	80	60	80	75	75
Sets on Free Sets	100	100	100	NA	100	

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guidepost	<p>The types and distribution of the main habitats are broadly understood.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	AFAD: No Free school: No
	Justification	<p>Free School & Anchored FADs</p> <p>In the Coral Triangle Region there is information available on the distribution of main habitats and vulnerable habitats (coral reefs, sea grass, and mangroves) at a level of details that is relevant to the scale and intensity of the UoA, meeting SG80.</p>		
b	Information adequacy for assessment of impacts			
	Guidepost	<p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>The physical impacts of the gear on all habitats have been quantified fully.</p>
	Met?	AFAD: Yes Free school: Yes	AFAD: No Free school: Yes	AFAD: No Free school: Yes

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
	Justification	<p>Free School</p> <p>Information on the operation of the fishing gear, and on the location of free sets, provided via the GPS system to monitor a sample of vessels, provides adequate information to identify the main impacts of the UoA and the interaction with the fishing gear. Given that there are not impacts of the gear on habitats the team considers the SG100 is also met.</p> <p>Anchored FADs</p> <p>Information on the location of AFADs employed by the vessels in the UoA operating out of North Buru, and description of the AFADs employed, provides information to broadly understand overlap of habitat with fishing gear, meeting SG60.</p> <p>However, there is no information on the location of AFADs in Seram, preventing the fishery from reaching SG80.</p>		
c	Monitoring			
	Guidepost		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.
	Met?		AFAD: No Free school: Yes	AFAD: No Free school: No
	Justification	<p>Free School</p> <p>Information collected for free school sets is considered adequate to detect any increase in risk to main habitats, meeting SG80</p> <p>There is no evidence that changes in habitat distributions over time are measures in a consistent manner, thus the SG100 is not met.</p> <p>Anchored FADs</p> <p>There is no information on the AFADs deployed in Seram, nor is there a clear monitoring of AFADs deployed/utilized by the vessels in the UoA, thus the information collected can't be employed to detect any increase in risk to the main habitats, the SG80 is not met.</p>		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				
CONDITION NUMBER (if relevant): Condition 2-2: By year four the client shall provide evidence that: Information [for AFADs] is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. Adequate information [for AFADs] continues to be collected to detect any increase in risk to the main habitats.				Score 70

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	80	60	60	65	70
Sets on Free Sets	80	80	80	80	

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guidpost	The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	AFAD: No Free school: Yes
	Justification	<p>For the purposes of this assessment the assessment team has considered a broad range of features and measures from studies at a wider ecosystem scale. The pelagic ecosystems that support the yellowfin tuna fisheries in the WCPO are spread over very broad spatial scales and are influenced by oceanographic and climatic factors beyond the geographic boundaries of this fishery.</p> <p>There are aspects that are relevant to both set types, and aspects which pertain only to FAD sets.</p> <p>FADs and Free school:</p> <p>As described in the background, there has been a range of models of the structure and functioning of the pelagic ecosystems developed that support the main tuna fisheries and their responses to fishing and climate change (e.g. Allain et al. 2007, Allain et al. 2015, Kitchell et al. 1999, Lehodey et al. 2013, Leroy et al. 2013, Sibert et al. 2006).</p> <p>There have been substantial impacts from the depletion of the main target species, but although the trophic level of the catch had decreased slightly, no such decrease was apparent in the population trophic level (Sibert et al., 2006). Other modelling (Allain et al. 2015) suggests that the structure of the warm pool/cold tongue ecosystem is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community).</p> <p>Overall, findings indicated that tuna fishery impacts on top-level predators in the Pacific Ocean were substantial but that ecosystem impacts were likely to be minor. These studies suggests it is unlikely that neither the UoA fishery in particular nor the whole WCPFC tuna fishery, are having an irreversible impact on ecosystem structure or functioning to a point where there would be a serious or irreversible harm.</p> <p>Considering the scale and impact of the UoA, the assessment team can confirm that it's highly unlikely that the impacts of the UoA can result in serious or irreversible harm to the pelagic ecosystem supporting yellowfin tuna fisheries in the WCPO, thus meeting SG100.</p> <p>For FAD sets only</p> <p>There is the additional issue of the potential broader impact of FADs that is beyond the fish removed by fishing. The presence of both anchored and drifting FADs has the potential to alter the distribution and migration of tunas (Leroy et al. 2013, Phillips et al. 2017). FADs have been shown to influence the behavior and movement patterns of skipjack, yellowfin, and bigeye tuna, with the juveniles of each species occupying shallower habitats when associated with FADs (Schaefer and Fuller 2002, 2005, 2010, Fuller et al. 2015). There is some evidence that indicated that FADs both attract and retain tuna, and may affect distribution and migrations of tuna (Leroy et al. 2013). Other studies support the proposal that the large majority of residences at floating objects by tuna are moderately short, and that there is little evidence to suggest that their biology, movement behaviours or entrainment to a region are being significantly affected (Phillips et al. 2017).</p>		

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		<p>Phillips et al. (2017) suggest that processes working at different scales may explain the inter- and intra-individual variability in fish behavior that they observed for bigeye and yellowfin tuna. They suggested that there was an interaction between fine scale variability in the availability of prey, the local density of conspecifics, and the multi-species composition of the schools themselves whilst islands and other bathymetric features may affect vertical behaviour at larger spatial scales. They concluded that purse-seiners set on floating objects because they bring tuna to a more easily found locality in horizontal space, and then aggregate them in relative shallow water through this surface behaviour. The surface-association events they identified varied greatly. While some events were clear and prolonged, the large majority are not, and extended surface-association behaviour was rarely exhibited immediately prior to capture.</p> <p>Leroy et al. (2013) noted that the ways in which FADs interact with the biotic components of tuna environmental preferences, through prey concentration, increased feeding on juvenile conspecifics, or incorrect habitat utilization, need further investigation, including tuna foraging and the effect of FADs on the behavior of other important species in the pelagic ecosystem.</p> <p>This is an area of active research to address the concern that the widespread use of FADs may be having important ecosystem effects. We expect that the monitoring and assessment programs that are in place for the WCPO fisheries are likely to be able to detect any major effects and expect that management would be responsive to them, so that Principle 1 and 2 objectives are still likely to be achieved. These monitoring and assessment programs are very comprehensive, the scientists involved are well aware of these ecosystem issues and are active in the research on them, so we consider it likely that they would disrupt key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</p> <p>Nevertheless, the science is not yet at the stage where we could say that there is good evidence that this outcome is highly likely.</p> <p>For FAD sets this meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.</p>
References		Click here to enter text.
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant):		90
Click here to enter text.		

Element	SI a	PI score
Sets on Anchored FADs	80	95
Sets on Free Sets	100	

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guidepost	There are measures in place, if necessary which take into account the potential impacts of the fishery on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan , in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	AFAD: No Free school: No
	Justification	Free School and Anchored FADs As stated in PI 2.5.1 there is no or negligible impact from the fishery on the Ecosystem components. For this reason, the fishery does not need to have measures or partial strategy, automatically meeting SG80 level. At the regional level, the 1995 FAO Code of Conduct for Responsible Fisheries is used as the framework for sustainable fisheries for an “Ecosystem Approach to Fisheries Management (EAFM)”. Tuna are important predatory species in the Pacific Ocean. The WCPFC’s application of the FAO code extends to the highly migratory fish species including tuna through Conservation and Management Measures such as CMM 2014-01 on the management of bigeye, yellowfin and skipjack, as well as to the management of non-target species, in particular through Resolution 2005-03 on Non-Target Fish Species and CMMs to improve the protection of sharks. Although not specifically designed to manage impacts on the ecosystem, the range of measures in place is considered to represent a strategy that works to achieve the intended outcome. We note that there is no specific ecosystem management plan for the WCPO but also SA3.17.3.2 states that ‘It may not be necessary to have a specific “ecosystem strategy” other than that which comprises the individual strategies for the other components under P1 and P2.’, Nonetheless, the existing measures at a regional/national level are not applicable to the small-scale vessels operating in the UoA, which have no effort controls and no controls on number of FADs deployed. For this reason, the SG100 is not met.		
b	Management strategy evaluation			
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes
	Justification	Free School and Anchored FADs As stated in PI 2.5.1 there is no or negligible impact from the fishery on the Ecosystem components. For this reason, the fishery does not need to have measures or partial strategy, automatically meeting SG80 level. The regional stock assessments indicate that current harvest strategies and management measures have been successful in maintaining target species about the BMSY level. The strategy considers the significant sources of fishery related risks to the WCPO ecosystem, namely the removal of target species, risks associated with impacts of bycatch and		

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
		discarding of a wide range of non-target species. Overall, the strategy is considered likely to work. The extensive ecosystem modelling (described under PI 2.5.1) results of a form of testing for the specific ecosystem that provides high confidence that the partial strategy will work, meeting SG100.		
c	Management strategy implementation			
	Guidpost		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		AFAD: Yes Free school: Yes	AFAD: No Free school: No
	Justification	Free School and Anchored FADs As stated in PI 2.5.1 there is no or negligible impact from the fishery on the Ecosystem components. For this reason, the fishery does not need to have measures or partial strategy, automatically meeting SG80 level. As previously indicated, regional stock assessments show that at a regional level current harvest strategies and management measures have largely been successful in maintaining target species at about the BMSY level. Available ecosystem modelling suggests it is unlikely the client fishery is having an irreversible impact on ecosystem functioning. Nonetheless, Indonesia does not have in place a harvest control rule, as required by the WCPFC, thus it can't be said that there is clear evidence that the partial strategy is being implemented successfully at the national scale. The SG100 is not met.		
References		Click here to enter text.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				85
Condition				

Element	SI a	SI b	SI a	Element Score	PI score
Sets on Anchored FADs	80	100	80	85	85
Sets on Free Sets	80	100	80	85	

PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guidepost	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	
	Justification	Free School and Anchored FADs At a regional scale there are a number of organisations are collecting data to improve the knowledge of the structure of the Pacific Ocean pelagic ecosystem. This occurs through observer programmes (e.g. bycatch composition and quantities), trophic analyses (e.g. stomach contents, stable isotopes), and mid-trophic level sampling (e.g. acoustics and net sampling of micronekton and zooplankton). However, trophic analyses and mid-trophic level sampling are conducted on a project-by-project basis and are not continuous in space and time. Information is adequate to broadly understand the key elements of the ecosystem, meeting SG 60 and 80 requirements.		
b	Investigation of UoA impacts			
	Guidepost	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail .	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and have been investigated in detail .
	Met?	AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes	AFAD: No Free school: No
	Justification	Free School and Anchored FADs Trophic structure of pelagic ecosystems in the Pacific, including the WCPO, has been characterised using Ecopath and Ecosim models based on diet data (Allain et al. 2007). SEAPODYM is a dynamic system model developed for investigating spatial tuna population dynamics under the influence of both fishing and environmental effects (Lehodey et al., 2013b). The continued development and application of the SEAPODYM model to the work of the WCPFC Scientific Committee, including its application to tuna and billfish fisheries in the South Pacific, is facilitated through the multi-agency Project 62 which affiliates the independently funded work on SEAPODYM into the SC’s work programme (Lehodey et al., 2013b). A list of current projects is given in Lehodey et al. (2013b). Main impacts of the fishery on the key ecosystem elements can be inferred from existing information and some have been investigated in detail, though not to the extent to meet SG 100 requirements. The potential impacts of FADs themselves on tuna behavior that have been discussed under PI 2.5.1 are not considered to be main impacts and are therefore not considered relevant to this scoring issue. This meets the requirements of the SG 60 and SG 80 levels.		
c	Understanding of component functions			
	Guidepost		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are understood .
	Met?		AFAD: Yes Free school: Yes	AFAD: Yes Free school: Yes

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
	Justification	Free School and Anchored FADs At a regional level information on target and non-target species (bycatch and ETP species) is gathered by the SPC through logbook data and the regional observer programme, as well as being available via a number of historical research projects. Sufficient information is available to identify the range of species that are impacted and to determine their respective roles e.g. their trophic level and potential roles in transfer of energy and nutrients between various pelagic habitats (epipelagic, mesopelagic and bathypelagic) or between pelagic and demersal habitats. In order to improve the availability of data, the Kobe Bycatch Technical Working Group (KBTWG) was established in 2009 with the aim to Identify, compare and review the data fields and collection protocols of logbook and observer bycatch data being employed by each Tuna RFMO. The KBTWG provides guidance for improving data collection efforts and, to the extent possible, the harmonization of data collection protocols among tuna RFMOs. These data will improve future analysis of ecosystem functions. At the scale of the UoA, the impacts of the UoA on P1 target species, primary, secondary, and ETP species is available via monitoring of landings. The information gathered is sufficient to identify species impacted and understand the main functions of the ecosystem components, meeting SG100		
		Information relevance		
		Guidepost	Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred.
		Met?	AFAD: Yes Free school: Yes	AFAD: No Free school: No
d	Justification	FADs and Free school: At the UoA level data are collected on the key target and non-target tuna species landed by the fishery through the Port Sampling Program. Given the scale of the fishery, this information is deemed adequate to allow some of the main consequences on the impacts of the UoA on the ecosystem to be inferred, meeting the SG80. The information of the UoA on non-retained species is limited to landings, thus it's not considered adequate to assess all impact of the UoA, for this reason the SG100 is not met.		
		Monitoring		
		Guidepost	Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
		Met?	AFAD: Yes Free school: Yes	AFAD: No Free school: No
e	Justification	FADs and Free school: Data are collected on the key target and non-target tuna and billfish species taken by the fishery through logbooks and the regional observer programme. Information available is sufficient to allow ecosystem modelling at a regional scale to detect an increase in risk levels to ecosystem components. SG 80 is met, however, in the absence of a comprehensive strategy for ecosystem management which incorporates the collection of broader ecosystem information than existing systems, SG 100 is not met.		
		Monitoring		
		Guidepost	Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
		Met?	AFAD: Yes Free school: Yes	AFAD: No Free school: No

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.	
References	Click here to enter text.	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		85

Element	SI a	SI b	SI c	Element score	PI score
Sets on Anchored FADs	80	100	80	85	85
Sets on Free Sets	80	100	80	85	

Principle 3

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

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: Is capable of delivering sustainability in the UoA(s); and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework.		
Scoring Issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guided post	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	(Y)	(N)	(N)
	Justification	<p>The team determined there is a combination of jurisdictional categories applicable to the management system of the UoA, including informal/customary management systems though the Fair Trade certification scheme, formal Indonesian national and provincial management, and international cooperation requirements for straddling stocks under the Western and Central Pacific Fisheries Commission (WCPFC) (MSC FCR v2.0 SA4.1.1).</p> <p>WCPFC Framework</p> <p>The Yellowfin hand-line tuna fishery in Buru and Seram targets shared yellowfin tuna stocks spanning the Western and Central Pacific Ocean. The regional management of this fishery is governed through Regional Fisheries Management Office (RFMO) of the Western and Central Pacific Fisheries Commission (WCPFC). The work of the Commission is supported by the Scientific Committee (SC) that provides update on best available scientific information to inform Committee's consideration for appropriate conservation and management measures (CMMs). These CMMs describe binding decisions relating to conservation and management measures of the fishery. Examples of CMMs relating to yellowfin tuna fishery include: CMM 2016-01 that is now replaced by CMM 2018-01 on the Conservation and Management Measures for big-eye, yellowfin and skipjack tuna in the WCPO and CMM 2013-08 on silky shark. In addition, there is a Technical and Compliance Committee (TCC) that reviews members' adherence to Commission decisions and monitors individual countries' implementation of the CMMs.</p> <p>Following the ratifications of the UN Convention on the Law of the Sea (UNCLOS) 1982 through Indonesian Law No.17/1985, and its agreement for implementation of the UNCLOS provision relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks in 2009 through Law No. 21/2009, Indonesian government also ratified the Convention on the Conservation and Management of Highly Migratory Fish Stock in the Western and Central Pacific Oceans in 2013, through Presidential Regulation No.61/2013. Indonesia is one of the signatory countries of the WCPFC Convention in Honolulu, 2000. and became a full Cooperating Commission Member (CCM) of the WCPFC in December 2013 which facilitated Indonesia to participate in General Session and Scientific and Technical Working Groups of the WCPFC.</p> <p>Territorial seas and archipelagic waters are not part of the WCPFC's convention area⁶, excluding the requirements of implementing CMMs in archipelagic waters. Nonetheless,</p>		

⁶ stipulated under Article 56 of UNCLOS

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> Is capable of delivering sustainability in the UoA(s); and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework.
	<p>article 8 of the WCPF Convention requires compatibility of management measures for areas under national jurisdiction with those established for the high seas.</p> <p>Indonesia National Framework</p> <p>Fisheries management in Indonesia is regulated through Fisheries Law No.31/2004 which was later amended as Law No. 45/2009 concerning Fisheries. These laws provide the legal framework for a variety of management measures, including effort control, quotas, gear restrictions, area restrictions, fisheries enforcement and sanctions.</p> <p>The Ministry of Marine Affairs and Fisheries (MMAF) is responsible for overseeing fisheries beyond 12 miles. The provincial government is responsible for the management of capture fisheries in sea waters up to 12 nautical miles/archipelagic waters (Indonesian Law No.23/2014 concerning Local Government).</p> <p>Fisheries are regulated through control of inputs to the fisheries through a licensing system. Both national and provincial governments are authorized to issue fishing licenses, depending on the size of the fishing boats and location of fishing grounds. MMAF Regulation No.30/2012, concerning Capture Fisheries Business in Indonesian Fisheries Management Areas (FMAs), authorizes the Governor (the head of provincial government) to issue fishing licenses for fishing boats from 10 to 30 GT that operate within the FMA where that province sits. Whereas the Minister of Marine Affairs and Fisheries (national government) is authorized to issue fishing license for fishing boats measured above 30 GT operating in waters above 12 NM (Indonesian EEZ and high seas). This ministerial regulation is reinforced by Indonesian Law No.23/2014 concerning Local Government that defines new mandates for provincial government (governor) in relation to matters relating to marine capture fisheries management that includes:</p> <ol style="list-style-type: none"> 6. Management of capture fisheries in sea waters up to 12 nautical miles. 7. Issuance of capture fisheries business license (<i>surat izin usaha perikanan tangkap</i>) for fishing vessels measured above 5 GT to 30 GT. 8. Issuance of licenses for provision of fishing vessels and fish carrier measured above 5 GT to 30 GT. 9. Registration of fishing vessels above 5 GT to 30 GT <p>The yellowfin hand-line tuna fishery under assessment qualifies as small-scale, as they all fish using fishing boats of approximately 1-3 GT. According to the fisheries law above, small-scale fishers are exempted from the requirement to obtain fishing licenses, known as <i>Surat Izin Penangkapan Ikan/SIPI</i> (Article 27 (5) Fisheries Law No. 45/2009) and <i>Surat Izin Kapal Pengangkut Ikan/SIKPI</i> (fish carrier/vessel license) (Article 28 (4) Fisheries Law No. 45/2009). Small-scale fishers are free to conduct fishing operations in all Fisheries Management Areas (Article 61 (1) Fisheries Law No. 31/2004); and obliged to register their vessel to the local fisheries agency, but not to pay a fee (Article 61 (5) Fisheries Law No. 31/2004). As, outlined in the article 27 (5) of Local Government Law 23/2014 and further stated in the Minister of Marine Affairs and Fisheries, MMAF Regulation No. 30/2012 concerning Capture Fisheries Business in Indonesian FMAs, the fishing licenses for small-scale fishers are replaced by the proof of boat registration. Presently, there are 147 small-scale boats belonging to Fisher Associations (FAs) in north Buru have been registered and about 61 are still in the process of registration. In north Seram, there are 48 small-scale fishing boats registered and 15 will soon also be registered. <i>Yayasan Masyarakat dan Perikanan Indonesia</i> (MDPI) has been instrumental in helping the members of the FAs in the boat registration process. The villages where fishers live are widely scattered throughout north Buru and north Seram and the distance between these villages to the office of the district fisheries agency, where the registration takes place, has posed</p>

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> Is capable of delivering sustainability in the UoA(s); and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework.
	<p>challenges in the registration process. In addition, the registration process is complicated, because the fishing boat measurement process, a prerequisite to obtain certificate of registration is conducted by a different government agency (i.e. agency of transportation).</p> <p>The north Buru and north Seram yellowfin hand-line tuna fishery UoA is located within the waters of Maluku Province of Indonesian Fisheries Management Area (FMA) 715. The entire Indonesian waters are divided into eleven FMAs, which are ecological units to develop fisheries management plans and programs, as declared through the MMAF 's Ministerial Decision No. 18/2014. The FMA geographical scope extends across more than one provincial administrative borders and is considered ecologically meaningful to uphold the implementation of Ecosystem-based Approach to Fishery Management (EAFM) principles. It therefore requires close collaboration among provincial governments and other stakeholders involved to ensure cohesive management planning and efficient programs implementation within the FMA. MMAF uses FMAs as unit to determine fisheries status, fishing capacity and fishing licensing allocation. To facilitate a mechanism to gain stakeholders inputs for development of a fisheries management plan within an FMA, the government has established a consultative platform/forum, known also as Fisheries Management Councils, through MMAF Minister Regulation No. 33/2019 concerning Organization and Working Procedures of Fisheries Management Council of the Indonesian FMAs. This mechanism is created to ensure well-coordinated planning and effective cooperation among different government institutions and stakeholders involved in the fishery management.</p> <p>As WCPFC's CMMs only apply at the EEZ and high seas, Indonesia has developed various compatible measures for tuna management in its Indonesian waters (0-12 NM from coastline).</p> <p>Indonesia has formalized the National Tuna Management Plan (NTMP) for tropical and neritic tuna (MMAF, 2015). As stated in this fisheries management plan, the long-term objectives of tuna, skipjack tuna and neritic tuna fisheries management are:</p> <ol style="list-style-type: none"> 10. to achieve sustainable management of tuna, skipjack tuna and neritic tuna and their related-ecosystems 11. to improve compliance on implementation of law and regulations concerning the capture of tuna and skipjack tuna, by-catch and ERS. 12. to meet market requirements for tuna and skipjack tuna <p>The development and implementation of a Harvest Strategy is a priority action of the National Tuna Management Plan (NTMP).</p> <p>As stated in Indonesia's interim harvest strategy for archipelagic waters (May 2018) and in Indonesia's updates on harvest strategies for tropical tuna in its archipelagic waters at WCPFC 16 (WCPFC16-2019-DP20_rev1, December 2019), Indonesia intends to develop harvest strategies within its archipelagic waters that are compatible with measures mandated by the WCPFC. Indonesia recently developed a framework for harvest strategies for tropical tuna in archipelagic waters. In this document, it is stated that the management objective of tuna and skipjack tuna management is to ensure the sustainability of yellowfin tuna, big-eye tuna and skipjack tuna resources through the implementation of a harvest strategy. The operational objective is to maintain spawning stock biomass (SSB) above the limit reference point (LRP) of 0.2 of the unfished level with the probability of 90%. This was set to avoid the reduction of tuna and skipjack tuna stocks to level that average recruitment declines, which could hamper the ability of the species to reproduce. Indonesia is soon to set a Target Reference Point (TRP) for the fisheries, when all possible</p>

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <p>Is capable of delivering sustainability in the UoA(s); and</p> <p>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</p> <p>Incorporates an appropriate dispute resolution framework.</p>
	<p>implications for social and economic objectives are considered and understood. This activity to identify the TRP has already been scheduled as an action plan to be implemented soon (fiscal year 2019-2020) under this harvest strategy implementation plan.</p> <p>In the harvest strategy framework document, it was also identified several possible options for tuna and skipjack tuna fisheries management measures which are:</p> <ol style="list-style-type: none"> 13. Limit on use of Fish Aggregating Device (FAD). 14. Spatial closure (of important spawning or nursery grounds) and temporal closure (during important events such as spawning). 15. Number of fishing days (per gear, for semi industrial and industrial vessels). 16. Number of vessels– limited entry (per gear; for semi industrial and industrial vessels through licensing, permits, taxing, and royalties). 17. Total Allowable Catch (TAC) limits per Fishery Management Area. <p>In the update during the Commission meeting of December 2019, Indonesia noted that an operation model has been developed under cooperation with WCPFC and CSIRO in 2018 and that additional information is required for finalizing the models for implementing the harvest strategy, including information to determine productivity of tropical tuna in the Archipelagic Waters, socio-economic information and bio-economic modeling for the different sectors of the tuna fisheries.</p> <p>The framework for the implementation for the harvest strategy identifies the need to improve data collection for small-scale fishing vessels and to ‘pay attention to the aspects of protection and welfare of small fishers (<10GT), given the significant contribution of this small-scale fishery’. However, it’s unclear which management measures to control effort would be applicable to the small-scale fishing sector, to which the UoA belongs. Small scale fisheries are considered to be Economically vulnerable, therefore laws and regulations are mostly designed to maintain or improve the livelihood of small scale fisheries. To limit effort, number of licenses are issued based on the fisheries resources potential (estimate of fisheries level of utilization) (see e.g. Ministerial Decision No. 50/2017). The structural application of this mechanism would be implemented at the FMA level and Provincial levels through the licensing or boat registration mechanism.</p> <p>The compliance of Indonesia with CMM data collection requirements is a long-standing issue. Although the UoA, operates outside the area of the convention, in territorial waters, Indonesia is required to have in place compatible measures with relevant CMMs (WCPFC 2018). Regarding data collection requirements in archipelagic waters, it’s mandatory for fishing vessel greater than 5 GT (Minister Regulation No. 48/PERMEN-KP/2014 on logbook). The National Commission on Fisheries Resource Assessment (<i>Komisi Nasional Pengkajian Sumberdaya Ikan/ Komnas Kajiskan</i>), an independent commission established as per mandate of Article 7 (4) of Fisheries Law has regularly evaluated and provided recommendation to the Minister of MMAF concerning the stock status of Indonesian fisheries in all FMAs of Indonesia which are regularly published.</p> <p>The north Buru and north Seram fishers of the UoA use anchored FADs (See PI 2.4.1). WCPFC recognizes the use of fish aggregating devices (FADs), floating devices that attracted fish to concentrate to facilitate capture, in tuna fishery. The Commission regulates the use/deployment of FADs in the EEZs and high seas through various means such as: by imposing FAD temporal closures in certain areas in a year and determining FAD design and constructions to reduce the risks of entanglement of endangered marine</p>

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> Is capable of delivering sustainability in the UoA(s); and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework.
	<p>species such as sharks and turtles. The use of natural or biodegradable materials to construct FADs is promoted to reduce the amount of synthetic marine debris. FADs in Indonesia are regulated through MMAF Ministerial Regulation No.26/2014 concerning Fish Aggregating Devices/FADs (<i>Rumpon</i>). Deployments of FADs within Indonesian FMAs require licenses to be issued by MMAF or the provincial government. Indonesian fishing vessels that have obtained FAD licenses (SIPR) could also deploy FADs in the high seas only after they have been registered at relevant RFMOs and those FADs must be marked with FAD identification in accordance with rules/regulations applied by the relevant RFMOs (article 25 of MMAF Ministerial Regulation No.26/2014). There are only controls on placement and number of FADs per vessel i.e. 3 FADs per vessel (Article 14 of MMAF Ministerial Regulation No.26/2014). In fact, small tuna handline fisheries using only single FAD by several vessels. Nonetheless, none of the requirements or regulations on FAD management at the national level are applicable to small-scale fishers in the UoA.</p> <p>Fair Trade Fishing Associations</p> <p>Capture fisheries management in Indonesia must consider <i>adat</i> law (local customary practices), local/traditional knowledge, and community participation (Article 6(2), Law No. 31/2004 concerning Fisheries)</p> <p>The north Buru and north Seram tuna fishers involved in the fishery under assessment have established fisher associations under the auspices of the Fair Trade USA (FT USA), Capture Fisheries Standard (CFS) since their certification under this standard in October 2014. The above tuna fisher associations have been recognized by the Maluku provincial government as member of key stakeholders within the Maluku province tuna fishery Co-management Council as recognized under the guideline for co-management of tuna fisheries in Maluku province (DKP Maluku, 2019). This cooperative mechanism will facilitate meaningful participation of all different government institutions and stakeholders at provincial level to participate in the development and implementation of tuna fishery management. The explicit inclusion of tuna fishers' associations into this Co-management Council means that tuna fisher associations will have equal say, right and responsibilities with other fisheries stakeholders on decision making processes concerning management of tuna fishery in Maluku provincial waters.</p> <p>As the holders of FT USA certification, these fisher associations are required to comply with the certification standard that includes empowerment, economic development, social responsibility and environmental stewardship. The resource management component of the FTUSA CFS include requirements on catch data, protection of ETP species, and establishment of conservation guidelines for target stocks, by-catch, habitat, and ETP components. (For more information see Background Section 3.5.1).</p> <p>The FTUSA CFS standard has in place requirements regarding catch data. MDPI has signed an MoU with the Indonesian government (Ministry of Marine Affairs and Fisheries), to report the catch data, as captured via I-Fish data platform to the WCPFC through Indonesia Annual report to WCPFC.</p> <p>There are specific requirements in the FT USA CFS standard which require that there is a fishery management plan (FMP) that includes controls on fishing mortality, means for tracking changes in stock status, details for how changes in stock status will lead to modifications in harvest practices; and a pre-agreement on how any decreases in landings associated with diminished stock abundance will be distributed amongst Registered Fishermen (FT USA CFS standard v1.01., clauses RM-FD 2.5 and 2.6). The UoA is not yet</p>

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <p>Is capable of delivering sustainability in the UoA(s); and</p> <p>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</p> <p>Incorporates an appropriate dispute resolution framework.</p>
	<p>fully compliant with these requirements. Recently, the FMP has been discussed and endorsed by the Maluku Provincial Fisheries Service during the Tuna Fisheries Co-Management Committee Meeting on Jan 23, 2020. Finalization of the FMP for legalization is underway.</p> <hr/> <p><i>Conclusion</i></p> <p>MSC guidance indicates that an “effective national legal system” refers to objective evidence that most of the essential features and elements needed to deliver sustainable fisheries are present in: “a. A coherent, logical set of practices or procedures, or b. Within a coherent, logical supporting ‘rule-making’ structure” (SA4.3.4.3).</p> <p>There are national laws, arrangements, agreements and policies governing the actions of the authorities and actors involved, which provide a supporting ‘rule-making’ structure. In archipelagic waters, Indonesia has ratified the National Tuna Management Plan and is in the process of developing a harvest strategy, which include the essential features and elements capable of delivering outcomes consistent with Principle 1. There are important shortcomings in the national legal system in effectively addressing small-scale fisheries. However, for this UoA there is a customary framework in place, via the FT USA CFS certification capable of delivering sustainability in the UoA in accordance with P1 and P 2 (MSC standard v2.01, SA4.3.1). The team concludes that the combination of the national level framework and the customary framework through the FT USA CFS certification contain the essential features and elements needed to deliver management outcomes consistent with MSC Principles 1 and 2. Furthermore, there is evidence that management outcomes for Principle 1 are met, as measured in PI 1.1.1 (GSA2.5), which is currently scored above 80.</p> <p>There is also in place frameworks for cooperation with other territories, sub-regional or regional fisheries management organizations to deliver sustainable fisheries (at least to delivers the intent of UNFSA Article 10). Indonesia along with its neighboring countries: Australia, Brunei Darussalam, Cambodia, Malaysia, Papua New Guinea, The Philippines, Singapore, Thailand, Timor-Leste and Vietnam have developed Regional Plan of Action to promote responsible fishing practices including for combating IUU fishing. MMAF in collaboration with Australian Centre for International Agricultural Research (ACIAR) have just completed and published results of two studies intended to (a) define the population structures of yellowfin tuna and bigeye tuna in Indonesia’s archipelagic waters and connectivity with adjoining regions; and to communicate the study’s findings and recommendations to the Indonesian and international science and policy communities, and (b) assess and characterize Indonesia’s FADs associated tuna fisheries. Indonesia has been a full Cooperating Commission Member (CCM) of the WCPFC since December 2013.</p> <p>Thus, the team concludes, the SG 60 is met.</p> <p>The assessment team recognizes that there are shortcomings in the management system, principally limitations in the implementation of catch data requirements, which have impacted the timely development of a harvest strategy for archipelagic waters. The team considers these to be limitations on the lack of organized and effective cooperation and implementation, which are not scored at the SG60 level in this PI. This interpretation is in line with the rationale for PI 3.1.1 a for the PT Citra Raja Ampat, Sorong Pole and Line skipjack and yellowfin tuna fishery.</p>

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		<p>There is evidence of instances of organization and cooperation between the multi-level frameworks (WCPFC, Indonesia’s national regulations, and FTUSA customary framework), such as the MoU between MDPI and the MMAF on collaboration of catch data. However, the organization and cooperation can’t be considered effective as required to deliver management outcomes consistent with MSC Principles 1 and 2, as required at the SG80 level. Indonesia’s non-compliance on several CMMs, including data collection and dissemination, indicate that the cooperation between the different national institutions and the WCPFC is not delivering the collection, sharing and dissemination of scientific data, and delivery of management actions, as required to meet SG80 (MSC Fisheries Standard v2.01 SA4.3.3.2).</p> <p>The framework for cooperation at the national level currently occurs via the FMA Fisheries Management Councils. The tuna fisheries co-management committee in Maluku province that is currently being developed might provide a seed for a suitable future framework for management organization and cooperation at Provincial and eventually local level where the small-scale tuna fishery under assessment is taken place. However, the FMA Fisheries Management Councils and Maluku province tuna fishery co-management council have not yet in effective operation to produce relevant management actions.</p> <p>The lack of an organized and effective cooperation between national entities (national and provincial management and FTUSA fishing associations) is also evidenced in the challenges faced by small-scale fisheries in the vessel registration, the slow progress on the development and a harvest strategy for archipelagic waters. Thus, the team concludes the SG80 is not met.</p>		
b	Resolution of disputes			
	Guided post	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective .
	Met?	(Y)	(Y)	(N)
	Justification	At the regional level, the WCPF Convention promotes peaceful settlement of dispute among members of the commission, including Indonesia, whether or not they are Parties to the Agreement (Article 31). Further as stated in the Annex I: Fishing Entities of the WCPF Convention that if a dispute concerning the interpretation or application of this Convention involving a fishing entity cannot be settled by agreement between the parties to the dispute, the dispute shall, at the request of either party to the dispute, be submitted to final and binding arbitration in accordance with the relevant rules of the Permanent Court of Arbitration. No report of legal disputes among members of WCPF Convention and or from entities that are not party to the convention addressed to the Convention. It is probably due to the transparency mechanism that the Convention has been promoting in its decision-making processes and other activities (see Article 21). Representatives from intergovernmental organizations and non-governmental organizations concerned with matters relevant to the implementation of this Convention are given the opportunity to participate in the meetings of the Commission and its subsidiary bodies as observers or otherwise as appropriate.		

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: Is capable of delivering sustainability in the UoA(s); and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework.		
		<p>Yellowfin hand-line tuna fishery in north Buru and north Ceram fished either from free set or Fish Aggregating Devices (FADs) in the waters nearby their villages. Most of potential disputes are raising from other small-scale fishers who come and fish in their fishing grounds, as no fishing grounds limitation applied yet to small-scale fishers. We found that there have been some ambiguities in actions taken by the fisheries surveillance and enforcement agencies when confronted with violations involving small-scale fishers. Taking preventive actions (such as mediation) that could prevent further conflict among small-scale fishers involved often is a better choice rather than a strict stand to prosecute the case in court (pers. comm. with enforcement agency officials at MMAF office in Jakarta, April 2019).</p> <p>No report yet on the legal disputes arising from implementation and/or interpretation of Indonesian Fisheries Law. If it were to happen, Indonesia already has a mechanism in place to adjudicate any legal disputes (such as contestation of legal articles) including that of Fisheries Law, through the Constitutional Court (<i>Mahkamah Konstitusi</i>). An individual/group of individual can challenge the interpretation of legal articles of any laws (including Fisheries Law) in Indonesia, whether they are in contradiction with Basic Constitution, and bring and contested the case at the Constitutional Court.</p> <p>SG60 is met because there is an effective legal system and mechanism in place for the resolution of legal disputes arising within the fishery.</p> <p>SG80 is met because there is transparent mechanism for the resolution of legal disputes which is effective in dealing with fisheries issues appropriate to the context of the UoA.</p> <p>SG100 is not met because the mechanism has not yet been tested.</p>		
c	Respect for rights			
Guidepost	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	
Met?	(Y)	(Y)	(N)	
Justification	The WCPF Convention, Part VIII recognizes the need to avoid adverse impacts on, and ensure access to fisheries by, subsistence, small-scale, and artisanal fishers and fish workers, as well as indigenous people in developing States Parties. This implies that the WCPF Convention provides mechanism to respect for rights including those created through customary framework by indigenous/customary communities capable of delivering fisheries sustainability consistent with the objectives of MSC Principles 1 and 2. At national level, Indonesian government recognizes the customary rights of traditional communities as stated in the Basic Constitution of the Republic of Indonesia, Article 18B: “The State recognizes and respects traditional communities along with their traditional customary rights as long as these remain in existence and are in accordance with the societal development and the principles of the Unitary State of the Republic of Indonesia, and shall be regulated by law. Further Indonesian government Law No.7/2016 concerning Protection and Empowerment of Fisher, Fish Farmer and Salt Farmer, article 25 explicitly			

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <p>Is capable of delivering sustainability in the UoA(s); and</p> <p>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</p> <p>Incorporates an appropriate dispute resolution framework.</p>
		<p>stated that government when enacting national marine spatial planning, including designating fishing zones/areas, should ensure access and provide living opportunities for small-scale and traditional fishers.</p> <p>At the provincial level, Maluku province, especially in the southern and southeastern parts, is well-known as one of the places in Indonesia where traditional fisheries management practices (known as sasi) is still implemented and well-respected. Although its efficacy has nowadays declined, the practices have been reported functioning to regulate utilization and protection of certain sedentary marine species but not for pelagic fisheries. Uniquely, although located within the same Maluku province area, this traditional fisheries management practice does not occur in the waters of north Buru north Seram.</p> <p>SG60 is met because the management system has a mechanism in place to generally respect the legal rights created by custom of people dependent on fishing for food or livelihood.</p> <p>SG80 is met because the management system has a mechanism to observe the legal rights created explicitly by custom of people dependent on fishing for food or livelihood.</p> <p>SG100 is not met because legal basis for rights created by custom of people dependent on fishing for food or livelihood are not yet fully codified within the fishery management system.</p>
References		<p>[WCPFC Convention 2000; Law No. 17/1985 concerning UNCLOS ratification; Law No.21/2009 concerning Ratification of implementation of the provisions of UNCLOS; Presidential Regulation No 61/2013 concerning Ratification of WCPFC convention; MMAF Ministerial Decision No. 18/2014 concerning Fisheries Management Areas of Indonesia; Fisheries Law No.31/2004 as amended through Law No. 45/2009 concerning Fisheries; Law No.23/2014 concerning Local Government; MMAF Regulation No.30/2012 concerning Capture Fisheries Business; Decision of Directorate General (DG) for Capture Fisheries No. 47/KEP-DJPT/2017 concerning Fisheries Manager for Indonesian FMAs; DKP Maluku 2019; Indonesian Basic Constitution (UUD 1945); Law No.7/2016 concerning Protection and Empowerment of Fisher]</p>
OVERALL PERFORMANCE INDICATOR SCORE:		75
CONDITION NUMBER (if relevant):		
Condition 3-1: By year four the client shall present evidence that there is an effective national legal [and/or customary framework] system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.		

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guidepost	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	(Y)	(Y)	(Y)
	Justification	<p>At the regional level, WCPF Convention has clearly identified individual members and organizations involved in the management process. Presently, members of this Regional Fisheries Management Organization (RFMO) include almost all major fishing nations in the WCPO: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Indonesia, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America, and Vanuatu. In addition, several fishing countries in the region participate as a cooperating non-members, including: Vietnam, Thailand, Ecuador, El Salvador, Nicaragua, Panama and Liberia, whereas American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, Wallis and Futuna are included as participating territories. Cooperating non-member might be invited to attend meetings of the Commission as observers and enjoy benefits from participation in the fishery so long as they comply with the conservation and management measures of the relevant fisheries stocks. The governing body of the Convention consisted of representatives from members, cooperating non-members and participating territories (collectively, CCMs). The Commission holds meetings every year and is chaired over by a Chairman and a Vice-Chairman, who are elected from the members. Function, roles and responsibilities of members are explicitly defined in WCPF Convention, articles 23 and 24.</p> <p>The work of the Commission is supported by four subsidiary bodies that meet in the months prior to the annual meeting. The Scientific Committee (SC) ensures that the Commission has the best available scientific information on which to consider appropriate conservation and management measures. The Technical and Compliance Committee (TCC) is the “enforcement” committee of the Commission that reviews members’ adherence to Commission decisions and monitors individual countries’ implementation of the conservation and management measures. The Northern Committee (NC) makes recommendations to the Commission on species that are mostly found in the Convention Area north of 20 degrees north. Finally, the Finance and Administration Committee gathers annually side-by-side with the Commission meeting and deliberates over the Commission’s budget.</p> <p>According to Law No. 23/2014 concerning Local Government, roles and responsibilities concerning management of capture fisheries in Indonesia are shared between central government (i.e. Ministry of Marine Affairs and Fisheries/MMAF), local (provincial) government and local (district) government. MMAF is responsible for management of fisheries-including fisheries law enforcement- in the waters beyond 12 NM up to EEZ, whereas local (provincial) government is responsible for management of fisheries – including fisheries law enforcement- within the waters of 12 NM. District government is only now responsible for empowerment programs for fishers residing within district areas. Both legislations mentioned above (e.g. law on local government and law of fisheries) have</p>		

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
		<p>also explicitly defined roles and responsibilities of MMAF and provincial governments in all aspects of fisheries management. MMAF for example as stated in Article 7 of Fisheries Law, is responsible to: make decision on total allowable catch for capture fisheries in all FMAs in consultation with stakeholders, approve fisheries management plan, declare certain fisheries management measures, such as periodic closure of fishing grounds, and issue fisheries management licenses for fishing vessels measured above 30 GT. Local (provincial) government, as stated in Law 23/2014 concerning Local Government is responsible to: issue fishing licenses for fishing vessels measured from 5-30 GT, and register fishing vessels measured from 5-30GT.</p> <p>As stated in the Law No. 31/2004 amended through Law No.45/2009 concerning Fisheries, Indonesian government envisions “Fisheries Management Areas (FMA)” as a geographical unit of its fisheries governance and management. Through Ministry of Marine Affairs and Fisheries (MMAF) Ministerial Decision No. 18/2014 concerning Fisheries Management Areas of Indonesia, Indonesian waters have been divided into 11 (eleven) FMAs, an ecological unit used to develop fisheries management plans and programs. Also determination of fisheries status, fishing capacity and fishing licensing allocation are nowadays conducted/defined per FMAs. Consultative mechanisms to ensure facilitation of stakeholder meetings and consultations to address fisheries management issues within each FMA, known as Fisheries Management Councils have been established through Decision of Directorate General (DG) for Capture Fisheries No. 47/KEP-DJPT/2017 concerning Fisheries Manager for Indonesian FMAs. The structure and roles, including organization and individual member of this consultative platforms were explicitly defined in that said Decision.</p> <p>Other national government agencies that present and interact with fisheries offices in central/provincial/district areas in relation to capture fisheries management and safety at sea include enforcement agencies such as: Police Department (especially Water Policy unit), Navy, coast guard (Badan Keamanan Laut/Bakamla) and surveillance unit under the Directorate General of Surveillance for Marine and Fisheries Resources of MMAF. Also, other important agency is Ministry of Transportation – that currently still holds the authority to measure vessel/boat (including fishing vessel) - which is a prerequisite for obtaining fishing boat registration certificate. Also, both Ministry of Forestry and Living Environment and MMAF currently shares the responsibility concerning management of Endangered, Threatened and Protected (ETP) species in Indonesia. Research agencies and universities coordinated under the Ministry of Research, Technology and Higher Education such as: Indonesian Science Institute as well as national universities are important agencies that may have important research/information contributing to effective and successful management of the target fishery. Finally, National Commission on Fisheries Resource Assessment (Komisi Nasional Pengkajian Sumberdaya Ikan/ Komnas Kajiskan), a commission established as per mandate of Fisheries Law to provide scientific advice to Minister of Marine Affairs and Fisheries regarding Indonesian fisheries resource status. Members of this Commission represent among others fisheries experts, academia, and member of fishing associations throughout Indonesia.</p> <p>SG 60, 80 and 100 are met, as organizations and individuals involved in fisheries management process have been identified whom their functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.</p>		
b	Consultation processes			
	Guidepost	The management system includes consultation processes that obtain relevant information from the main affected parties,	The management system includes consultation processes that regularly seek and accept relevant information, including local	The management system includes consultation processes that regularly seek and accept relevant information, including local

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
		including local knowledge, to inform the management system.	knowledge. The management system demonstrates consideration of the information obtained.	knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.
	Met?	(Y)	(Y)	(N)
	Justification	<p>The consultation mechanisms at WCPFC were regularly accommodated through annual meetings/sessions of the Convention and its subsidiary bodies (committees) such as Scientific Committee and Technical and Compliance Committee meetings. The inputs and feedbacks, including local knowledge received from its member countries, including Indonesia and designated specialist working groups during consultations, informed the decision making process at the WCPFC. The fisheries management measures as depicted in the CMM for example have considered information obtained from the main affected parties (its member countries). The scientific reports that describes type of information used such as annual fisheries information (annual catch, number of vessels, etc.) obtained through consultation processes have been used to inform CMMs, but the details on how the information is used or rejected is not always clear.</p> <p>In Indonesia, fisheries consultation is part of a formal processes within the steps of fisheries management as stated in Article 1(7) of Law No.31/2004 concerning Fisheries. As demonstrated from the recent adoption of a document on ‘Framework for harvest strategies for tropical tuna in archipelagic waters of Indonesia’, stakeholder consultation processes have been an effective mean to gather comprehensive inputs and feedback including local knowledge to inform the development of the document. A total of 16 (sixteen) stakeholder consultation meetings (including technical meetings) and workshops from the period of 2014-2018 were regularly conducted to solicit inputs from all relevant stakeholders in Indonesia, including local government, fisheries associations, NGOs, and international experts on tuna management (harvest strategy). An observation from the conclusion in the minutes of one of the consultation meetings (the first stakeholder workshop) conducted on March 2015 in Bogor indicated that inputs/feedback received from participants were considered equally important. These inputs were recorded and brought up to inform the follow-up discussion in the next consultation sessions. Nevertheless, how all inputs/feedback are used or filtered/rejected during the consultation meetings are not clearly defined in the meeting minutes.</p> <p>At the fishery-specific management level, to facilitate an effective tuna fisheries management consultation within Maluku province, a mechanism known as ‘fisheries co-management committee’ was just recently established, chaired by the head of fisheries agency at Maluku provincial government and facilitated by national NGO: Masyarakat dan Perikanan Indonesia/MDPI. This Committee is scheduled to meet twice a year. The yellowfin hand-line tuna fisheries associations in north Buru and north Seram (the UoA) is well-represented within this co-management committee as well as regularly attending the meetings.</p> <p>SG 60 is met as the management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge.</p> <p>SG 80 is met as consultation is conducted regularly to seek and accept inputs.</p> <p>SG 100 is not met as no evidence that explain how information/inputs are used or not used.</p>		
c	Participation			
	Guidepost		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>		
				parties to be involved, and facilitates their effective engagement.
	Met?		(Y)	(Y)
	Justification	<p>The governance structure of WCPFC, in addition to its members provides opportunity for the participation of non-member and territories and particularly Cooperating non-members. It also allows observers from other interested parties, including NGOs, upon request and subject to the concurrence of the members of the Commission and to the rules of procedure relating to the granting of observer status, to participate in the Convention and its subsidiary bodies meetings, including Scientific Committee and Technical and Compliance Committee meetings. All relevant Small Island Developing States are members through the participation of the Pacific Islands Forum Fisheries Agency or cooperating non-members. Logistic and financial supports are provided to attend the commission and related meetings to ensure meaningful participation and effective engagement in the meetings.</p> <p>At national level, regular fisheries consultation meetings were held at FMA level. Recently, a consultative platform at this FMA level known as Fisheries Management Council (FMC) has recently been announced to replace the previous arrangement known as Forum Koordinasi Pengelolaan dan Pemanfaatan Sumber daya Ikan (FKPPS) (Coordination forum for management and utilization of fisheries resources). The fisheries under assessment (UoA) falls within FMA 715 that encompasses 6 (six) different provinces namely: North Sulawesi, Gorontalo, Central Sulawesi, Maluku, North Maluku and West Papua. The FMC of FMA 715 is chaired by the head of Ambon fishing port in Maluku province, supported by secretariat, working groups and panels (scientific and consultative panels). Members of the working groups and panels consist of representation of provincial governments belongs to FMA 715, fisheries experts at local universities, fishing associations, NGOs and traditional/adat/local communities. The logistic and financial supports for participation of invited members in the consultation meetings are provided by government to ensure their attendance and effective participation in the meetings.</p> <p>At provincial level (Maluku province), the tuna fisheries co-management committee chaired by the head of the fisheries agency at provincial level provides mechanism for participatory decision making regarding tuna fisheries management in Maluku provincial waters, including those in north Buru and north Seram, the UoA. They meet twice a year and the latest meeting was in May 2019. Member of this co-management committee consist of representation of government agencies, local fisher associations (including that in Buru and Seram (the UoA), fish suppliers, fisheries industry, and NGOs. The participation of fisher associations in the consultation meetings are often supported by funding from NGOs.</p> <p>SG 80 and SG 100 are met as the consultation process shows opportunity and encouragement for all interested and affected parties to be involved and facilitates their effective engagement</p>		
References		<p>[WCPFC Convention 2000; minutes of various meetings and stakeholder workshops on tuna harvest strategy in 2014-2018; Law No. 23/2014 concerning Local Government; Law No. 31/2004 as amended through Law No.45/2009 concerning Fisheries; Ministerial Decision No. 18/2014 concerning Fisheries Management Areas of Indonesia; Decision of Directorate General for Capture Fisheries No. 47/KEP-DJPT/2017 concerning Fisheries Manager for Indonesian FMAs]</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guided post	Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.
	Met?	(Y)	(Y)	(Partial)
	Justification	<p>At the regional level, WCPFC Convention Article 2 stated explicitly that the objective of the Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement. Further, Article 5 of the Convention defines the principles and measures for conservation and management that for example as stated in para (c) apply the precautionary approach in accordance with this Convention and all relevant internationally agreed standards and recommended practices and procedures. Article 10(c) defines functions of the Commissions ‘to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened’, that are in accordance with MSC principles and objectives especially for non-target species and species dependent on or associated with the target stocks. These explicit legal statements are reflected in the decisions made by the Commission such as those in various CMMs documents and Commission reports. However, not all precautionary approaches have been successfully applied by WCPFC Convention to all its managed stock. Historically, WCPFC has been struggling with this precautionary approach especially for big-eye tuna management.</p> <p>In Indonesia, the long-term objectives of fisheries management is stated in Article 3 of Law No.31/2004 concerning Fisheries among others: “to ensure sustainability of fisheries resources....”. The implementation of precautionary approach is also recognized as stated in the explanation section of the fisheries law. Specific long term (2016-2021) objectives and targets of fisheries management within the FMA 715 where UoA is located have also been adopted through Ministerial Decision No.82/2016 concerning Fisheries Management Plan for Fisheries Management Area (FMA) 715.</p> <p>The stated long-term goals and five year targets (2016-2021) for fisheries management at FMA 715, which are consistent with MSC standard and precautionary approach are as follow:</p> <ol style="list-style-type: none"> 1. To achieve sustainable management of fishes and their habitats. 2. To improve social and economic benefits from sustainable fisheries 3. To improve active participation and compliance of stakeholders through collaborative management <p>The five years (2016-2021) fisheries management targets of FMA 715 are:</p> <ol style="list-style-type: none"> 1. The use of legal fishing practices in coral reef fisheries increased by 50% from the baseline in 2016. 2. The level of utilization of small-pelagic fishes achieved sustainable level. 3. Areas of fisheries utilization within FMA 715 are developed and available. 4. Conflicts between migrant fishers (nelayan andon) with local fishers are eliminated. 5. Local wisdom in fisheries management are practiced and strengthened to support achieving sustainable fisheries. 6. Regular meetings of fisheries managers within the FMA 715, conducted at least twice in a year. 7. Fisheries Management Council for FMA 715 is established. 8. Surveillance activities in fisheries management are improved 9. Law enforcement in fisheries management is improved. 		

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.
		<p>10. Fishing Aggregating Devices (FADs) are well-managed in accordance with applicable laws.</p> <p>Although explicit goals and targets for fisheries management at FMA 715 have been set as listed above, the precautionary approach for setting such targets for most fisheries in the FMA 715 are not explicitly required in their related management policies.</p> <p>SG 60 and SG 80 are met as both at regional and national level, there are clear stated long-term objectives that guide decision-making, consistent with MSC fisheries standard and application of the precautionary approach.</p> <p>SG 100 is only partially met as no evidence that clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.</p>
References		[WCPFC Convention 2000; Law No.31/2004 concerning Fisheries; Ministerial Decision No.82/2016 concerning Fisheries Management Plan for Fisheries Management Area (FMA) 715]
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant): Click here to enter text.		

Evaluation Table for PI 3.2.1 – Fishery-specific objectives

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
Scoring Issue	SG 60	SG 80	SG 100
a	Objectives		
Guided post	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.
Met?	(Y)	(Partial)	(N)
Justification	<p>In various CMMs documents, WCPFC defines short and long-term objectives for target fish stocks to achieve outcomes that are consistent with MSC Principle 1 and 2, including that to minimize by-catch in the target fisheries. However, some of these objectives are not well defined enough to be operational and measurable. To date WCPFC for example has not yet adopted a target reference point for yellowfin and big-eye tuna.</p> <p>Indonesia has just recently produced an interim harvest strategy for tropical tuna in its archipelagic waters. A management objective for tropical tuna management was defined consistent with MSC Principle 1 and 2 as "to ensure the sustainability of yellowfin tuna, big-eye tuna and skipjack tuna resources through harvest strategy implementation". An operational objective was also set out as "to maintain spawning stock biomass (SSB) above the limit reference point (LRP) of 0.2 of the unfished level with the probability of 90%". Nevertheless, a target reference point has not yet been set pending careful consideration of its implication for social and economic objectives for the fishery. The options for tuna fisheries management measures were also proposed to include:</p> <ol style="list-style-type: none"> Limit on use of Fish Aggregating Device. Spatial closure (of important spawning or nursery grounds) and temporal closure (during important events, such as spawning). Number of fishing days (per gear, for semi industrial and industrial vessels). Number of vessels— limited entry (per gear; for semi industrial and industrial vessels through licensing, permits, taxing, and royalties). Total Allowable Catch (TAC) limits per Fishery Management Area (FMA). <p>Indonesia has also adopted fisheries management plan for tuna, skipjack tuna and neritic tuna through Decree of Minister of Marine Affairs and Fisheries No. 07/KEPMEN-KP/2015. Long-term management objectives were defined followed by specific targets set for each FMA. The following are the stated 3 (three) long-term objectives for tuna, skipjack tuna and neritic tuna management in Indonesia and the 5-year (2015-2020) targets set out for FMA 715:</p> <p>1. To achieve sustainable management of tuna, skipjack tuna and neritic tuna and their related-ecosystems. Targets to be accomplished in FMA 715 are:</p> <ol style="list-style-type: none"> Estimated potency and level of exploitation for tuna and skipjack tuna is fully (100%) available; Total allowable catch (TAC) estimate or catch limit for tuna and skipjack tuna is fully (100%) available; Harvest control rules and key indicators for tuna and skipjack tuna stocks is fully (100%) available; Climate change impacts mitigation study for tuna and skipjack tuna stocks is fully (100%) available; Assessment on the use of brach-line nylon in tuna long-line fishery is fully conducted; 		

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.
	<p>f) Tuna fishery risk-based assessment concerning by-catch and Ecologically-related species (ERS) for each fishing gears is completed;</p> <p>g) Assessment on the restriction of fishing with purse-seine in FAD is completed;</p> <p>h) Data on estimated potency and level of exploitation of by-catch is fully (100%) available</p> <p>2. To improve compliance on implementation of law and regulations concerning the capture of tuna and skipjack tuna, by-catch and Ecologically-related species (ERS). Targets to be accomplished in FMA 715 are:</p> <p>a) Within 2 year, a system to record all authorized (licensed) tuna and skipjack tuna fishing vessels within Indonesian archipelagic and territorial waters is available;</p> <p>b) Destructive fishing practices applied in tuna and skipjack tuna fishing are fully (100%) eliminated within 5 years;</p> <p>c) The catches of dolphins are fully eliminated within 5 years;</p> <p>d) Regulations to ban the holding of by-catch on board and landing of by-catch is fully in operation in 5 years.</p> <p>e) Tools to mitigate the ERS is available on board in 5 years' time;</p> <p>f) Meetings involving scientist, fisheries managers and stakeholders are conducted annually;</p> <p>g) Compliance on implementation of capture fisheries log books is improved by 40% within 5 year' time.</p> <p>3. To meet market requirements for tuna and skipjack tuna. Targets to be accomplished in FMA 715 are:</p> <p>a) Supply chains system documented for tuna and skipjack tuna from Indonesian waters within 3 years' time.</p> <p>The small-scale hand-line tuna fisheries associations (FAs) in north Buru and north Seram (the UoA) have been certified for Fair Trade (FT) Capture Fisheries certification since 2014. To comply with the FT Capture Fisheries certification, these FAs have already in place among others (a) data collection and management systems, including records of fishing trips, (b) strategy to ensure that fishers member of FAs adhere to laws, especially that concerning Endangered, Threatened and Protected (ETP) species, and prohibition of the use of destructive fishing practices, and (c) strategy to minimize impacts of fishing gears to the habitats. In addition, the members of the above FAs have regularly implemented data collection on primary species, secondary species and by-catch and documented any Endangered, Threatened and Protected (ETP) species such as turtles, sharks, seabirds unintentionally caught in their gears. These FAs have also developed simple management plans for small-scale hand-line tuna fisheries in north Buru and north Seram (the UoA areas) that include information short term objectives such as fishery and ecosystem data that must be collected, actions to be taken to ensure compliance with FT standard and registration of small-scale hand-line tuna vessels at the local fisheries office, Preliminary data analysis on the fishing grounds for small-scale yellowfin tuna fishers in north Buru and north Seram, the UoA, indicated increased trend of fishing from FADs compared to that of free set. These fishers said that they prefer to fish in the FAD than that of free setting, as it provides them with much better certainty to catch fish (personal communication with fishers' member of Fair Trade FAs in north Buru, April 2019). The FADs management would therefore be an important aspect of the fishery that would need close attention (regular monitoring and analysis) for in the near future which should be included as part of the short and long term objectives for these fisheries-specific management. Though the Code of Conduct of <i>Asosiasi Perikanan Pole & Line dan Handline Indonesia (AP2HI)</i> outlines guidelines for FAD management, these are not explicitly part of the UoA management system.</p>

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.
		<p>SG 60 is met as short and long-term objectives consistent with outcomes of MSC's Principle 1 and 2 are implicit within the fishery-specific management system.</p> <p>SG 80 is partially met, as some component of short term fisheries management objectives (e.g.: landing data collection and vessel registration), consistent with outcomes of MSC's Principle 1 and 2 are explicit within the fishery-specific management system. No evidence of clear long-term objectives was presented, especially those relating to FADs management.</p> <p>A condition is raised</p>
References		[Fair Trade USA Capture Fisheries Standard, 2014; FT USA Coral Triangle Processor Audit Reports, 2019; Framework for Harvest Strategies for Tropical Tuna in Archipelagic Waters of Indonesian; Decree of Minister of Marine Affairs and Fisheries No. 07/KEPMEN-KP/2015 concerning Fisheries Management Plan for Tuna, Skipjack Tuna and Neritic Tuna]
OVERALL PERFORMANCE INDICATOR SCORE:		70
CONDITION NUMBER (if relevant): Condition: 3-2: By year four the client shall present evidence that short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.		

Evaluation Table for PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guidepost	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	(Y)	(Y)	
	Justification	<p>The WCPF Convention promotes transparency in decision making process and as a general rule, it shall be taken by consensus. Several decisions, such as allocation of fishing rights, must be carried out using consensus. As described under Article 20 of the Convention, if all efforts to reach consensus have been exhausted, decisions on questions of substance can be passed by a vote of three-fourths of the members of the Commission voting and present. This must include a three-fourths majority of the members of the South Pacific Forum Fisheries Agency (SPFFA) present and voting and a three-fourths majority of the non-members of the SPFFA present and voting. Votes on questions of procedure only require a majority approval of the members of the Commission present and voting. Decision making processes, including the basic for making decisions, decision results/outcomes are recorded in the records of Commission sessions that are publicly available. The Convention decisions relating to management of target fisheries are stated in the Conservation and Management Measures (CMMs) documents which are all binding. All management measures apply equally inside EEZ and on high seas.</p> <p>At national level, the fisheries decision making process that result in measures and strategies to achieve the fishery-specific objectives are established and taken place within the Directorate General of Capture Fisheries (DGCF) of MMAF and informed by the results of various research, monitoring and evaluation lead by the Agency for Research and Marine and Fisheries Human Resource Development of MMAF. This agency is at the same level as that of DGCF (both are chaired by officials of the same rank: echelon 1) with mandates for fisheries research and development. MMAF is also benefitting from the research produced by other relevant both national and international research institutions. As recently observed with the decision making processes to produce the interim harvest strategy for tropical tuna in Indonesian archipelagic waters, the fisheries decision making process taken place at DGCF of MMAF includes identification of issues (as informed by research/monitoring findings and/or observation), series of public consultations through meetings/workshops/consultations involving stakeholders such as Fisheries Management Council (FMCs) of FMAs, fisheries associations and industry, and experts, and formalized final decision. Depending on the extent of the matters, the decision might be signed off by the Director of Directorate General for Capture Fisheries or the Minister of MMAF.</p> <p>As for the hand-line yellowfin tuna fishery in Buru and Seram under assessment, the decision-making process that results in measures and strategies to achieve the fishery objectives has taken place through a mechanism implemented by the Fishers Associations (FAs) under the auspices of Fair Trade USA Capture Fisheries certification. The MDPI plays important facilitating roles to ensure that any concerns arisen that could potentially impacting on fisheries sustainability (including impact on habitat destructions and endangered species) are immediately addressed at relevant different levels of the FA's meetings (i.e. Fair Trade group meeting and Fair Trade Committee meeting), The Fair Trade requirement to have all small-scale fishing boats operated by the fisher associations registered and the needs to properly report/collect data on fishers' landings for example were discussed and agreed on at those different levels of FA meetings mentioned above. The MDPI then was able to carry the information (report on the results of FA meetings) including the challenges encountered in the field to the government officials at provincial and national level in Jakarta. An example of the challenges to get the small-scale boat</p>		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		registered is the availability of the certified officials in the field qualified to perform vessel inspection and measurement. This has caused long- delayed of the small-scale vessels registration processes. SG 60 and SG 80 are met as there are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.		
b		Responsiveness of decision-making processes		
Guidepost	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	
Met?	(Y)	(Y)	(N)	
Justification	<p>Decision-making processes at WCPFC responds to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, through its Commission and committees (SC and TCC) in transparent, timely and adaptive manners as reflected for example in various CMMs documents and their amendments. For example, it was recognized by the WCPFC Scientific Committee that the Yellowfin stock appears not to be experiencing overfishing and is not in an overfished condition and the current spawning biomass levels should be maintained. WCPFC responses to this by adopting a limit reference point for Yellowfin of 20% of the estimated recent average spawning biomass in the absence of fishing (CMM 2018-01). Further an interim objective for Yellowfin tuna was set namely to maintain the spawning biomass depletion ratio (SB/SB_{F=0}) at or above the average SB/SB_{F=0} for 2012-2015. It was further stated that the Commission shall review and revise that aim at its 2019 annual session in light of advice from the Scientific Committee (CMM 2018-01). WCPFC however, appeared not to address yet matters concerning biodiversity protection – as lack of data for example on ETP species (e.g. seabirds, turtles, and sharks) are too profound that prevent the Convention to make any sort of general statement on these non-target species.</p> <p>At national level, it was also observed that decision-making processes have responded to serious and other important issues identified in relevant research, monitoring, evaluation and consultation in transparent and adaptive manners. For example, the recent Minister of Marine Affairs and Fisheries Regulation No. 4/PERMEN-KP/2015 concerning fishing moratorium in FMA 714 were informed by the results of many years research findings that those areas are breeding and spawning grounds for Yellowfin tuna (<i>Thunnus albacares</i>) during the months of October-December. These findings were then consulted through series of meetings/workshops/consultation with Fisheries Management Council (FMC) of FMA 714, and other relevant stakeholders, such as fisheries associations and experts before a decision is made to seasonally close the areas from fishing. Prior to making this decision, MMAF has considered its wider implications, including those for fishing vessels that are currently holding valid fishing license in FMA 714. However, there are still some other fisheries issues that already been identified but have not yet been successfully responded such as matters relating to fish aggregating device (FAD) management.</p> <p>At the fishery-specific yellowfin hand-line tuna fishery in north Buru and north Seram the decision making mechanisms created under the auspices of Fair Trade (FT) certification has responded to serious and other important issues as identified in relevant research, monitoring, evaluation and consultation in adaptive and timely manner. Through the FT certification, the fisher associations (FAs) are regularly evaluated (audited) by an independent certified auditor to ensure that they have responded (taking actions) on the so-called ‘Corrective Action Plans (CAPs)’ to address the findings (non-conformities) during</p>			

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p>the previous audits. One of the components that these FAs was audited for is the 'Resource Management' (RM) that reports on compliance over among others: data collection, fishing trip records, fisheries management plan and rules, and fishing impacts on habitats as set by the Fair Trade Capture Fisheries Standard. The MDPI as the facilitator who also has set up field offices in north Buru and north Seram help to facilitate the FAs to implement the actions as stated in the CAPs in a timely manner,</p> <p>SG 60 and SG 80 are met as decision making process respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>SG 100 is not met as both regional, national and fishery-specific level processes do not clearly respond to all issues in a timely transparent and adaptive manner.</p>		
c	Use of precautionary approach			
	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		(Y)	
	Justification	<p>At WCPFC the use of precautionary approach is central to its many decisions including that of CMMs. In the preamble of the Convention, it was stated that effective conservation and management measures require the application of the precautionary approach and the best scientific information available. It is further elaborated under Article 6 and Annex II of the Convention. Article 6(2) stated that "members of the Commission shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures". Result of external independent performance review commended WCPFC as one of the first RFMOs that formalize the precautionary principle in their basic instruments and management decisions. It was implemented through developing species-specific decision-making formulas for different stocks and species, referencing their estimated spawning biomass, reproduction rate, and F-MSY. At national level, the implementation of precautionary approach is also recognized as stated in the explanation section of the Law No. 31/2004 concerning Fisheries. The recent development of Interim harvest strategy for tropical tuna in Indonesian archipelagic waters has applied that precautionary principles in setting the limit reference point (LRP) for example. It is further stated in the document that "the appropriateness of this limit reference point will be examined as part of the harvest strategy testing and selection process". This indicated that in the exercise to define the LRP above has taken into consideration the best available information that is uncertain, unreliable or inadequate. At the fishery-specific level in north Buru and north Seram, member of fishers associations with support from MDPI has used this precautionary approach in most of their decision making processes particularly in relation to defining and implementing the Corrective Action Plans (CAPs) of the Resource Management component as described under PI 3.2.2(b) above. There are still lot of uncertainties and incomplete information concerning this hand-line tuna fishery including for example their migration paths and population dynamics (such as life history parameters, etc.). But these do not prevent the actions taken to address the identified problems based on the best available information/knowledge.</p> <p>SG 80 is met as the fisheries decision-making processes have use the precautionary approach and are based on best available information.</p>		
d	Accountability and transparency of management system and decision-making process			
	Guidepost	Some information on the fishery's performance and	Information on the fishery's performance and	Formal reporting to all interested stakeholders

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		management action is generally available on request to stakeholders.	management action is available on request , and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	(Y)	(Y)	(N)
	Justification	<p>At the regional level information and recommendations from research, monitoring, evaluation and performance review are published formally, including various binding decisions (e.g. CMMs) and reports (e.g. plenary session and annual reports). Member countries provided annual report: Annual report (Part 1): Information on Fisheries, Research and Statistics to the Commission, depicting annual fisheries information on among others annual landings and number and size of fishing fleets, -and other relevant fisheries information-, operating within the member country's territorial seas and EEZ's part of the WCP ocean. The WCPFC SC and TCC papers and reports are available on-line through the WCPF web site that provide high level access and transparency for publics, describing how scientific information has informed decisions on conservation and management measures (CMMs). Nevertheless, it was not always clear whether all reports posted in the WCPFC website have been comprehensive covering all decisions associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. Some decisions taken might have been the results of 'negotiations with trade off' which might not be fully exposed as it could undermine future effective collaboration.</p> <p>At national level data on fisheries, including tuna landings throughout Indonesia is available on-line at MMAF website and accessible to public. These data were collected by government officials through various means including port samplings, fisheries surveys (research) and records from fishing log-books mandatory for all fishing boats above 5 GT. Type of information recorded in the log book including information on: fishing vessels, fishing gears, fishing operation and catch. These landings data along with others supplementary information have been used by the national committee on fisheries stock assessment to determine the level of exploitation (the status) of the fishery nationwide. Based on this national committee's recommendations, the Minister of MMAF then declare the status of Indonesian fisheries. In addition, information on fishing vessel allocation and number of fishing vessel licenses granted, especially for those fishing vessels measured above 30 GT per FMA, are also available on-line at MMAF website and accessible to public. However, it was not always clear (information was not publicly available) for example on how Minister of Marine Affairs and Fisheries progress the recommendations from the national committee on stock assessment to declare the status of Indonesian fisheries. There have recently been some academic debate on the recently declared Indonesian fisheries stock status that significantly increase from the previous years that might have been due to different analysis and interpretation of available data and information on the fisheries.</p> <p>As for the specific yellowfin tuna fisheries under assessment, the MDPI has created an on-line platform (www.ifish.id) to store important data and information for fisheries management that have been regularly collected such as number of fishing boats involved in the fishery, number of trips, fishing grounds, and size of capture and quantity of landed primary species (yellowfin), secondary species (including species used for baits) and by-</p>		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p>catches. Details information and results of analysis on the fishing fleet structure and size of capture for example, are available upon request.</p> <p>SG 60 and SG 80 are met as information on the fishery’s performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> <p>SG 100 is not met as formal reporting to all interested stakeholders do not provide comprehensive information on the fishery’s performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>		
e	Approach to disputes			
	Guided post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	(Y)	(Y)	(N)
	Justification	<p>There is no report of fisheries-related court case (judicial dispute nor international dispute) involving WCPFC up until now. There is also no indication of WCPFC to disrespect or defy the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery. Any potential legal challenges (disputes) with its members especially in relation to resource allocation, were resolved through various WCPFC meetings. WCPFC avoid dispute on any fisheries management measures by incorporating fisheries-related decisions into CMMs – a legal and binding document to WCPFC and all its members. At national level, no legal dispute filed in the court has been reported for tuna fishery. In Indonesia, tuna fishing industry and its stakeholders have organized themselves into various different associations such as Indonesian Tuna Long-line Association (ATLI), Indonesian Tuna Association (ASTUIN), Pole and Line and Hand-line Fisheries Association (AP2HI), and Indonesian Tuna Commission (KTI). These tuna fishery associations and commission might have been an effective platform for industry to reach out to government and vice versa to avoid any potential dispute concerning management of this fishery.</p> <p>There have been several reports on legal challenges made against MMAF in relation to its anti-IUU fishing policies, such as moratorium for fishing vessels, especially for ex foreign fishing vessel and sinking of IUU fishing vessels. MMAF has attempted to comply in a timely fashion with the judicial decision, including that of sinking the IUU fishing vessels. No report of legal disputes happened for the yellowfin tuna fishery-specific under assessment in north Buru and north Seram. With the presence of Fair Trade Fishers association and considering that they are regularly audited for Fair Trade USA Capture Fisheries certification, any non-compliances, including those arisen from potential legal disputes would need to be addressed in a timely manner. The yellowfin hand-line tuna Fisher Association in north Buru and north Seram also have their rules to resolve potential disputes involving their members as written in the FAs establishment deeds.</p> <p>SG 60 and SG 80 are met as the management system, where relevant, is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.</p>		

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.	
		SG 100 is not met as no evidence of proactive acts by the management system to avoid legal disputes.
References	Fair Trade USA Capture Fisheries Standard, 2014; FT USA Coral Triangle Processor Audit Reports, 2019; WCPFC Convention 2000; Szigeti and Lugten, 2015; Ministerial Regulation No.2/2015 concerning the ban of the use of mini trawls ; Ministerial Regulation No. 71/2016 concerning fishing lanes (zones)	
OVERALL PERFORMANCE INDICATOR SCORE:		80
CONDITION NUMBER (if relevant): Click here to enter text.		

Evaluation Table for PI 3.2.3 – Compliance and enforcement

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
Scoring Issue	SG 60	SG 80	SG 100
a	MCS implementation		
Guidepost	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
Met?	(Y)	(Y)	(N)
Justification	<p>WCPFC aims to ensure compliance through VMS, IUU vessel listing, port state controls, observers, logbooks and transshipment monitoring. As most of the enforcement take place within the member states, WCPFC focus is mainly to control fishing at high seas, solidifying the exercise of control by Members, Cooperating Nonmembers and Participating Territories (CCM), and monitoring CCM obligations throughout the ranges of WCPFC CMMs. Compliance failures by vessels are determined through IUU listing procedure and compliance failures by CCMs are addressed through Commission's compliance monitoring scheme (CMM 2014-07).</p> <p>In Indonesia, fisheries-related monitoring, control and surveillance is implemented by Directorate General of Surveillance and Control on Marine and Fisheries Resources (PSDKP) of the Ministry of Marine Affairs and Fisheries (MMAF) for fishing vessels measured above 30 GT and operates in the waters from beyond 12 nautical miles and by provincial governments for fishing vessels less than or equal to 30 GT that operates in the waters from 0-12 nautical miles. The fishing boat inspections are grouped under three categories namely: inspection of documents completeness (such as fishing license document, fishing log books) prior to departure, inspection of technical aspects of boat at fishing ports (e.g. type of gears used, VMS availability) and inspection of boats when fishing at sea. If all administrative and technical aspects are met, then PSDKP will issue fishing boat sea worthiness letter (Surat Laik Operasi /SLO) required to be brought along on board throughout fishing operation time at sea. This sea worthiness letter is required for all fishing boats when conducting fishing except for small-scale fishing boats. Also, fishing vessels are obligated to fill in fishing log book (except for small-scale fishers) and install Fishing Vessel Monitoring System (except for fishing boats measured less than or equal to 30 GT). Violations of these may result in denial/refusal of the sea worthiness letter (Surat Laik Operasi /SLO). However, monitoring, control and surveillance by provincial governments in the waters within their jurisdiction (0-12 NM) has not yet been comprehensive. Most provincial governments still have not had ample resources to implement regular fisheries surveillance.</p> <p>Besides PSDKP, other government agencies involved in marine surveillance and enforcement include Navy, Marine water Police, and coast guard (Indonesia Maritime Security Agency: Badan Keamanan Laut /Bakamla). Indonesian government also promotes active engagements of communities in coastal/marine surveillance, through the community group surveillance (Kelompok Pengawas Masyarakat /Pokwasmas) often supported by NGOs and under a close supervision of government enforcement agencies such as police /marine water police agency. Within the FMA 715, PSDKP has its present (staff and large patrol boats) in Ambon (capital of Maluku province, 1 patrol boat), Bitung (North Sulawesi province, 4 patrol boats) and Tual (southeastern part of Maluku province, 2 patrol boats).</p> <p>At local level, Fishers Associations in north Buru and north Seram, the UoA, has established MCS mechanism to ensure the compliance of the FAs members on rules and regulations, including to fill in the logbook to record the catch. The head and secretary of the FA for</p>		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		<p>example is also responsible to monitor, remind and reprimand the members who are not comply with logbook data recording. Should incompliance by members continues to happen for example, then the head or Secretary of the FA will call for FA meeting to discuss about stronger corrective actions to be taken with approval from all members of the FA. The procedures to enforce the FAs rules are written in the FAs establishment deeds.</p> <p>SG 60 and SG 80 are met as monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures or rules.</p> <p>SG 100 is not met as no evidence of comprehensive monitoring, control and surveillance system implemented in the fishery that demonstrated consistent ability to enforce relevant management measures or rules.</p>		
b	Sanctions			
	Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	(Y)	(Y)	(N)
	Justification	<p>At regional level, although CMMs are set by WCPFC, it is the responsibility of the member state to conduct surveillance, monitoring and enforcement. Compliance failures by vessels are determined through IUU listing procedure and compliance failures by CCMs are addressed through Commission’s compliance monitoring scheme (CMM 2014-07). No WCPFC sanction has been reported to date, against non-compliance of its member states. Sanctions are applied only to fishing entities detected to conduct IUU fishing in the WCP Ocean. In this case, WCPFC notifies flag state of non-compliance vessels, in which the flag states order the vessel to withdraw from the Commission area. These sanctions appear to be consistently applied.</p> <p>Indonesia has established specific fishery court that adjudicate any fisheries related crimes, as per mandate of Law no.31/2004 concerning Fisheries. The sanctions for fisheries non-compliance and crimes are also stated in the Law no.31/2004 and its amendment Law no.45/2009 concerning Fisheries. Ranges of penalties for fisheries crimes include imprisonment (of up to 10 years in jail), fiscal penalties (ranging from hundreds million rupiah up to 20 billion rupiah), and demolition of illegal fishing gears and sinking of IUU fishing vessel. Sanctions for non-compliance ranges from suspension or cancellation of licenses, refusal for new licenses, and removal of the fleet from the fishery. There have been reported several cases that were successfully prosecuted/executed and convicted for both jail term and fiscal penalties, as well as suspension of licenses. These sanctions are consistently applied and thought to provide effective deterrence. Nevertheless, the continue occurrence of IUU fishing especially by foreign fishing fleets indicated that the sanctions have not yet demonstrably provide effective deterrence.</p> <p>The Fishers Associations (FAs) in north Buru and north Seram, the UoA, have in place mechanism to provide sanctions for members of the FAs who are not comply with FA’s rules and regulation which are written in the FAs establishment deeds. Any violations will be penalized depending on the degree of the violations. The decision making mechanism to define the level of violation is based on consensus reached in the FA group meetings involving all members of the group. The worse-case scenario could include dismissal from the FAs. According to one of the head of the FA in north Buru interviewed in March 2019, few members of the FAs have been dismissed for example due to their repeated non-compliance to fill in their landing data in their logbooks.</p> <p>SG 60 and SG 80 are met as sanctions to deal with non-compliance exist and consistently applied and thought to provide effective deterrence.</p>		

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	SG 100 is not met as no evidence of sanctions that are consistently applied and demonstrably provide effective deterrence.		
c	Compliance		
	Guidepost	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	<p>Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</p>
	Met?	(Y)	(N)
	Justification	<p>Fisheries management activities in the WCPFC Ocean are administered following the compliance to WCPFC CMMs. Members of WCPFC including Indonesia are bound to abide by these CMMs. WCPFC establishes compliance working group that recommends measures to promote compatibility among the fisheries management measures in its member countries, addressing matters relating to compliance with fisheries management measures, analyzing information on compliance and report the findings to the WCPFC. WCPFC produced an annual report as part of the compliance review, which reports on violations. It appears that fishers' compliance is sufficient.</p> <p>The fishers involved in the fishery under assessment (UoA) are categorized as small-scale fishers as they fish with fishing boats of less than 10 GT, as per definition of Indonesian Law No.7/2016 concerning Protection and Empowerment of Fisher, Fish Farmers and Salt Farmers. As further stipulated in Indonesian Law No.31/2004 as amended by Law No. 45/2009 concerning Fisheries, small-scale fishers are exempted from the requirement to obtain fishing licenses, free to conduct fishing operations in all Fisheries Management Areas, and obliged to register their vessel to the local fisheries agency but do not pay a fee. They are not subject to log book requirement as well, therefore not required to report their catch. However, the yellowfin hand-line small-scale tuna fishers under assessment are quite an exception, because they are part of and have been certified for Fair Trade USA Capture Fisheries since 2014. An important component of the Fair Trade USA Capture Fisheries certification is the so-called Resource Management component that requires compliance on environmental stewardship in which fishers must adopt responsible fishing practices and protect biodiversity. This includes data collection and monitoring to provide better information on the state of fish stocks and mitigate the impacts of fishing. The recent Fair Trade USA Capture Fisheries audit conducted in early 2019 to evaluate these yellowfin hand-line small-scale tuna fishers associations in Buru, indicated their compliance to record their daily catch on target species (yellowfin tuna), secondary species and other information (such as interaction with Endangered, Threatened and Protected/ETP species) that is of importance to the effective management of the fishery. In any case where ETP species unintentionally caught, they were safely release back to the ocean in accordance with the training/skills they have learned.</p> <p>In addition, all small-scale fishing vessels belonging to members of the fisher associations in north Buru and north Seram under assessment have completed and/or are being registered. As of August 2019, there are 147 small-scale fishing vessels belonging to member of FAs in north Buru have completed the registration and the remaining 61 are still in on-going process of registration. In north Seram, 48 small-scale fishing vessels have completed registration and the remaining 15 vessels have not yet been registered.</p> <p>SG 60 and SG 80 are met as some evidence exists to demonstrate fishers comply with the management system under assessment.</p> <p>SG 100 is not met as no sufficient evidence that could lead to a high degree of confidence that fishers comply with the management system.</p>	

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
d	Systematic non-compliance		
Guided post		There is no evidence of systematic non-compliance.	
Met?		(Y)	
Justification	<p>At the WCPFC level, there is no reports (evidences) of systematic non-compliance. Some of the non-compliances rather have to do with lack of capacity (human and financial resources) of its member countries and not intended in a way that could harm the sustainability of the fishery. Also, there has been a significant reduction in non-compliances over the last decade.</p> <p>There were still some priority non-compliant by Indonesian government especially for CMM 2016-01 that is now replaced by CMM 2018-01 on tropical tuna on the Conservation and Management Measures for big-eye, yellowfin and skipjack tuna in the WCPO. These include paras (23 and 24) which required establishment of effort limits, or equivalent catch limits for purse seine fisheries within their EEZs that reflect the geographical distributions of skipjack, yellowfin, and big-eye tunas, consistent with the objectives for those species and that requirement shall apply to all coastal States within the Convention Area and shall report their quantitative limits and their bases in their Annual Report Part 2 for 2013 and shall annually report fishing days in their Annual Report Part 2 for the previous 12 month calendar period. In relation to measures under "Scientific data provision", Indonesia is now in compliant except for 'Section 03 (vi) – Operational Level Catch and Effort Data' for which 'Capacity Assistance is Needed. In addition, Indonesia is also still in non-compliance for CMM 2013-08 on silky shark. None of these are specific to small-scale yellowfin hand line tuna fishery in north Buru and north Seram under this assessment.</p> <p>The yellowfin hand line Fair Trade tuna Fishers Associations in north Buru and north Seram, the UoA, are subject to regular annual audit from Fair Trade USA. Should these FAs found to have repeated non-compliances to Fair Trade USA Capture Fisheries standard, they could receive some consequences including a delay on disbursement of their 'premium funds'. This premium fund which could reach ten to hundreds of millions rupiah, is one of the main reasons for many fishers to join the FAs (personal communication with member of the FAs in north Buru, March 2019). The use of the premium funds are agreed on and decided jointly by the member of the FAs during the FAs meetings.</p> <p>SG 80 is met as there is no evidence of systematic non-compliance.</p>		
References	[Law no.31/2004 as amended through Law no.45/2009 concerning Fisheries; Fair Trade Capture Fisheries audit report, 2019; WCPFC15-2018-FinalCMR; Law No.7/2016 concerning Protection and Empowerment of Fisher, Fish Farmers and Salt Farmers; CMM 2018-01 on tropical tuna on the Conservation and Management Measures for big-eye, yellowfin and skipjack tuna; Fair Trade Capture Fisheries audit report, 2019		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			
Condition			

Evaluation Table for PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system.		
Scoring Issue		SG 60	SG 80	SG 100
a	Evaluation coverage			
	Guidepost	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system	There are mechanisms in place to evaluate all parts of the fishery-specific management system.
	Met?	(Y)	(Y)	(N)
	Justification	<p>Mechanisms to evaluate key parts of fishery management system are in place at WCPFC. The Commission has Scientific Committee (SC) that provides update on best available scientific information to inform Committee’s consideration for appropriate conservation and management measures (CMMs). Also, a Technical and Compliance Committee (TCC) was established with responsibility to review members’ adherence to Commission decisions and monitors individual countries’ implementation of the CMMs. These committees meet regularly and provide reports on their findings to the Secretariat of the Commission and Commission members through a well-defined mechanisms.</p> <p>In Indonesia, mechanism to evaluate key parts of fisheries management is in place through various established means and procedures. For example, the allocation of catch quota (in the form of fishing vessel GT which will then translated into number of licenses) per FMA is evaluated per annum by a team designated through decree of Director General of Capture Fisheries of MMAF. These team consisted of representation from DG Capture Fisheries, National Committee on stock assessment, researchers and academician mandated to conduct evaluation process following the established procedures as stated in the decree. This team will then collect data and information and consult with relevant stakeholders to gain inputs to inform their decision making process and recommendations. In addition, a mechanism to evaluate the status of fisheries stock is also in place. The national committee on stock assessment is mandated to advice Minister of Marine Affairs and Fisheries on the fisheries stock status nationwide. This stock assessment committee has an established procedures to collect and review data and information, conduct analysis, and stakeholders consultation prior to making recommendation on fisheries stock status to the Minister.</p> <p>As fisheries that have been certified for FT USA Capture Fisheries standard, the fishery-specific yellowfin hand-line tuna fishery in north Buru and north Seram, The UoA, are regularly evaluate every year. The evaluation includes among others ‘Resource Management’ component such as to inspect compliance on data collection (catch record in the logbook), evidence of destructive fishing practices, impact of fishing gears used on habitats, and vessel registration. These regular evaluation on key parts of the fishery management have begun since 2014.</p> <p>SG 60 and SG 80 are met as there are mechanisms in place to evaluate key parts of the fishery-specific management system.</p> <p>SG 100 is not met as no evidence that there are mechanisms in place to evaluate all parts of the fishery-specific management system.</p>		
b	Internal and/or external review			
	Guidepost	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	(Y)	(Y)	(Y)
	Justification	WCPFC is subject to regular internal review as demonstrated by the various committees and working groups that meet regularly and report their findings to the Commission. Also,		

PI 3.2.4		<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>
		<p>WCPF Commission is subject to external independent performance review and was once conducted in 2012. Nevertheless, there is no mechanism in place as yet to ensure that an external review will be conducted regularly.</p> <p>All Indonesian government institutions, including MMAF and fisheries agency at provincial level are subject to internal and external programmatic and financial audits. The Inspectorate General of MMAF (chaired by senior official of echelon I of MMAF) conducts annual internal audit for MMAF including Directorate General for Capture Fisheries, whereas Provincial and/or District Inspectorate perform internal annual audit for provincial and/or district government agencies. Both Audit Board of the Republic Indonesia (BPK) and Finance and Development Audit Agency (BPKP) are regarded as external auditors that also conduct audit for any government agencies (including MMAF and government agencies at provincial and district level). Specific audits might also be performed, especially if violation of law/regulations was indicated, by other related agencies including Public Prosecution Service (Kejaksaan Agung), Police Department and Commission for Corruption Eradication (Komisi Pemberantasan Korupsi/KPK). The research plans of the Center for Fisheries Research of the Agency for Research and Marine and Fisheries Human Resource Development of MMAF for example, is also audited externally by independent university for their research plans.</p> <p>As already stated earlier that the fishery and Fair Trade Fishers Associations in north Buru and north Seram, the UoA have been subject to external audit/evaluation/review by independent auditors using the Fair Trade USA Capture Fisheries Standard an audit guideline provided by Fair Trade USA. Besides audit on Resource Management for example, the Fair Trade audit also covers matters such as: empowerment and community development, fundamental human rights, wages and working conditions, and trade requirements. Internally, MDPI that has been instrumental in facilitating the establishment and assisting the day-to-day operation of the FAs in north Buru and north Seram also regularly evaluates the resource management component including data collection mechanism and protocols, and knowledge sharing pertaining to fisheries management and marine conservation in general.</p> <p>SG 60, SG 80 and SG 100 are met as the fishery-specific management system is subject to regular internal and external review.</p>
References		Decision of Directorate General for Capture Fisheries No.86/Kep-DJPT/2018 concerning mechanism to calculate catch allocation within Indonesian FMAs
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		
Click here to enter text.		

Appendix 1.3 Conditions

The expected timeline for the milestones related to Principle 1 (conditions 1—4) will be adjusted by one year because the WCPFC meetings occur in December of the year that the milestone are set at, compliance can only be evaluated the next year. Thus, the conditions 1-4 will now be set to close in the third surveillance (2023).

Condition 1-1

PI	PI 1.2.1 (Scoring issue a) Harvest strategy design ⁷	
Score	PI score: 70	
Justification	<p>See rationale for PI 1.2.1a: Evaluation Table for PI 1.2.1 Yellowfin tuna – Harvest strategy</p> <p>The general stock decline for yellowfin (albeit with a recent increase in stock size), the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, reduces the level of confidence that the harvest strategy would be responsive to the state of the stock or that the elements will work together when required to do so to achieve the management objectives.</p> <p>It is also not clear that coherent management actions are applied throughout the range of the stock, particularly in Indonesia and the Philippines.</p> <p>Overall this prevents the conclusion that the strategy is designed to achieve stock management objectives.</p> <p>Yellowfin tuna is therefore considered to meet the SG 60 level of this scoring issue but not the SG 80 or SG 100 levels.</p>	
Condition	<p>By the third surveillance audit, demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.</p>	
Milestone Year 1	<p>Year 1 (2021): SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR.</p> <p>Expected score: 70</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> The client group will continue to advocate for 1) the WCPFC to implement the Harvest Strategy Workplan and meet the workplan schedule as adopted in December 2017; 2) the adoption of a WCPO Yellowing TRP in December 2019 (and subsequent years if not adopted in 2019); 3) the development of a HCR for WCPO yellowfin tuna by December 2021; and 4) the WCPO yellowfin tuna harvest strategy to be adopted by WCPFC, where the harvest strategy is responsive to the state of the stock and achieves WCPFC's management objectives for the stock. The client group will implement harvest strategy advocacy activities by participating in WCPFC meetings as part of the Indonesian delegation

⁷ The Principle 1 milestones and timelines for the Yellowfin are harmonized with other MSC tuna fisheries in the WCPO. The milestones have been set one year after the WCPFC workplan so that the assessment team can review the outcomes of the Commission meetings held in December each year in the following year's audit.

		<p>or as an invited observer under IPNLF or AP2HI, where the client will communicate the desired milestones. The client group will also continue to co-sign the NGO Tuna Forum annual joint-letters to the WCPFC that advocate for putting in place and implementing a robust harvest strategy for this stock. The client will also distribute the NGO Tuna Forum letter to the head of the Indonesian delegation to WCPFC and highlight to the delegates that implementation of the WCPFC Harvest Strategy Workplan is a condition of MSC certification of Indonesian and other fisheries in the WCPO region.</p> <ul style="list-style-type: none"> The client group will also meet during WCPFC annual session with MSC staff and with client and CABs of other MSC fisheries with the same conditions of certification to discuss how to align and coordinate our Client Action Plan activities to address these conditions. For this activity, the client will participate in the Western and Central Pacific Ocean (WCPO) Tuna Marine Stewardship Council (MSC) Alignment Group specifically established for this purpose.
	Expected outcome:	<ul style="list-style-type: none"> Advocacy letters sent to the WCPFC. Minutes of relevant meetings (e.g. WCPO Tuna MSC Alignment Group)
	Responsible Party/ies:	<ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI The Indonesian delegation (SDI) to the WCPFC IPNLF AP2HI
Milestone Year 2	Surveillance Year 2 (2022): Milestone Year 2: SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs. Expected score: 70	
Client Action Plan	Activities:	Same as Milestone 1.
	Expected outcome:	Same as Milestone 1.
	Responsible Party/ies	Same as Milestone 1.
Milestone Year 3	Surveillance Year 3 (2023): Milestone Year 3: Same as year 2; adopt a HCR. Expected score: 80 <i>*The WCPFC workplan ends in 2021. By then, the work towards a formal harvest strategy for yellowfin will be adopted; a harvest strategy meeting the MSC SG80 requirements is required by Year 4.</i>	
Client Action Plan	Activities:	Same as Milestone 1.
	Expected outcome:	Same as Milestone 1.
	Responsible Party/ies:	Same as Milestone 1.
Consultation on condition	Letters of support relation with action plan were provided by the following organizations: <ul style="list-style-type: none"> MDPI The Indonesian delegation (SDI) to the WCPFC 	

	<ul style="list-style-type: none">• IPNLF• AP2HI
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Condition 1-2

PI	PI 1.2.2 Harvest control rules and tools	
Score	PI score 60	
Justification	See rationale for PI 1.2.2 a,b,c: Evaluation Table for PI 1.2.2 yellowfin tuna – Harvest control rules and tools	
Condition	<p>SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.</p> <p>SI b) By the fourth surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties.</p> <p>SI c) By the fourth surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p> <p><i>Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.</i></p>	
Milestone Year 1	<p>Year 1 (2021):</p> <p>SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR.</p> <p>Expected score: 60</p>	
Client Action Plan	Activities:	See the client action plan for condition 1, where advocacy for items 3) and 4) relate to having a well-defined harvest control rule (HCR) for WCPO yellowfin tuna developed and adopted that takes into account the main uncertainties for the stock that are consistent with the harvest strategy, ensures that the exploitation rate is reduced as a limit reference point is approached, and is expected to keep the stock near its TRP.
	Expected outcome:	SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR.
	Responsible Party/ies:	<ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI • The Indonesian delegation (SDI) to the WCPFC • IPNLF • AP2HI
Milestone Year 2	<p>Surveillance Year 2 (2022): Milestone Year 2:</p> <p>SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs.</p> <p>Expected score: 60</p>	
Client Action Plan	Activities:	Same as Milestone 1.
	Expected outcome:	Same as Milestone 1.
	Responsible Party/ies:	Same as Milestone 1.
Milestone Year 3	<p>Surveillance Year 3 (2023): Milestone Year 3:</p> <p>Same as year 2; adopt a HCR.</p>	

	Expected score: 80	
Client Action Plan	Activities:	Same as Milestone 1.
	Expected outcome:	Same as Milestone 1.
	Responsible Party/ies:	Same as Milestone 1.
Consultation on condition	<ul style="list-style-type: none"> • MDPI • The Indonesian delegation (SDI) to the WCPFC • IPNLF • AP2HI 	

Conditions 2-1 and 2-2

PI	PI 2.4.2. Habitat management strategy PI 2.4.3. Habitats information	
Score	PI 2.4.2 score: 75 PI 2.4.3 score: 70	
Justification	See justification for: PI 2.4.2 (c) Habitat Management strategy implementation PI 2.4.3 (b) Information adequacy for assessment of Habitat impacts PI 2.4.3 (c) Monitoring	
Condition	<p>Condition 2-1 (PI 2.4.2): By the year three surveillance the fishery shall provide some quantitative evidence that the measures/partial strategy [for AFADs] is being implemented successfully.</p> <p>Condition 2-2 (PI 2.4.3): By year four the client shall provide evidence that:</p> <ul style="list-style-type: none"> • Information [for AFADs] is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. • Adequate information [for AFADs] continues to be collected to detect any increase in risk to the main habitats. 	
Milestone Year 1	<p>Surveillance Year 1 (2021): Milestone Year 1:</p> <p>The client shall review the available habitat management measures for AFADs and the level of knowledge on AFADs employed by the UoA, evaluate the administrative, financial, data and research requirements necessary to successfully implement the management and information requirements.</p> <p>PI 2.4.2 Expected score: 75 PI 2.4.3 Expected score: 70</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client group will support the on-going work that the Fair Trade Associations and the Fair Trade committee to establish a Fair Trade fisheries management plan, specific to the UoC. This would essentially consist of a customary framework in the interim until a government led fishery specific management plan. The plan will include: <ul style="list-style-type: none"> ○ A plan to conduct a review of the available habitat management measures in place for anchored FADs, to what extent these are implemented as well as a plan to collect data on the number and locations employed by the UoA. ○ A plan to evaluate the administrative, financial and data research requirements needed to collect the necessary information that will inform a management strategy for the anchored FADs within the UoA.

		<ul style="list-style-type: none"> ○ A plan to develop a partial strategy to manage anchored FADs within the UoA. • The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and in consultation with the Fair Trade Associations so that it includes: <ul style="list-style-type: none"> ○ A plan to conduct a review of the available habitat management measures in place for anchored FADs, to what extent these are implemented as well as a plan to collect data on the number and locations employed by the UoA. ○ A plan to evaluate the administrative, financial and data research requirements needed to collect the necessary information that will inform a management strategy for the anchored FADs within the UoA. ○ A plan to develop a partial strategy to manage anchored FADs within the UoA.
	Expected outcome:	<ul style="list-style-type: none"> • A report on the available habitat management measures (formal and informal) for anchored FADs that are applicable to the UoA. • A list of the number and locations of anchored FADs in the UoA. • A report evaluating the administrative, financial and data requirements needed to collect the necessary information that will inform a management strategy for the anchored FADs within the UoA. • A document describing a partial strategy developed by the Fair Trade FAs to manage anchored FADs within the UoA. • An update on the development of a development and adoption of a Tuna Fisheries Tuna Management Plan (FMP) by the Maluku Provincial government
	Responsible Party/ies:	<ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI • AP2HI • IPNLF • The Makuku Provincial government (DKP Maluku)
Milestone Year 2	Surveillance Year 2 (2022): Milestone Year 2: The client shall provide evidence of progress in the implementation of the partial strategy and data collection for AFADs. PI 2.4.2 Expected score: 75 PI 2.4.3 Expected score: 70	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client group and its partners (listed below) will work together to collect data on anchored FADs.
	Expected outcome:	<ul style="list-style-type: none"> • A report assessing the extent to which the client group has collected the data on anchored FADs.
	Responsible Party/ies	<ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI

		<ul style="list-style-type: none"> • AP2HI • IPNLF • The Makuku Provincial government (DKP Maluku)
Milestone Year 3	Surveillance Year 3 (2023): Milestone Year 3: The client shall present quantitative evidence that the partial strategy is being implemented successfully, and that there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. PI 2.4.2 Expected score: 80 PI 2.4.3 Expected score: 75	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client group will monitor the use of anchored FADs in the UoA and the extent to which they interact with sensitive habitats.
	Expected outcome:	<ul style="list-style-type: none"> • A report presenting quantitative evidence that the partial strategy is being implemented successfully (i.e. that the fishers follow the measures/arrangements captured in the partial strategy) e.g. evidence of FAD registrations.
	Responsible Party/ies:	<ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI
Milestone Year 4	Surveillance Year 4 (2024): Milestone Year 4: The client shall present evidence that adequate information [for AFADs] continues to be collected to detect any increase in risk to the main habitats PI 2.4.2 Expected score: 80 PI 2.4.3 Expected score: 80	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client will continue to implement the partial strategy developed as part of this client action plan, including the collection of information that is adequate to detect any increase in risk to the main habitats.
	Expected outcome:	<ul style="list-style-type: none"> • Partial strategy assessment report.
	Responsible Party/ies:	<ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI
Consultation on condition	Letters of support relation with action plan were provided by the following organizations: <ul style="list-style-type: none"> • MDPI • AP2HI • IPNLF • The Makuku Provincial government (DKP Maluku) • SDI/DG Capture of Fisheries 	

Condition 3-1

Performance Indicator	PI 3.1.1 (a) Compatibility of laws or standards with effective management	
Score	PI score: 75	
Justification	See justification for PI 3.1.1 a.: compatibility of laws or standard with effective management.	
Condition	Condition 3-1: By year four the client shall present evidence that there is an effective national legal [and/or customary framework] system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	
Milestone Year 1	<p>Surveillance Year 1 (2021): Milestone Year 1:</p> <p>By the 1st annual surveillance, the client shall of outline a plan to develop a coherent set of practices or procedures, applicable to the UoA, that contains essential features⁸ needed to deliver sustainable fisheries outcomes consistent with Principles 1 and 2. The set of practices/procedures should address gaps identified under PI 3.1.1 including: compatibility with WCPFC measures established for the high seas for the yellowfin stock FAD management regulations, effective operation of the FMA Fisheries Management Councils and Maluku province tuna fishery co-management council, effective registration of vessels in the UoA.</p> <p>Expected score: 75</p>	
Client Action Plan	<p>Activities:</p>	<ul style="list-style-type: none"> The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), including future harvest strategy and harvest control rules measures that is applicable to the UoA and that delivers sustainable fisheries outcomes in line with MSC Principles 1 and 2 and compatible with WCPFC measures established for the high seas for the yellowfin stock (including WCPFC CMM 2014-06 and subsequent amendments). <ul style="list-style-type: none"> This plan will include support to fisheries data collection program that helps inform the on-going development of a harvest strategy and harvest control rules for tuna stocks in Indonesia archipelagic waters and that include small-scale fisheries. The plan will also include the continuation of collaboration between the client group and other stakeholders (AP2HI, IPNLF, Maluku province FCMC) to support the development of HS and HCRs by attending relevant technical sessions and stakeholder workshops. A summary of those meetings and progress will be provided, together with accompanying technical papers. In the interim of a formal management systems that is applicable to the UoA, the client group will also work to develop informal management rules concerning anchored FADs, controls on fishing mortality using a precautionary approach to fisheries management, and the sanctioning of illegal fishing activities through the Fair Trade Fishermen Associations internal rules and fisheries management plan,

⁸ Essential features may include; when and where people can fish, who can fish, how they can fish, how much they can catch, how are irregular activities identified and sanctioned

		the AP2HI code of conduct and corresponding audit system and other means deemed appropriate.
	Expected outcomes	<ul style="list-style-type: none"> Outline of a plan to support the development of a customary framework (Fair Trade fisheries management plan following FTUSA CFS v1.01 requirements) that is applicable to the UoA and contains essential features needed to deliver sustainable fisheries outcomes consistent with Principles 1 and 2. Progress report on the development of formal tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), that is applicable to the UoA and contains a partial strategy to manage the impact of the fishery and deliver sustainable fisheries outcomes consistent with Principles 1 and 2.
	Responsible Party/ies	<ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI AP2HI IPNLF The Makuku Provincial government (DKP Maluku)
Milestone Year 2	<p>Surveillance Year 2 (2021): Milestone Year 2: By the 2nd annual surveillance: (a) Evidence will be presented to demonstrate progress on the development of a coherent set of practices/ procedures, to achieve objectives and outcomes consistent with MSC Principles 1 and 2, as outline on the Milestone for Year 1. Expected score: 75</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> The client group and its partners will work to implement the Fair Trade fisheries management plan developed in Year 1, in cooperation with relevant parties, including the Buru and north Seram Fair Trade fishermen associations of the UoA. The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), including future harvest strategy and harvest control rules measures that is applicable to the UoA and that delivers sustainable fisheries outcomes in line with MSC Principles 1 and 2 and compatible with WCPFC CMM 2014-06 (and subsequent amendments).
	Expected outcome:	<ul style="list-style-type: none"> The Fair Trade fisheries management plan developed in Year 1 is adopted by the Fair Trade associations and there has been progress with its implementation, demonstrated through a progress report and appropriate documentation (e.g. meeting report, technical papers). Progress report (including meeting summaries and technical papers) on the development of formal tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and applicable to the UoA and contains a partial strategy to manage the impact of the fishery and deliver

		sustainable fisheries outcomes consistent with Principles 1 and 2.
		Responsible party/ies: <ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI • AP2HI • IPNLF • The Makuku Provincial government
Milestone Year 3	Surveillance Year 3 (2022): Milestone Year 3: By year 3th annual surveillance: the client shall present evidence documenting a set of coherent practices/procedures for fisheries management organization and cooperation for the small-scale yellow-fin hand-line tuna fishery-specific in north Buru and north Seram. The client shall also present some evidence of implementation of the framework. and that it is open to review and adaption as new information becomes available. Expected score: 75	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client group and its partners will work to implement the Fair Trade fisheries management plan developed in Year 1, in cooperation with relevant parties, including the Buru and north Seram Fair Trade fishermen associations of the UoA. • The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), including future harvest strategy and harvest control rules measures that is applicable to the UoA and that delivers sustainable fisheries outcomes in line with MSC Principles 1 and 2 and compatible with WCPFC CMM 2014-06 (and subsequent amendments).
	Expected outcome:	<ul style="list-style-type: none"> • The plan developed in Year 1 is adopted and there has been progress with its implementation, demonstrated through a progress report and appropriate documentation (e.g. meeting report, technical papers). • Progress report on the development of formal tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) that is applicable to the UoA and contains a partial strategy to manage the impact of the fishery and deliver sustainable fisheries outcomes consistent with Principles 1 and 2.
		Responsible party/ies: <ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI • AP2HI • IPNLF • The Makuku Provincial government

Milestone Year 4	<p>Surveillance Year 4 (2023): Milestone Year 4:</p> <p>By the year 4th annual surveillance: the client shall present evidence that there is an effective national legal system [and/or customary framework] and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2</p> <p>Expected score: 80</p>	
Client Action Plan	<p>Activities:</p>	<ul style="list-style-type: none"> The client group and its partners will work to implement the Fair Trade fisheries management plan developed in Year 1, in cooperation with relevant parties, including the Buru and north Seram Fair Trade fishermen associations of the UoA. The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), including future harvest strategy and harvest control rules measures that is applicable to the UoA and that delivers sustainable fisheries outcomes in line with MSC Principles 1 and 2 and compatible with WCPFC measures established for the high seas for the yellowfin stock (including. WCPFC CMM 2014-06 and subsequent amendments).
	<p>Expected outcome:</p>	<ul style="list-style-type: none"> The Fair Trade fisheries management plan developed in Year 1 has been successfully implemented and there is evidence that it is effective through a progress report and appropriate documentation (e.g. meeting report, technical papers). Progress report on the development of formal measures (Maluku Province Tuna Fisheries Management Plan) that is applicable to the UoA and contains a partial strategy to manage the impact of the fishery and deliver sustainable fisheries outcomes consistent with Principles 1 and 2.
		<p>Responsible party/ies:</p> <ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI AP2HI IPNLF The Makuku Provincial government (DKP Maluku)
Consultation on condition	<p>Letters of support relation with action plan were provided by the following organizations:</p> <ul style="list-style-type: none"> MDPI AP2HI IPNLF The Makuku Provincial government (DKP Maluku) SDI/DG Capture of Fisheries 	

Condition 3-2

Performance Indicator	PI 3.2.1 Fishery-specific objectives	
Score	PI score: 70	
Justification	See justification for PI 3.2.1.: fishery-specific objectives	
Condition	By year four the client shall present evidence that short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	
Milestone Year 1	<p>Surveillance Year 1 (2021): Milestone Year 1:</p> <p>By the 1st annual surveillance, the client has completed a review the current fishery-specific management objectives that shape management decision making in relation to fish stock health (P1) and ecosystem impacts (P2) and determined the extent to which these are explicit and address the full range of MSC Principle 1 and 2 criteria. (including but not limited to stock status, impact of the fishery-specific to Endangered, Threatened, Protected (ETP) species, impacts of anchored FAD to habitats)</p> <p>Expected score: 70</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> The client group will work with its partners to a review the current fishery-specific management objectives that shape management decision making in relation to fish stock health (P1) and ecosystem impacts (P2) and determined the extent to which these are explicit and address the full range of MSC Principle 1 and 2 criteria.
	Expected outcome:	<ul style="list-style-type: none"> A review of the current fishery-specific management objectives that shape management decision making in relation to fish stock health (P1) and ecosystem impacts (P2) and determined the extent to which these are explicit and address the full range of MSC Principle 1 and 2 criteria.
		<p>Responsible Party/ies:</p> <ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI AP2HI IPNLF The Makuku Provincial government
Milestone Year 2	<p>Surveillance Year 2 (2022): Milestone Year 2:</p> <p>By the 2nd annual surveillance, the client has developed a draft of clearly defined fishery-specific objectives. Expected score: 70</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and includes fishery-specific management objectives

		that explicitly address the full range of MSC Principle 1 and 2 criteria.
	Expected outcome:	<ul style="list-style-type: none"> A draft of tuna fisheries management measures and objectives for the Maluku that is aligned the National Tuna Management Plan (NTMP) and includes fishery-specific management objectives that explicitly address the full range of MSC Principle 1 and 2 criteria.
		Responsible Party/ies: <ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI AP2HI IPNLF The Makuku Provincial government (DKP Maluku)
Milestone Year 3	Surveillance Year 3 (2023): Milestone Year 3: By the 3 rd annual surveillance, the client has completed consultation process, involving relevant fishery-specific stakeholders at local, provincial, national and regional level (as necessary) to approve fishery-specific long-and short-term objectives informed among others by the results of the study in Year 1, and consistent with relevant WCPFC CMMs, interim tuna harvest strategy and national action plan capable of delivering outcomes consistent with MSC principle 1 (stock sustainability) and principle 2 (ecosystem health). Expected score: 70	
Client Action Plan	Activities:	<ul style="list-style-type: none"> The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and includes fishery-specific management objectives that explicitly address the full range of MSC Principle 1 and 2 criteria. Part of this development and adoption process will include a consultation process will all relevant stakeholders at local, provincial, national and regional level (as necessary) to approve fishery-specific long-and short-term objectives informed among others by the results of the study in Year 1, and consistent with relevant WCPFC CMMs, interim tuna harvest strategy and national action plan capable of delivering outcomes consistent with MSC principle 1 (stock sustainability) and principle 2 (ecosystem health).
	Expected outcome:	<ul style="list-style-type: none"> Report(s) documenting the consultation process.
		Responsible Party/ies: <ul style="list-style-type: none"> The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). MDPI AP2HI

		<ul style="list-style-type: none"> • IPNLF • The Makuku Provincial government (DKP Maluku)
Milestone Year 4	<p>Surveillance Year 4 (2024): Milestone Year 4:</p> <p>By the 4th annual surveillance, the client shall present evidence of formal adoption of the long- and short-term objectives of the fishery-specific management, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.</p> <p>Expected score: 80</p>	
Client Action Plan	Activities:	<ul style="list-style-type: none"> • The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and includes fishery-specific management objectives that explicitly address the full range of MSC Principle 1 and 2 criteria.
	Expected outcome:	<ul style="list-style-type: none"> • Evidence that the adoption of tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP) and includes fishery-specific management objectives that explicitly address the full range of MSC Principle 1 and 2 criteria.
		<p>Responsible Party/ies:</p> <ul style="list-style-type: none"> • The client group (Coral Triangle Processors, LLC, PT. Harta Samudra, Anova Food, LLC, North Buru and North Seram Fair Trade Fishermen Associations). • MDPI • AP2HI • IPNLF • The Makuku Provincial government (DKP Maluku)
Consultation on condition	<p>Letters of support relation with action plan were provided by the following organizations:</p> <ul style="list-style-type: none"> • MDPI • AP2HI • IPNLF • SDI/DG Capture of Fisheries • The Makuku Provincial government (DKP Maluku) 	

6.2 Client Action Plan Support Letters



October 23rd, 2019

Ref : 117/MDPI-ADM/X/2019

To the client group:

1. Anova Food, LLC
2. Coral Triangle Processors, LLC
3. PT. Harta Samudra
4. North Buru Fair Trade Fishermen Associations

Dear client group,

MARINE STEWARDSHIP COUNCIL CERTIFICATION OF THE NORTH BURU AND MALUKU FAIR TRADE FISHING ASSOCIATIONS INDONESIAN HANDLINE YELLOWFIN TUNA FISHERY:

RE: SUPPORT FOR THE CLIENT ACTION PLAN

Thank you for sharing with MDPI the draft MSC assessment results and your proposed Client Action Plan. MDPI is an independent Indonesian NGO, supporting sustainability improvements in small-scale fisheries through partnership with industry partners. MDPI also supports the Ministry of Marine Affairs and Fisheries Republic of Indonesia in strengthening the role, capacity and recognition of small-scale fisheries through our program activities. For this client action plan, MDPI will support on the development of the harvest strategies for archipelagic waters, continuing our attendance and data provision to the national effort. We will also support with the collection and analysis of data regarding FAD use and FAD management in small-scale fisheries. Thirdly, we will continue to build capacity amongst the fishers as well as the district and provincial level governments for management improvements, specifically through our co-management activities.


MDPI fully supports the action set in the Client Action Plan that mention MDPI as a responsible party. These activities include 1) promoting at the WCPFC a harvest strategy and harvest control rules for yellowfin tuna; 2) promoting and developing compatible objectives, strategies and harvest control rules within Indonesian archipelagic waters; 3) developing and implementing management measures for FAD and ETP species within the fishery and; 4) developing and implementing an effective customary framework within the fishery that delivers management outcomes consistent with MSC Principle 1 and 2. We confirm our intention to take forward all actions where MDPI has been identified as a responsible party in the Client Action Plan.

Yours Sincerely,




Saut Tampubolon
Executive Director

Yayasan Masyarakat dan Perikanan Indonesia — Istana Regency Blok S No. 7 Pesanggaran,
Denpasar, Bali – 80223, Indonesia | t: +62 361 471 9020 | e: info@mdpi.or.id | w: www.mdpi.or.id


PEMERINTAH PROVINSI MALUKU
DINAS KELAUTAN DAN PERIKANAN
 Jl. Nn. Saar Sopenua No.16 Telp. 352216,341558,354474 Fax. 352216 Kotak pos 75
 Email: dkkp.prcmal@gmail.com, dkkp.prcmal@malukuprov.go.id
AMBON – 97117

Ambon, 28 Oktober 2019

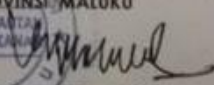
Nomor : 523.3 / 14821/19K
 Lampiran : -
 Perihal : Dukungan Rencana Aksi dalam rangka sertifikasi Marine Stewardship Council [MSC]

Kepada :
 Yth. 1. Direktur Eksekutif MDPI,
 2. PT. Harta Samudera
 3. Kelompok Nelayan Fair Trade di Buru Utara
 4. Coral Triangle Processors, LLC
 di -
 Tempat.

Sehubungan dengan surat Direktur Eksekutif MDPI Nomor 103/MDPI-ADM/X/2019 tanggal 08 Oktober 2019 perihal tersebut diatas, dengan ini disampaikan hal-hal sebagai berikut:

1. Sehubungan dengan telah diterimanya laporan hasil pelaksanaan full assessment proses sertifikasi MSC perikanan tuna handline di Buru Utara, termasuk rencana aksi pengelolaan yang disusun oleh PT. Harta Samudera, Kelompok Nelayan Fair Trade Buru Utara dan Coral Triangle Processors, LLC yang difasilitasi oleh MDPI;
2. Berdasarkan Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintah Daerah, dimana Dinas Kelautan dan Perikanan Provinsi Maluku memiliki kewenangan untuk mengelola sumberdaya ikan sampai 12 mil laut. Kewenangan tersebut dilaksanakan sesuai dengan kaidah pengelolaan perikanan yang berkelanjutan dan bertanggung jawab khususnya untuk perikanan tuna dengan alat tangkap Handline;
3. Berkenaan dengan butir (1) dan (2) tersebut diatas, kami sangat mendukung rencana aksi sebagaimana dimaksud pada butir (1), khususnya dalam pengembangan Harvest Strategy dan Harvest Control Rules untuk perikanan tuna sirip kuning dalam Wilayah Perairan Kepulauan Indonesia termasuk melaksanakan tindakan pengelolaan berdasarkan Rencana Nasional Pengelolaan Perikanan Tuna Indonesia;
4. Kami juga berkomitmen untuk mendukung Kelompok Nelayan Fair Trade di Buru Utara dalam menyusun rencana aksi pengelolaan perikanan tuna sirip kuning, dengan mengacu pada tindakan pengelolaan yang diadopsi di tingkat regional, nasional dan provinsi Maluku.

Demikian penyampaian kami, atas perhatiannya disampaikan terima kasih.

KEPALA DINAS KELAUTAN DAN PERIKANAN
PROVINSI MALUKU

DR. Ir. ROMEUS FAR - FAR, M.Si
 Pembina Utama Madya
 NIP. 19600221 198503 1 017

Tembusan disampaikan : Kepada Yth
 1. Bapak Gubernur Maluku di Ambon (sebagai laporan)
 2. Anip

TRANSLATION

Ambon, October 28, 2019

Number: 523.3/14882/19K

Subject : Support of Action Plans for Marine Stewardship Council certification

To:

- Executive Director MDPI
- PT Harta Samudera
- Fair Trade Fishers Association in North Buru
- Coral Triangle Processors, LLC

With regards to the MDPI Executive Director's letter Number: 103 / MDPI-ADM / X / 2019 of October 8, 2019 regarding the above subject, I herewith wish to inform you the following:

1. We confirm that we have received the report on MSC full assessment on tuna handline fisheries certification process in North Buru, including a management action plan set up by PT Harta Samudera, the North Buru Fair Trade Fishers Association, and Coral Triangle Processors, LLC facilitated by MDPI;
2. Based on Law Number 23 of 2014 on the Local Government, Provincial for Marine Affairs and Fisheries Maluku has the authority to manage fish resources up to 12 nautical miles. The authority is implemented in accordance with the principles of sustainable and responsible fisheries management, especially for tuna fisheries with handline fishing gear;
3. With regard to the points (1) and (2) above, we wish to strongly support the action plan as referred to in point (1), in particular a development of the Harvest Strategy and Harvest Control Rules for yellowfin tuna fisheries in the Indonesia Archipelagic Waters, including the implementation of management measures based on the National Tuna Fisheries Management Plan of Indonesia.
4. We are also committed to support the Fair Trade Fishers Associations in North Buru in developing an action plan for management of yellowfin tuna fisheries, which are compatible to the management actions adopted at the Regional, National and Maluku Provinces level.

Thank you for your kind attention.

Head of Maluku Provincial Maritime and Fisheries Office

signed

DR. Ir. Romelus Far – Far, M.Si

Copy carbon:

1. Governor of Maluku in Ambon (as a report)
2. Archive



Jakarta, 17 October 2019

Letter reference number : 098/A/AP2HI/X/2019
Subject : Support letter from AP2HI to the client action plan

To the client group:

- Anova Food, LLC
- Coral Triangle Processors, LLC
- PT. Harta Samudra
- North Buru Fair Trade Fishermen Associations

RE: Support for the Client Action Plan for the Marine Stewardship Council (MSC) certification of the North Buru and Maluku Fair Trade fishing association, Indonesian handline yellowfin tuna fishery

Dear client group,

Thank you for sharing with AP2HI the draft MSC assessment results and your proposed Client Action Plan.

AP2HI is responsible for the promotion and support of sustainable one-by-one tuna fisheries in Indonesia. We have done this by actively supporting Fisheries Improvement Projects (FIPs) in the handline and pole and line fisheries of our members, geared towards obtaining MSC certification. We work in partnership with the International Pole & Line Foundation (IPNLF) and Yayasan Masyarakat dan Perikanan Indonesia (MDPI) under the Indonesian Coastal Tuna Alliance. Harta Samudra is one of our members and their international partner, Anova, is a member of IPNLF.

AP2HI fully supports the actions set in the Client Action Plan, both in promoting a harvest strategy and harvest control rules for yellowfin tuna within Indonesian Archipelagic Waters and together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP). We will also support the implementation of and compliance with the AP2HI code of conduct as a type of informal/customary measure to manage the impact of ETPs and FADs of our members source fisheries (which include handline) in a way that it supports the delivery of management outcomes consistent with MSC Principles 1 and 2. We confirm our intention to take forward all actions in the Client Action Plan where we have been identified as identified a responsible party.

Yours Sincerely,

Janti Djuari
Chairwoman

Griya Upakara Building Unit 3C
Jl Cikini IV No.10 Menteng, Central Jakarta 10330 Indonesia
Phone : +62 21-21236469 | Email : info@ap2hi.org | www.indonesiantuna.com



17 October 2019

To the Client Group:

- Anova Food, LLC
- Coral Triangle Processors, LLC
- PT. Harta Samudra
- North Buru Fair Trade Fishermen Associations

RE: Support for the Client Action Plan for the Marine Stewardship Council (MSC) certification of the North Buru and Maluku Fair Trade fishing association, Indonesian handline yellowfin tuna fishery

Dear Client Group,

Thank you for sharing with IPNLF the draft MSC assessment results and your proposed Client Action Plan.

IPNLF works to develop, support and promote socially and environmentally responsible coastal tuna fisheries around the world through on-the-water fisheries improvements, enhanced traceability, advocacy for science-based management, and market engagement. In Indonesia we work with our partners Asosiasi Perikanan Pole & Line dan Handline Indonesia (AP2HI) and Yayasan Masyarakat dan Perikanan Indonesia (MDPI) to actively support Fisheries Improvement Projects (FIPs) in the handline and pole-and-line fisheries. Anova is a member of IPNLF and Harta Samudra is a member of AP2HI and we are therefore committed to work with them to improve the sustainability of the one-by-one tuna fisheries within their supply chains.

IPNLF fully supports the actions set by in the Client Action Plan, especially those that promote the development and adoption of a harvest strategy and harvest control rules for yellowfin tuna within Indonesian archipelagic waters. We confirm our intention to take forward all actions in the Client Action Plan where we have been identified a responsible party.

Yours sincerely,

Martin Purves

Managing Director
International Pole & Line Foundation

International Pole & Line Foundation
7-14 Great Dover Street, London, SE1 4YR, United Kingdom
Registered charity no. 1145386
info@ipnlf.org www.ipnlf.org



**MINISTRY OF MARINE AFFAIRS AND FISHERIES
OF THE REPUBLIC OF INDONESIA**
DIRECTORATE GENERAL OF CAPTURE FISHERIES
Mina Bahari II Building, Medan Merdeka Timur Street No. 16, Jakarta 10110
Telp. +62 21 3519070, ext. 1002, Fax. +62 21 3543008, www.kkp.go.id

Ref: B.15262/DJPT/TV.210-D1/X/2019

October, 15, 2019

1. Mr. Saut Tampubolon, Executive Director,
Masyarakat dan Perikanan Indonesia (MDPI)
2. Coral Triangle Processors, LLC
3. PT. Harta Samudra
4. North Buru Fair Trade Fishermen Associations

Subject: Support for the Client Action Plan for the Marine Stewardship Council (MSC) certification of the North Buru and Maluku Fair Trade fishing association, Indonesian handline yellowfin tuna fishery

Dear Sirs,

Referring to the letter from Masyarakat dan Perikanan Indonesia (MDPI) No. 108/MDPI-ADM/X/2019, dated 9 October 2019, MDPI has shared the draft of MSC Fishery Report and proposed Client Action Plan with the Ministry of Marine Affairs and Fisheries (MMAF). We understand the importance of MSC process for the sustainable and improvement of Indonesian handline yellowfin tuna fishery, particularly certification for the North Buru and Maluku Fair Trade fishing association.

MMAF c.q. Directorate of Fish Resource Management, Directorate General of Capture Fisheries is responsible to undertake the management of fisheries resources in Indonesia through establishing national regulations and policies. In terms of tuna fisheries management, MMAF already established National Tuna Management Plan (NTMP) for 2015-2019 through Minister Regulation Number 107/KEPMEN-KP/2015 which is being reviewed and updated for 2020-2024. One of the NTMP action plans is to develop harvest control rule, as one of components in harvest strategy, for tropical tuna fisheries within Indonesian archipelagic waters that is compatible with regional standards. Therefore, MMAF in principle supports the action set in the Client Action Plan.

Thank you for your kind cooperation.

Sincerely Yours,

Syahril Abd. Raup
Interim Director of Fish Resources Management

Cc.
Director General of Capture Fisheries.

7. Appendix 2 Peer Review

7.1 Peer Reviewer A

7.1.1 General Comments

Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	The background section is exceptionally well reasoned, with consistent references to the MSC standard. For most part the scoring reflects the evidence presented, however, in P3 there were a few places in the evaluation table where I thought that considering the size of this UoA, the CAB was too strict with the scoring as judging by the rationals provided, the fishery is well managed for its size.	No response necessary. For Principle 3 comments see specific comments on each PI
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	Conditions all seem feasible with the exception of those raised under P3 as there is not much they can do to improve the strategy to manage the impact of the fishery as the UoA is exceptionally small.	No response necessary. For Principle 3 comments see specific comments on each PI
Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	Yes	The clients action plan is clear in all conditions raised, except for the conditions raised under P3 as the Client does not really have an influence over that.	No response necessary. For Principle 3 comments see specific comments on each PI
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?			NA

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	As mentioned above the report is set out well, with extensive background and the evaluation table is for most parts well reasoned. However, there are some scoring issues in P2, which need to be more fleshed out as the scoring has not been supported by the rational given.	Comments on scoring for the P2 rationales for primary species are addressed in the PI comments section.
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7.1.2 PI Comments

PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code
1.1.1	Yes	Yes	NA	Agreed. Fishery is harmonized	No response required.	Accepted (no score change)
1.1.2	Yes	Yes	NA	Not scored	No response required.	Accepted (no score change)
1.2.1	Yes	Yes	Yes	Agreed. Fishery is harmonized	No response required.	Accepted (no score change)
1.2.2	Yes	Yes	Yes	Agreed. Fishery is harmonized	No response required.	Accepted (no score change)
1.2.3	Yes	Yes	NA	Agreed. Fishery is harmonized	No response required.	Accepted (no score change)
1.2.4	No (no score change expected)	No (no score change expected)	NA	(SI a) The rational for this evaluation table needs to be extended by referring to which major features are taken into account etc.	The rationale now includes additional details on the datasets and information included in the assessment. See PI 1.2.4 SI a	Accepted (no score change)

1.2.4	No (no score change expected)	No (no score change expected)	NA	(SI b) Which are the generic reference points? How are they appropriate for the stock? More detail is needed here.	The generic target reference points for yellowfin tuna are now included in the rationale See PI 1.2.4 SI b	Accepted (no score change)
1.2.4	No (no score change expected)	No (no score change expected)	NA	(SI c) Which are the alternative hypothesis? How have they been rigorously explored? More detail is needed here as well.	The alternative hypothesis and testing of the model are now described for yellowfin in the rationale See PI 1.2.4 SI c	Accepted (no score change)
2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	The background for P2 is very thorough, but the rational reasoning in the PI 2.1.1 evaluation is very brief and it is not supported by any graphs, which makes the interpretation of the relevant scores very difficult.	The rationale for PI 2.1.1 SI a now includes references to the graphs in the background that support the rationale.	Accepted (no score change)
2.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, here, it would be good if some rationals, besides the generic words, could be provided here.	The rationale now clarifies that following GSA3.5.1 on account of the negligible impact of the UoA has on the component scoring issue (a) does not need to be scored for SG60 and SG80.	Not accepted (no score change)
2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	(c) Please elaborate here as well. What measures that need to be supported? What is the partial strategy? Again, only the generic words are used in the rational and it really does need more explanation.	The rationale now clarifies that following GSA3.5.1 on account of the negligible impact of the UoA has on the component scoring issue (a) does not need to be scored for SG60 and SG80.	Not accepted (no score change)
2.2.1	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)
2.2.2	Yes	Yes	NA	Agreed	No response required.	Accepted (no score change)
2.2.3	Yes	Yes	NA	Agreed	No response required.	Accepted (no score change)
2.3.1	Yes	Yes	NA	Agreed. Well reasoned.	No response required.	Accepted (no score change)
2.3.2	Yes	Yes	NA	Agreed. Well reasoned.	No response required.	Accepted (no score change)
2.3.3	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)

2.4.1	Yes	Yes	NA	Agreed, with solid rationals.	No response required.	Accepted (no score change)
2.4.2	Yes	Yes	Yes	Agreed	No response required.	Accepted (no score change)
2.4.3	Yes	Yes	Yes	Agreed.	No response required.	Accepted (no score change)
2.5.1	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)
2.5.2	Yes	Yes	No	Agreed	No response required.	Accepted (no score change)
2.5.3	Yes	Yes	NA	Agreed	No response required.	Accepted (no score change)
3.1.1	Yes	No (score increase expected)	No	<p>(a) Given the size and scale of the fishery, customary frameworks capable of delivering sustainability in the UoA(s) in accordance with P1 and P 2 are acceptable (MSC standard v2.01, SA4.3.1). I honestly think, considering the above, that this fishery is too small to expect the more formalized frameworks expected for larger fisheries. At the moment they are not able to catch the contribution allocated to them. I suggest that you reconsider your score and lift the condition.</p>	<p>We agree that considerations need to be awarded to scale and intensity of the fishery. For this reason we've accepted informal and traditional approaches to meet this PI, and are not requiring formalized frameworks. Independent of scale, the assessment team agrees with the importance of the clause cited by the peer reviewer requiring "[...] an appropriate and effective legal and/or customary framework that is capable of delivering sustainability the the UoA(s) in accordance with P1 and P2" (SA4.3.1).</p> <p>As described in SI a of this PI, the formal legal frameworks at the national and regional level are not applicable to the UoA, making the informal frameworks established through the Fair Trade fishing associaiton the effective structure, however, there are essential features (i.e. when and where people can fish, who can fish, how they can fish, how much they can catch, etc) which are not available within this framework. Despite the small scale of the fishery, the team considers it necessary to have an effective system that is compatible with the relevant WCPFC instruments. For this reason the assessment team considered that there is not a fully effective system that meets the SG80 at the moment.</p> <p>Lastly, regarding the peer reviewer's comment: "At the moment they are not able to catch the contribution allocated to them [...]", it's unclear to which catch limits the peer reviewer is referring to, as there are currently no limits of effort or catch applicable to the UoA.</p>	Not accepted (no score change)
3.1.2	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)
3.1.3	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)

3.2.1	Yes	No (score increase expected)	Yes	Agreed, however, also here the fishery is so small and the effect would be negligible, therefore I am not convinced that they don't deserve a score of SG80, without a condition. Maybe, you could reconsider giving it a higher score.	We agree that considerations need to be awarded to scale and intensity of the fishery. For this reason we've accepted informal and traditional approaches to meet this PI. Although the impacts of the FAD component of the fishery are negligible, as stated in PI 2.4.1, there is also the potential risk of an increase in number of AFADs leading to an increase in impact on the Habitat component. For this reason the assessment team considers it important for the fishery specific objectives ensure that the UoA continues to not cause any serious or irreversible harm to habitat structures.	Not accepted (no score change)
3.2.2	Yes	Yes	NA	Agreed.	No response required.	Accepted (no score change)
3.2.3	Yes	No (score increase expected)	NA	(c) Which part of the fishery-specific management system is not met, considering the size of this fishery. Again, you might want to revisit your score here as I believe this could be higher.	SI c at the SG100 level requires "There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery" One of the fishery-specific management requirement applicable to the UoA is the registration of their small-scale fishing vessels at the nearest fisheries authority. Not all vessels in the UoA are registered. For this reason the assessment team concluded the fishery met the SG80, but not the SG100 for this scoring Issue. We've added further details in the PI scoring table in response to this comment.	Not accepted (no score change)

3.2.4	Yes	No (score increase expected)	NA	<p>(c) Again here, what parts of the fishery-specific management plan are not being evaluated? Please reconsider this for a higher score.</p>	<p>The comment refers to SI (c). However, there are only two scoring issues in this PI. We assume the Peer Reviewer is referring to scoring issue (a), which at the SG100 level requires that "There are mechanisms in place to evaluate <u>all</u> parts of the fishery-specific management system.</p> <p>MSC guidance (GSA 4.10 Standard v2,01) indicates that relevant parts of the fishery-specific management system may include:</p> <ul style="list-style-type: none"> • <i>A decision-making process that responds to both wider management issues of stock wide, and/or specific local stakeholder concerns;</i> • <i>Data collection;</i> • <i>Scientific research;</i> • <i>MCS (i.e., Compliance and Enforcement PI 3.2.3);</i> • <i>Collaborating in and initiating a fishery-specific or national research plan;</i> • <i>Responding to feedback and response, and</i> • <i>Monitoring systems as required by the Management Strategy and Information PIs in P1 and P2.</i> <p>The team determined that the SG 80 is met as there are mechanisms in place to evaluate key parts of the fishery.</p> <p>However, as noted in PI 3.1.1 SI and PI 3.2.1 there are several several aspect missing in the customary management framework necessary to deliver management outcomes consistent with Principles 1 and 2, thus it's impossible for there to be a mechanism in place to evaluate parts of the fishery-specific management system that are not currently in place.</p>	Not accepted (no score change)
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7.2 Peer Reviewer B

7.2.1 General Comments

Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Yes it is consistent with MSC standards. And in the case of P1, is consistent with harmonization (see General Comments, below). Note that I have agreed with all of the P! scores, consistently with that harmonization and the scores of recent west Pac YFT evaluations.	No response required.
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	1.2.1 and 1.2.2 Conditions are common to West Pac YFT, as are the other clients' action plans (see General Comments, below). Conditions on 2.4.2 and 2.4.3 relate lack of habitat management, information and monitoring related to FAD interactions and is achievable in the surveillance time frame. Condition on PI 3.1.1 (a) Compatibility of laws or standards with effective management was based on a lack of a Malukuan management plan.	No response required.
Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	Yes	P1 action plans consists of developing client coalitions to influence WCPFC. The WCPFC has a work schedule to address this, but it remains to be seen if that schedule will be adhered to. Thus, the client action plan is to work with other clients to participate in the WCPFC process (see General Comments, below). This is appropriate. P2 action plans are appropriately defined by developing habitat/FAD management approaches and monitoring. P3 action plan is (appropriately) to develop and formalize local management plan.	No response required.
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	No	Not Applicable. Not an enhanced fishery	No response required.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	<p>There have been many MSC P1 evaluations for WEST Pac YFT and there has been a harmonization process. This report mentions that process without going into detail. I looked up some of the recent ones and this report is largely identical in scores, especially to the recent ones. This is a good thing. But I think the report would benefit from a discussion/table of the other fisheries. This would serve two purposes: 1) it would add strength to the consensus of opinion; and 2) since all of the fisheries are faced with Conditions relating to 1.2.1 and 1.2.2 (HS and HCR) and meeting these Conditions require interaction with the WCPFC to implement the HCR,; then having a list of other fisheries with the same problem would facilitate the formation of coalitions. This was intimated in the client's action plan "CABs of other MSC fisheries with the same conditions of certification to discuss how to align and coordinate our Client Action Plan activities to address these conditions. For this activity, the client will participate in the Western and Central Pacific Ocean (WCPO) Tuna Marine Stewardship Council (MSC) Alignment Group"</p> <p>Editorial:</p> <p>Top of page 69: text says "" ...are active in the research on them, so we consider it highly likely that they would disrupt key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm." I believe it should be highly unlikely, not highly likely.</p> <p>Table 10: the skipjack row. I believe the MSC Class for FAD Sets should be primary-main and then primary-minor for free sets.</p> <p>Fig 27 caption: the caption refers to blue and red lines relating to "former" and "latter" cases; former and latter are not defined.</p>	<p>We've now included a table of all of the currently certified and under assessment fisheries in the Western Pacific Ocean under the Harmonization section.</p> <p>Top of page 69 [now page 68] we've fixed the typo.</p> <p>Table 10 we've fixed the typo.</p> <p>Fig 27 [now Figure 37]. Caption now includes explanation of blue and red lines</p>
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7.2.2 PI comments

PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
1.1.1	Yes	Yes	Yes	Scoring Agreed	No response required.	Accepted (no score change)
1.1.2	Yes	Yes	NA	Scoring Agreed Stock not overfished, hence no recovery requirement.	No response required.	Accepted (no score change)
1.2.1	Yes	Yes	Yes	Scoring Agreed Condition will address deficiency in HS (see General Comments). Note Report's comments on 1.2.1 a: "Nevertheless, the general stock decline for yellowfin (albeit with a recent increase in stock size), the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, reduces the level of confidence that the harvest strategy would be responsive to the state of the stock or that the elements will work together when required to do so to achieve the management objectives."	No response required.	Accepted (no score change)
1.2.2	Yes	Yes	Yes	Scoring Agreed Condition will address deficiency in HCR (see General Comments and comments on 1.2.1 above)	No response required.	Accepted (no score change)
1.2.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)

1.2.4	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.1.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.1.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.1.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.2.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.2.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.2.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.3.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.3.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.3.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.4.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.4.2	Yes	Yes	Yes	Scoring Agreed	No response required.	Accepted (no score change)
2.4.3	Yes	Yes	Yes	Scoring Agreed	No response required.	Accepted (no score change)
2.5.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.5.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
2.5.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.1.1	Yes	Yes	Yes	Scoring Agreed Condition required on 3.1.1 a to develop and implement local Mulukuan	No response required.	Accepted (no score change)

				management plan to complemnt WCPFC and Indonesian national plans		
3.1.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.1.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.2.1	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.2.2	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.2.3	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)
3.2.4	Yes	Yes	NA	Scoring Agreed	No response required.	Accepted (no score change)

7.2.3 Follow-up comments to PCDR

General Comments

Peer Reviewer comments at Public Comment Draft Report stage Insert additional rows for each clearly distinct issue raised.	CAB response to Peer Reviewer's Public Comment Draft Report stage comments (as included in Final Draft Report)
<p>The P1 scores for this stock are governed by the harmonization process established by the MSC and the schedule for meeting the P1 SG 80 requirements. For the CAB, the basis of scoring becomes, then, "what actions the RFMO has taken subsequent to the harmonization?" For the peer reviewer, the basis is the CAB report, which again relies on the harmonization. This process makes it difficult for peer review to insert itself into this protocol. It seems a harmonization becomes the established MSC policy. The justification would benefit from a discussion of the harmonization: when did it take place? What actions if any were taken by the RFMO since then? Is there evidence that the situation has changed?</p> <p>To alleviate some of these problems, I strongly recommend that any conditions related to P1 be reviewed annually jointly by all CABs (who have certified clients fishing on a P1 tuna stock) and not left to piece-meal responses of individual CABs. This should be done shortly after the annual RFMO meeting. Otherwise, the responses to "progress" at the annual surveillance will be varied. Additionally, since individual CAB surveillances will occur at different times in the annual cycle, there will be differences in the perception of what the information base is for making the reviews. This would also allow a client wishing to obtain a new tuna certification to have a more predictable measure of their status in regards to P1.</p>	<p>SCS wholeheartedly agrees with the comments from the peer reviewer. We believe an organized annual approach to harmonization is critical. However, it's unfeasible for a single individual CAB to lead this effort, and hope that MSC will soon address this issue.</p> <p>We've added additional details on progress of harmonization to date in Section 3.6 of this report.</p>
<p>In regards to the WCPFC yellowfin stock given the arguments outlined by the ISSF stakeholder and others:</p> <p>While harmonization has occurred, that event is receding into the past and actions taken or not taken by the RFMO should affect any subsequent scoring. The justification would benefit from a discussion of the harmonization: when did it take place? What actions if any were taken by the RFMO since then? Is there evidence that the situation has changed? As a peer-review, I agree that the existing P1 scoring for this stock is consistent with the MSC policy. However, as mentioned above, there is a need for continued harmonization. It is not a one-time event.</p>	<p>Please see response above.</p>

PI comments

PI	PR Comm- ent Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Res- ponse Code
<i>Perfor- mance Indica- tor (PI)</i>	<i>Is the CAB response to the PR's comments adequate?</i>	<p><i>PR's should describe any concerns with the CAB's responses to their initial comments, on either PI scoring (including the RBF) or conditions. Comments at this stage should summarise any initial comments made by the PR at the previous PRDR stage, and detail those responses of the CAB (as provided in the PCDR) which are regarded as either incomplete or inconsistent with the MSC requirements. The comments in this column should be summarised in the PR Comment Code Column H.</i></p> <p><i>Additional rows should be inserted for any PIs where two or more discrete comments are raised e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells where useful, using the Alt-return key combination.</i></p> <p><i>Detailed justifications are only required at this stage where answers given are one of the 'No' code options and the CAB responses are regarded as insufficient to address the PR's previous concerns. In other (Yes) cases, either confirm 'scoring agreed' here or identify any places where weak rationales could still be further strengthened (without any implications for the PI scores).</i></p>	<p><i>CAB response to the PR's PCDR stage comments (as included in the Final Draft Report).</i></p> <p><i>CABs should summarise their response to the Peer Reviewer comments in the CAB Response code column and provide justification for their response in this column.</i></p>	<i>See codes page for response options</i>
1.1.1	Yes	Scoring Agreed		
1.1.2	Yes	Scoring Agreed		
1.2.1	Yes	Scoring Agreed		

8. Appendix 3 Stakeholder Submissions

Table 23. Summary of Stakeholder Submissions

Organization	Representative	Date Received	Medium of submission (verbal/written)	Summary of verbal sub. /Section in report written sub.	Associated Quotes Numbers
PNAO	Richard Banks & Les Clark	26 February 2019	Attachment to email submission	Copy of written submission and response is included below.	NA
MSC	NA	18 December 2019	Technical Oversight (Email Attachment)	Copy of written submission and response is included in this section	NA
ISSF	NA	23 December 2019	Attachment to email submission	Copy of written submission and response is included in this section	NA
PNAO	Richard Banks & Les Clark	March 14 th , 2020	Attachment to email submission	Copy of written submission and response is included below.	NA

The stakeholder submissions and SCS's response are included in the subsequent pages:

8.1 PNAO Comments

8.1.1 Comments submitted during Announcement

Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments		
<input checked="" type="checkbox"/> Fishery announcement and stakeholder identification ⁹ Opportunity to indicate that you are a stakeholder and identify other stakeholders.		26 February, 2019	PNA Office		
Nature of Comment (select all that apply)		Additional Information/Detail Please attach additional pages if necessary.			
e. g. <input checked="" type="checkbox"/> I wish to indicate that I am a stakeholder in this fishery. Please keep me informed about each stage of the assessment process. <input type="checkbox"/>	PNA is the body responsible for administering the longline VDS, as applicable to 9 countries operating in the Western and Central Pacific Ocean Fisheries Management CMM 2014-06 Conservation and Management Measures to develop and implement a harvest strategy approach for key fisheries and stocks in the WCPO - https://www.wcpfc.int/doc/cmm-2014-06/conservation-and-management-measures-develop-and-implement-harvest-strategy-approach				
<input checked="" type="checkbox"/> I wish to suggest information or documents important for the assessment of this fishery (<i>you may either attach documents or provide references</i>).	Specific information on the Governance Regime is available in the PNA free school assessment. However, additional references WCPFC (2000) Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Available at https://www.wcpfc.int/doc/convention-conservation-and-management-highly-migratory-fish-stocks-western-and-central-pacific				
<input type="checkbox"/> I wish to suggest other individuals or organisations who should be considered stakeholders in the MSC assessment of this fishery (<i>please provide contact information</i>).	WCPFC (2017). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Fourteenth Regular Session of the Commission Manila, Philippines, 3 - 7 December 2017. Attachment U Available at https://www.wcpfc.int/system/files/WCPFC14%20Summary%20Report%202017_%20Issued%2016%20March%202018_complete.pdf WCPFC (2018) The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, 15th Regular Session of the WCPFC, Hawaii Convention Center, Honolulu, Attachment U, December 14, 2018. Available at				
<input type="checkbox"/> Other (please specify)					

⁹ MSC Fisheries Certification Requirements, v2.0 section 7.8

Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments		
<input type="checkbox"/> Defining the assessment tree¹⁰ Opportunity to review and comment on the assessment tree in relation to the fishery if a modified tree is used.					
Nature of Comment (select all that apply)		Additional Information/Detail Please attach additional pages if necessary.			
e. g. <input type="checkbox"/> I DO NOT believe the <u>proposed modifications</u> to the default assessment tree (FCR Annex SA) are appropriate to assess this fishery (<i>please provide details and rationale</i>).	<i>Example: This is an unusual fishery in that there is significant habitat modification to the area from the growing structures in place. I think the default set of performance indicators in the standard MSC assessment tree do not evaluate this type of impact well. Therefore I think the assessment team should consider adding some additional performance indicators against which to evaluate the impacts of the habitat modification that doesn't exist in normal capture fisheries.</i>				
<input type="checkbox"/> I DO NOT think the RBF should be used to assess the Performance Indicator(s) ticked below because there is sufficient information available to follow the conventional process ¹¹ (<i>please provide details and rationale</i>). <div> <input type="checkbox"/> 1.1. <input type="checkbox"/> 2.1. <input type="checkbox"/> 2.2. <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 </div> <div> <input type="checkbox"/> 2.3. <input type="checkbox"/> 2.4. <input type="checkbox"/> 2.5. <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 </div>					
<input type="checkbox"/> I DO think the RBF should be used to assess the Performance Indicator(s) ticked below because there is NOT sufficient information available to follow the conventional process (<i>please provide details and rationale</i>). <div> <input type="checkbox"/> 1.1. <input type="checkbox"/> 2.1. <input type="checkbox"/> 2.2. <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 </div> <div> <input type="checkbox"/> 2.3. <input type="checkbox"/> 2.4. <input type="checkbox"/> 2.5. <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 </div>					
<input type="checkbox"/> Other (please specify)					

Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments
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¹⁰ [MSC Fisheries Certification Requirements, v2.0 section 7.7](#)

¹¹ [MSC Fisheries Certification Requirements, v2.0 section 7.7.6](#)

<input type="checkbox"/> Information gathering and stakeholder meetings ¹² Opportunity to engage with and provide information to the CAB about the specific details and impacts of the fishery.			
Nature of Comment (select all that apply)	Additional Information/Detail Please attach additional pages if necessary.		
<input checked="" type="checkbox"/> I wish to request an in-person meeting with the site team during their assessment visit (meetings without the fishery client present may be requested at this phase of the process if desired).	We would be available to discuss via Skype		
e. g. <input checked="" type="checkbox"/> I wish to submit written information about the fishery and its performance against the default tree and/or RBF to the assessment team (<i>please provide documents or references</i>).			
<input type="checkbox"/> Other (please specify)			
Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments
<input type="checkbox"/> Public review of the draft assessment report ¹³ Opportunity to review			

¹² [MSC Fisheries Certification Requirements, v2.0, section 7.8.4](#)

¹³ [MSC Fisheries Certification Requirements, v2.0 section 7.15](#)

and comment on the draft report, including the draft scoring of the fishery.			
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☐ I wish to comment on the evaluation of the fishery against specific Performance Indicators. *A table with these indicators and the scores and rationales provided by CABs can be found in Appendix 1 of the draft assessment report.*

Nature of comment *(Please insert one or more of these codes in the second column of the table below for each PI.)*

1. I do not believe all the relevant information¹⁴ available has been used to score this performance indicator *(please provide details and rationale)*.
2. I do not believe the information and/or rationale used to score this performance indicator is adequate to support the given score¹⁵ *(please provide details and rationale)*.
3. I do not believe the condition set for this performance indicator is adequate to improve the fishery's performance to the SG80 level¹⁶ *(please provide details and rationale)*.
4. Other *(please specify)*

¹⁴ [MSC Fisheries Certification Requirements, v2.0 section 7.10](#)

¹⁵ [MSC Fisheries Certification Requirements, v2.0 section 7.10](#)

¹⁶ [MSC Fisheries Certification Requirements, v2.0 section 7.11](#)

Performance Indicator	Nature of Comment Indicate relevant code(s) from list above.	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.
PI 1.2.1	1	<p>1.2.1 (a) PNA submits that the lack of a compatible management regime for AW suggests that the Performance Indicator fails to take account of the Archipelagic Waters (AW) management zone. We refer to MSC 2.0 FCR p. 389: "When considering management PIs under P1 in fisheries that target shared stocks, straddling stocks, or highly migratory stocks, CABs should consider all national and international management systems that apply to the stock and the capacity of these systems to deliver sustainable outcomes for P1." We submit that these are to be treated as two scoring elements within 1.2.1 and 1.2.2, and scored as such – as in FCR 7.10.7, especially Table 4.</p> <p>Indonesia does not apply a compatible harvest strategy for its AW, 713,714 and 715, and does not apply Compatible measures, consistent with the WCPFC Convention.</p> <p>We would also suggest that assessors demonstrate, with a high degree of confidence, that the application of WCPFC Harvest Strategy (now CMM 2018-01) is sufficiently effective, even if not applied to a small part of the stock (AW and the Indonesian EEZ), noting that a failure by one CCM to address the application of a strategy requires the participants in the WCPFC, i.e PNA, to apply elements of the strategy disproportionately.</p>
1.2.2	2	<p>1.2.2 (b) HCRs are not in place in Indonesia AW that are expected to reduce the exploitation rate as the PRI is approached. Indonesia has not set input or output measures for AW. Therefore, the fishery does not meet SG60 for this PI.</p> <p>1.2.2 (b) Given that Indonesia does not have HCRs, there cannot be evidence available that HCRs are appropriate and effective in controlling exploitation. In terms of Indonesia's commitment to implementing the WCPFC Tropical Measure, the country has not applied the required measures to 'other commercial fisheries', which includes the handline fleet. This further demonstrates that no effective control measures are in place</p> <p>We would question the need and veracity for this fishery to be harmonised with other assessments on the basis that the total catch as a proportion of all MSC Certified UoAs provides sufficient leverage, and the catch taken from this fishery for both species is very small, relative to the whole</p>

3.1.1		<p>PNA does not believe that the framework for cooperation with other parties is demonstrably 'effective' because it fails to deliver management outcomes from an international framework for cooperation consistent with the WCPFC Tuna management Measure (2018-01), as specified in Principles 1 (Harvest Strategy). Harvest strategies for Pacific tuna are set out in WCPFC Tropical Tuna measure, which is reviewed annually. The current measure is WCPFC CMM 2018-01. Measures include effort limits for purse seine fisheries, and limits on effort for 'other commercial fisheries. Indonesia is bound to apply management actions to its defined EEZ areas – WPP 716 and 717, which are determined by Indonesia to be part of the Convention area.</p> <p>Indonesia was deemed non-compliant in the WCPFC's Compliance Monitoring Review process in implementing several obligations laid out in WCPFC conservation and management measures during 2016 (Attachment U, WCPFC 2017). In relation to the tropical tunas measure (then, CMM 2015-01), these included:</p> <ul style="list-style-type: none"> • Para 16 – missed reporting deadline notifying the Secretariat of additional FAD measures (i.e. fourth month FAD closure in October or limit on the total number of FAD sets) • Para 23 – failure to establish effort limits or equivalent catch limits for purse seine fisheries within the EEZ that reflects the geographical distributions of skipjack, yellowfin and bigeye tunas and are consistent with the objectives for those species; missed reporting deadline to notify the Secretariat of effort/catch limits. • Para 24 – failure to report limits established under para 23 and their bases in Annual Report Part 2 and annual reporting of fishing days for the previous 12-month calendar. • Para 34 – Less than 100% observer coverage on purse seine vessels fishing solely within its national jurisdiction • Para 44 – failure to report monthly on longline bigeye catch by Indonesian flagged vessels <p>Paras 47 & 48 were not assessed in the CMR in 2017, however, it is understood that Indonesia was yet to take measures to ensure the total effort and capacity of other commercial tuna fisheries for bigeye, yellowfin and skipjack do not exceed 2001-2004 or 2004 levels.</p> <p>Also review Attachment U, WCPFC 2018 in reference to the application of measures in 2016..</p> <p>The assessors must be able to demonstrate not only that compatible measures are being 'effectively' applied in the form of vessel day management but that there is a demonstrable 'organized' and effective national and international legal systems consistent with delivering management outcomes consistent with MSC Principles 1 and 2. As stated above, no such compatible and/or effective measures are being applied in these Indonesia UoAs</p> <p>PNA's understanding of the term effective requires the power to produce,</p>
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Performance Indicator	Nature of Comment Indicate relevant code(s) from list above.	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.
		or the actual production of, an effect or effective action and remedy. Effectual is used especially to mean that which produces the effect desired or intended or produces a decisive result.

8.1.2 SCS Response to Announcement Comments

Comment Number	Performance Indicator	Summary	Team Response*
1	1.2.1	<p>1.2.1 (a) PNA submits that the lack of a compatible management regime for AW suggests that the Performance Indicator fails to take account of the Archipelagic Waters (AW) management zone. We refer to MSC 2.0 FCR p. 389: “When considering management PIs under P1 in fisheries that target shared stocks, straddling stocks, or highly migratory stocks, CABs should consider all national and international management systems that apply to the stock and the capacity of these systems to deliver sustainable outcomes for P1.” We submit that these are to be treated as two scoring elements within 1.2.1 and 1.2.2, and scored as such – as in FCR 7.10.7, especially Table 4. Indonesia does not apply a compatible harvest strategy for its AW, 713,714 and 715, and does not apply Compatible measures, consistent with the WCPFC Convention.</p> <p>We would also suggest that assessors demonstrate, with a high degree of confidence, that the application of WCPFC Harvest Strategy (now CMM 2018-01) is sufficiently effective, even if not applied to a small part of the stock (AW and the Indonesian EEZ), noting that a failure by one CCM to address the application of a strategy requires the participants in the WCPFC, i.e PNA, to apply elements of the strategy disproportionately.</p>	<p>MSC guidelines require that Principle 1 evaluate the whole target stock and the assessment of the harvest strategy and harvest control tools to control exploitation of the whole stock under assessment.</p> <p>This is a harmonized score and rationale which is based on full consideration of MSC requirements by a range of P1 experts. MSC requires harmonization of P1 scores and conditions for overlapping fisheries, as described in Annex PB and Annex GPB3. We share concerns about the application of WCPFC harvest strategy and other measures within Indonesian waters and these have been evaluated under Principle 3 (PI 3.1.1) and factored into the scores assigned for those PIs. However, we note that PI 3.1.1 does not to replace the evaluation of the design and application of the harvest strategy and Harvest Control Rules under Principle 1.</p>
2	1.2.2	<p>1.2.2 (b) HCRs are not in place in Indonesia AW that are expected to reduce the exploitation rate as the PRI is approached.</p>	<p>This is a harmonized score and rationale which is based on full consideration of MSC requirements by a range of P1 experts. MSC</p>

		<p>Indonesia has not set input or output measures for AW. Therefore, the fishery does not meet SG60 for this PI.</p> <p>1.2.2 (b) Given that Indonesia does not have HCRs, there cannot be evidence available that HCRs are appropriate and effective in controlling exploitation. In terms of Indonesia's commitment to implementing the WCPFC Tropical Measure, the country has not applied the required measures to 'other commercial fisheries', which includes the handline fleet. This further demonstrates that no effective control measures are in place</p> <p>We would question the need and veracity for this fishery to be harmonised with other assessments on the basis that the total catch as a proportion of all MSC Certified UoAs provides sufficient leverage, and the catch taken from this fishery for both species is very small, relative to the whole</p>	<p>requires harmonization of P1 scores and conditions for overlapping fisheries. This requirement is not mitigated by the size of the UoA's catch either in tonnes or as a proportion of the total catch by other fisheries (whether MSC certified or not).</p> <p>We share concerns about the application of WCPFC harvest strategy and other measures within Indonesian waters and these have been evaluated under Principle 3 and factored into the scores assigned for those PIs.</p>
3	3.1.1	<p>PNA does not believe that the framework for cooperation with other parties is demonstrably 'effective' because it fails to deliver management outcomes from an international framework for cooperation consistent with the WCPFC Tuna management Measure (2018-01), as specified in Principles 1 (Harvest Strategy). Harvest strategies for Pacific tuna are set out in WCPFC Tropical Tuna measure, which is reviewed annually. The current measure is WCPFC CMM 2018-01. Measures include effort limits for purse seine fisheries, and limits on effort for 'other commercial fisheries. Indonesia is bound to apply management actions to its defined EEZ areas – WPP 716 and 717, which are determined by Indonesia to be part of the Convention area.</p>	<p>Requirements outlined in PI 3.1.1 Sla related to cooperation, indicate that at the SG60 level there is a need for a “[...] framework for cooperation with other parties” and at the SG80 level “[...] organised and effective cooperation with other parties”.</p> <p>The assessment team agrees that the framework for cooperation is not demonstrably effective, and to this the fishery does not meet the SG80.</p>
		<p>Indonesia was deemed non-compliant in the WCPFC's Compliance Monitoring Review process in implementing several obligations laid out in WCPFC conservation and management measures during 2016 (Attachment U, WCPFC 2017). In relation to the tropical tunas measure (then, CMM 2015-01), these included:</p> <ul style="list-style-type: none"> • Para 16 – missed reporting deadline 	<p>Regarding requirements for assessing multi-level management systems under the governance and policy component of Principle 3, the MSC Interpretations log indicates that “[...] the focus is on the broad high-level context of the fishery management system <i>relative to the UoA.</i>” Consequently, the assessment team focused</p>

		<p>notifying the Secretariat of additional FAD measures (i.e. fourth month FAD closure in October or limit on the total number of FAD sets)</p> <ul style="list-style-type: none"> • Para 23 – failure to establish effort limits or equivalent catch limits for purse seine fisheries within the EEZ that reflects the geographical distributions of skipjack, yellowfin and bigeye tunas and are consistent with the objectives for those species; missed reporting deadline to notify the Secretariat of effort/catch limits. • Para 24 – failure to report limits established under para 23 and their bases in Annual Report Part 2 and annual reporting of fishing days for the previous 12-month calendar. • Para 34 – Less than 100% observer coverage on purse seine vessels fishing solely within its national jurisdiction • Para 44 – failure to report monthly on longline bigeye catch by Indonesian flagged vessels <p>Paras 47 & 48 were not assessed in the CMR in 2017, however, it is understood that Indonesia was yet to take measures to ensure the total effort and capacity of other commercial tuna fisheries for bigeye, yellowfin and skipjack do not exceed 2001-2004 or 2004 levels.</p> <p>Also review Attachment U, WCPFC 2018 in reference to the application of measures in 2016..</p> <p>The assessors must be able to demonstrate not only that compatible measures are being ‘effectively’ applied in the form of vessel day management but that there is a demonstrable ‘organized’ and effective national and international legal systems consistent with delivering management outcomes consistent with MSC Principles 1 and 2. As stated above, no such compatible and/or effective measures are being applied in these Indonesia UoAs</p>	<p>the assessment of PI 3.1.1 on the ‘national legal system and a framework for cooperation’ relative to the scope of the UoA, which targets yellowfin tuna within archipelagic waters.</p> <p>The UoA takes place in archipelagic waters, current legal interpretations exclude the application of the Commission ‘s CMMs to archipelagic and internal waters. Nonetheless, the commission requires compatible measures for archipelagic waters, which the team interprets as effective regional cooperation.</p> <p>For UoA subject to international cooperation for management of the stock, the MSC requires the establishment of effective monitoring, control, surveillance and enforcement at the SG80 level (MSC FCR v2.0 SA4.3.3.2 and guidance GSA4.3.3.2)</p> <p>The team determined that the SG80 is not met.</p> <p>The assessors, agree with the comment from PNA that compatible measures are required. However, we disagree with the stakeholder’s interpretation of the wording of the scoring guidepost for SI a PI 3.1.1,</p> <p>MSC guidance indicates that an “effective national legal system” refers to objective evidence that most of the essential features and elements needed to deliver sustainable fisheries are present in: “a. A coherent, logical set of practices or procedures, or b. Within a coherent, logical supporting ‘rule-making’ structure” (MSC FCR v2.0 SA4.3.4.3). Based on the clause above the team interprets the MSC intent as it relates to ‘effective’ to refer to an effective structure of the national legal system, not to an effective application of the measures as stated in the stakeholder comment.</p> <p>The assessment team did not find evidence supporting an “organised and effective cooperation with other parties”, as evidenced by the slow development and implementation of compatible measures, for this reason the score does not meet the SG80 for SI a PI 3.1.1</p>
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8.1.3 PNAO Comments submitted to PCDR

(PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
1.2.1	Ambiguity in the interpretation of Indonesia's commitment to the WCPFC Convention	Harmonisation may not apply when one of the main fishing nations seeks exemption from parts of the Convention. Reference to Article 3 on the Convention Area - not included waters in South China Sea and South-East Asia which are not part of the Pacific Ocean (WCPFC5-2008/OP03)	WCPFC5-2008/OP03		<p>MSC Guidance on Harmonisation of Assessment Outcomes and Conditions (MSC Fisheries Standard 2.0 GPB3) states that: <i>"Harmonisation should always be conducted for overlapping fisheries in the scoring of Principle 1, due to the requirement for the assessment to focus on the full extent of the stock and all fishery impacts upon it."</i></p> <p>MSC FCP v2.1, which incorporates extended guidance to harmonization, details that all P1 PIs require harmonization for any fisheries that have the same P1 species (See Table GPB1 in MSC FCP v2.1)</p> <p>P1 1.2.1 "[...] scores the overall performance of the harvest strategy, particularly the way that the different elements [control rules and tools in place, information base and monitoring stock status] work together to keep the stock at levels consistent with reference points."</p> <p>Consequently, the assessment team interprets that the overarching harmonized P1 score should already consider any shortcomings or limitations of the harvest strategy(ies) across different jurisdictions, as these would directly impact the capacity of the management system(s) to deliver sustainable outcomes for P1.</p> <p>Lastly, the statement cited (WCPFC5-2008/OP03) was published in 2008, when Indonesia was a cooperating Non-Member of the WCPFC. In 2013 Indonesia ratified the Convention: <i>"Under the Presidential Regulation No. 61 the Year 2013 on the Ratification of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Indonesia declared that the Convention is only implemented within Indonesia's EEZ, which also resides in the Pacific Ocean, as defined on Article 3 of the Convention, which does not cover archipelagic waters, territorial waters, and internal waters. The declaration was accepted by the WCPFC [Commission Meeting] in late 2013"</i> (WCPFC16-2019-DP22).</p>	Not accepted (no score change)

				<p>Article 8(1) of the Convention requires compatibility of conservation and management measures established for the high seas and those adopted for areas under national jurisdiction (archipelagic and territorial waters).</p> <p>Article 37, states that nor reservation or exception may be made to this Convention</p>	
1.2.1		The Client Action Plan will explicitly have to sy that Indonesia (MMAF) explicitly accepts the compatibility of WCPFC CMMs (Convention 8) for Archipleagic Waters including WPP 715.		<p>As a contracting part to the '<i>Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean</i>' Indonesia has already agreed to Article 8 on compatibility of conservation and management measures.</p> <p>Indonesia's responsibility as a member of the commission is further highlighted in Article 8(1):</p> <p><i>Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of highly migratory fish stocks in their entirety. <u>To this end, the members of the Commission have a duty to cooperate for the purpose of achieving compatible measures in respect of such stocks.</u></i></p> <p>The following additions (in red) was made to the Client Action Plan: <i>"The client group together with its partners will support the on-going work to develop and adopt tuna fisheries management measures and objectives for the Maluku Province that is aligned the National Tuna Management Plan (NTMP), including future harvest strategy and harvest control rules measures that is applicable to the UoA and that delivers sustainable fisheries outcomes in line with MSC Principles 1 and 2 and compatible with WCPFC measures established for the high seas for the yellowfin stock (including WCPFC CMM 2014-06 and subsequent amendments).</i></p> <p>The stakeholders request to specifically identify compatibility for archipelagic waters, including WPP 715, is already implicitly addressed by stating that these measures are applicable to the UoA, which operates in archipelagic waters in WPP 715.</p>	Accepted (no score change)

3.1.1	Indonesia has not implemented effective control measures consistent with Principles 1 and their obligations to WCPFC	<p>Indonesia has yet to implement input or output control measures to support the application of the WCPFC harvest strategy, as defined by WCPFC CMM 2018-01, and any compatible measures. Indonesia may possess the legal framework to support partial application of measures, but has not followed through with the application of input and outputs controls. The small scale fishery sector, which is 'another commercial fishery, has no mechanism in place to implement measures that could ensure that stock status is maintained in a healthy position, which will require modifications in harvest practices which are demonstrably compatible with Paras 50-51 of CMM 2018-01. In contrast, evidence shows that Indonesian catches continue to increase across the range of Indonesia's tuna fisheries, which include the < 5 GT handline fleet. Indonesia has consistently reported non compliance to WCPFC TCC with the requirement to control effort or catch in its 'other commercial fisheries'. Consequently, 'Indonesia's catch is expanding and Indonesia is contributing to heavy juvenile overfishing in domestic and WCPFC waters. Therefore the effectiveness of actions at the national level. are not delivered consistent with MSC Principles 1. To this end PNA has implemented the VDS and consistently complied with the CMM requirement, but the Indonesian Government has not implemented any controls on 'other commercial fisheries'.</p> <p>Para 51. CCMs shall take necessary measures to ensure that the total catch of their respective other commercial tuna fisheries for bigeye, yellowfin or skipjack tuna, but excluding those fisheries taking less than 2,000 tonnes of bigeye, yellowfin and skipjack, shall not exceed either the average level for the period 2001-2004 or the level of 2004.</p> <p>All members of the WCPFC are required to apply the rules and tools collectively, because if one or</p>	<p>Para 50-51 WCPFC 2018-01; WCPFC Annual General Session Report, 2018 (Appendix 1: 2018 Final CMR Matrix covering 2017 activities); WCPFC Tuna Fishery Yearbook 2018. Trebley Boyer et al, 2017; Pet TNC Tuna Paper on IFish: http://72.14.187.103:8080/ifish/pub/TNC_TunaTechnicalPaper.pdf</p>	<p>As outlined in the rationale for PI 3.1.1 the team agrees that currently Indonesia's national legal system alone cannot be considered to be effective as it applies for small-scale fisheries, and there is limited evidence of a coherent, logical set or practices/procedures or a coherent logical supporting 'rule-making' structure' applicable to small-scale fisheries.</p> <p>The team concluded that the combination of the national level framework <u>and</u> the customary framework through the FT USA CFS certification contain the essential features and elements needed to deliver management outcomes consistent with MSC Principle 1.</p> <p>As outlined in the rationale v1.01 of the FT USA CFS standard requires that there is a fishery management plan (FMP) that includes controls on fishing mortality, means for tracking changes in stock status, and details for how changes in stock status will lead to modifications in harvest practices. (FT USA CFS standard v1.01., clauses RM-FD 2.5) .It also requires that "Controls on fishing mortality are determined using the precautionary approach to fisheries management." (RM-FD 2.6), the guidance for this requirement clarifies that "Recommended scientific advice concerning controls on fishing mortality and other management actions should be followed where possible"</p> <p>The team believes that the intent of the select requirements in the Fair Trade CFS standard v1.01, are compatible with CMM 2018-01 overarching aim to ensure the sustainability of yellowfin tuna stock in the WCPO.</p> <p>The fishery client is actively working on developing a Fishery Management Plan to fulfill the relevant criteria in the Fair Trade USA CFS Standard. The progress of this action was verified during their previous FT USA CFS audit, conducted in 2019, and will continue to be monitored annually, as part of the FTUSA CFS requirements, and now as part of the MSC Client Action Plan.</p> <p>As a note, the reference to the Pet et al, paper indicates that the fishing of juveniles is not a main issue in handlines, but in other gear types:</p>	Not accepted (no score change)
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		<p>two don't, the burden on management falls to those that apply management controls. If Indonesia (or Philippines) fails to implement management controls, it means that PNA may have to step up and cut effort to compensate for others inaction. It is also clear that the current application of the harvest strategy measures have been implemented by the PNA but not by Indonesia. PNA's contention is that a Harvest Strategy is in existence at WCPFC level and is expected to work but has not been applied at the level of Indonesian fisheries. The consequences are that catches of by Indonesian commercial fisheries have risen significantly, resulting in heavy fishing of pre adult Juvenile tuna. Trebley Boyer et al refers to heavy fishing on juvenile yellowfin tuna in the Indonesian and Philippine EEZs, and papers by Pet et al, demonstrate heavy dependency on pre-adult yellowfin tuna, especially by the Indonesian tuna fleets. This paper refers to substantial reductions required in Indonesian fisheries effort in order to make the fisheries sustainable. The table below shows the average catches in for the periods 2001 to 2004, and the current catch, with Indonesia having exceeded the limit in its commercial fisheries by 71%-108% %, 29%-36%% and 12-36 % for yellowfin, skipjack and bigeye tuna respectively.</p> <p>Table 1: Catches by Indonesian commercial fisheries, 2001-2004 and 2018</p> <p>Source: WCPFC Year Book, 2018</p>		<p><i>"Hand lines and long lines are catching most of the Large YFT and overall selectivity continues to rise for larger fish due to deep fishing with large live baits at FADs, and surface hand line fishing and trolling for large dolphin- associated YFT. [...] A third category of fisheries can be described as harvesting Medium YFT (Haruna et al., 2018), mainly juveniles, 1 year old to 2.5 years old, weighing between 5 and 25 kg and measuring somewhere between 60 and 105 cm fork length. These fish are mainly bycatch in the various hook-and-line fisheries, as well as to some extent in purse seine, and in pole-and-line fisheries/"</i></p> <p>The assessment team agrees that at the moment there is no evidence of effective organization and cooperation to deliver management outcomes consistent with MSC Principle 1. Consequently, a condition was placed on SG80 This shortcoming is addressed with the condition issued on this PI and the relevant Client Action Plan.</p> <p>At the SG60 level the MSC standard requirements for that international cooperation for the management of the stock, focus on generation of scientific data, (UNFSA Article 10 paragraphs d, e, f, g)¹⁷ but not its implementation (See MSC Standard V2.01 GSA4.3.2.3) It's only at the SG80 level that MSC requirements on international cooperation specify that the cooperation needs to deliver, in addition to the collection and sharing of scientific data, also the <i>"the agreement and delivery of management actions consistent with this sustainable management advice, and on monitoring and control, and</i></p> <p><i>That the flag state of fishery participants in the UoA shall be members of the relevant organisation or participants in the arrangement, or agree to apply the conservation and management measures established by the organisation or arrangement if such organisation or arrangement exists (SA4.3.2.3).</i></p>	
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¹⁷ (d) obtain and evaluate scientific advice, review the status of the stocks and assess the impact of fishing on non-target and associated or dependent species;
(e) agree on standards for collection, reporting, verification and exchange of data on fisheries for the stocks;
(f) compile and disseminate accurate and complete statistical data, as described in Annex I, to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate;
(g) promote and conduct scientific assessments of the stocks and relevant research and disseminate the results thereof;

		<p>Article 8 of the Convention states that Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of highly migratory fish stocks in their entirety. To this end, the members of the Commission have a duty to cooperate for the purpose of achieving compatible measures in respect of such stocks. However, from Indonesia statement, it would appear to suggest that it disputes the boundaries of the tuna stocks, and disputes the application of compatible measures to WPP 713, WPP 714 and WPP 715.</p> <p>The completed Sorong Assessment sets out a Condition pass for 3.1 citing that The client must be in a position to demonstrate that there is an effective national legal system and an 3.1.1 organised and effective cooperation with other parties to deliver management outcomes consistent with MSC Principles 1 and 2, but PNA contends that Fisheries Law No. 45/2009 sets out the basis for an implementation arrangement, but has failed to define, by decree, the tools and system in place. Licensing and Registration, which ignore vessels < 5 GT, do not demonstrate an effective system, because there is no system in place to specifically control effort. Furthermore, the evidence in Table 1 shows that catch and effort has continued to increase.</p> <p>PNA acknowledges the actions in respect to the US Fair Trade Standard. But evidence needs to be provided that this Standard when applied is compatible with the overarching requirement to reduce effort in the fishery is compatible with CMM 2018-01. For management measures to be effective they would have to demonstrate a commitment to reduce fishing effort consistent with the objective of the CMM.</p>			<p>SCS did not conduct the Sorong Assessment. Following the MSC requirements for a fishery to meet the SG60 for PI 3.1.1 there needs to be an effective national legal [or customary] framework.</p>	
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3.1.1	Client Action Plan	<p>PNA would need to ensure that the Client makes every effort to insure that Indonesia implements an explicit management system that is compatible with 2018-01, which therefore requires that it implements Paras 50/51 measures to control effort in ALL its other commercial fisheries. Indonesia needs to demonstrate a commitment to implementing measures that will ensure the protection of yellowfin, skipjack and bigeye stocks.</p> <p>The Client Action Plan should also explicitly lay down its own measures that are demonstrably compatible with CMM 2018-01, which therefore requires an explicit commitment to controlling effort and ensuring the sustainability of the stock Measures implemented whether through the Fair-Trade USA Capture Fisheries Standard, or by Provincial regulation, will have to be demonstrably compatible with CMM 2018-01-Para 50/51. Registration and data collection, without any input or output control system, are not in any way compatible with the requirement to control effort.</p>		<p>The assessment team determined that the management system capable of delivering sustainability in the UoA, exists within a combination of jurisdictional categories applicable to the management system of the UoA, including informal/customary management systems through the Fair Trade certification scheme, formal Indonesian national and provincial management, and international cooperation requirements for straddling stocks under the WCPFC (MSC FCR v2.0 SA4.1.1). Consequently, the scope of the condition for PI 3.1.1 for this UoA, is not applicable to all Indonesian commercial fisheries, which are not part of the UoA.</p> <p>The following amends now included in the Client Action Plan for condition PI 3.1.1 –</p> <p>Under Milestone Year 1 ‘Activities’:</p> <ul style="list-style-type: none"> • In the interim of a formal management systems that is applicable to the UoA, the client group will also work to develop informal management rules concerning anchored FADs, controls on fishing mortality using a precautionary approach to fisheries management, and the sanctioning of illegal fishing activities through the Fair Trade Fishermen Associations internal rules and fisheries management plan, the AP2HI code of conduct and corresponding audit system and other means deemed appropriate. <p>Under Milestone Year 1 ‘Expected outcomes’:</p> <ul style="list-style-type: none"> • Outline of a plan to support the development of a customary framework (Fair Trade fisheries management plan following FTUSA CFS v1.01 requirements) that is applicable to the UoA and contains essential features needed to deliver sustainable fisheries outcomes consistent with Principles 1 and 2. 	Accepted (no score change)
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Table 24. Catches by Indonesian commercial fisheries, 2001-2004 and 2018. Source: WCPFC Year Book, 2018

Yellowfin	pole and line	handline (lar)	handline (sm)	Longline	Purse seine	other	Total	
2001	21,024	9,464	-	18,789	13,119	35,443	97,839	
2002	20,208	9,097	-	18,059	12,610	34,066	94,040	
2003	20,613	9,279	-	18,422	12,863	34,750	95,927	
2004	27,140	12,217	-	24,254	16,935	45,752	126,298	
2018	22,379	20,650	64,788	17,077	39,761	50,805	215,460	
2001-2004	22,246	10,014		19,257	22,747	28,661	103,526	108%
2,004	27,140	12,217	-	24,254	16,935	3,021	126,298	71%
Skipjack								
2001	103,749	-	-	-	43,673	54,861	202,283	
2002	99,720	-	-	-	41,975	52,730	194,425	
2003	101,720	-	-	-	42,817	53,788	198,325	
2004	133,927	-	-	-	56,376	70,819	261,122	
2018	103,741	-	22,347	2,289	67,665	95,363	291,405	
2001-2004	109,779			2,185	66,161	84,230	214,039	36%
2004	133,927	-	-	-	56,376	70,819	261,122	29%
Bigeye								
2001	4,528	301	-	4,224	1,755	3,959	14,767	
2002	4,352	290	-	4,060	1,687	3,805	14,194	
2003	4,439	296	-	4,141	1,721	3,882	14,479	
2004	5,845	389	-	5,452	2,266	5,111	19,063	
2018	103,741	-	22,347	2,289	67,665	95,363	291,405	
2001-2004	109,779			2,185	66,161	84,230	214,039	36%
2004	133,927	-	-	-	56,376	70,819	261,122	12%

8.2 MSC Technical Oversight Submission & SCS Response

SubID	Page Reference	Grade	Requirement Version	Oversight Description	Pi	CAB Comment
29560	105	Guidance		Table 22. Summary of conditions is incomplete. Narrative for condition 2-2 is truncated. The complete version is found on the scoring table on page 152.		Corrected
29562	97	Minor	FCR-7.6.1 v2.0	The PCDR lists the eligibility date as 6 months prior to the release of the PCDR. However, the eligibility date shall be either the date of certification of the fishery or the publication date of the PCDR.		Corrected
29563	100	Minor	FCR-7.12.1.3 v2.0	Table 19 outlines the risk factors associated with the fishery but it is unclear if the systems in place are sufficient to mitigate the risks present. For example, even if vessels fish outside the UoC on a negligible basis only, there still must be a system in place to identify non-certified fish in the event that it is caught, landed and sold. This extends to the systems needed to ensure that product caught by vessels that are not part of the UoC does not enter MSC certified supply chains; regional management may regulate aspects of the fishing activity but the specific set-up of the UoC may go beyond what is needed to demonstrate regulatory compliance.		Additional context added to Table 19 explaining the current mitigation systems in place for identifying product fished outside the area of the UoA and from vessels that are not part of the UoA.
29566	101	Minor	FCR-7.12.2.1 v2.0	The report references buyers/intermediary from the fishery fairly frequently and as central to ensuring that only certified product enters certified supply chains (upon delivery to the processor). It would be useful to provide more detail on who the buyers are (i.e. is every potential buyer included or is the list restricted) and whether the control measures identified are in place for all potential buyers especially given that they may handle certified and non-certified product.		The list of local buyers/suppliers that are included Table 18 are the existing buyers that are part of the UoA. The client would have to inform SCS of any changes in the buyers/suppliers. The control measures are already implemented for the listed buyers. Additional information to provide clarification on this points is now included in the report.

9.3 ISSF Submission & SCS Response

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
1.2.2 - Harvest control rules and tools (YFT)	The independent report by Medley et al. (2019) indicates that the fishery would not meet SG60 for SI 1.2.2.a and 1.2.2.c and that, as a result, the overall PI score would be less than 60 ("Fail").	<p>The independent report by Medley et al. (2019) indicates that the fishery would not meet SG60 for SI 1.2.2.a and 1.2.2.c and that, as a result, the overall PI score would be less than 60 ("Fail"):</p> <p>1.2.2.a: "At SG60, MSC allows a harvest control rule to be 'available' rather than 'in place' if the requirements summarised below are met (for full list see SA2.5.2, 2.5.3):</p> <ul style="list-style-type: none"> • Stock biomass has not previously been reduced below the MSY level, or has been maintained at that level for a recent period of time ... and is not predicted to be reduced below BMSY within the next 5 years; • HCRs are effectively used in other stocks by the same management body or an agreement or framework is in place requiring the management body to adopt HCRs before the stock declines below BMSY. <p>MSC's second requirement for an 'available' HCR is met for yellowfin by CMM 2014-06. In terms of the first, for WCPO yellowfin, stock biomass has not previously been reduced below the MSY level, according to the stock assessment. There are no short-term projections available at present based on the new assessment to evaluate likely stock trajectory over the next five years but as noted in 1.1.1 and 1.2.1, the probability of either SB or F being below the MSY level is quite small, and on that basis, it is not likely that the biomass will decline below the MSY level in the next five years. However, the biomass trajectory is consistently downwards throughout the time series, and there is no particular reason at present to suppose that it will stabilise above BMSY under the current management regime.</p> <p>However, the case of bigeye raises the question as to what actions WCPFC could be relied on to take, should the next stock</p>	Medley et al. (2019)	<60	<p>This is a harmonized score and rationale which is based on full consideration of MSC requirements by a range of P1 experts. It has been agreed that the stock meets the requirements for 2.5.2a and 2.5.3b and that a pass at SG60 is appropriate. It is not necessary to meet 2.5.2b and 2.5.3a as well.</p> <p>We share the concerns about slippage with the harvest strategy workplan and this has in part prompted the new VR for all tuna fisheries. The timeframe is now set.</p>	Not accepted (no score change)

		<p>assessment for yellowfin give a different perception of the stock status (as happened for bigeye in 2017). Despite bigeye being considered overfished from 2011-2017, the management actions put in place by WCPFC have shown no evidence so far of being able to reduce fishing mortality on bigeye, as shown by the most recent stock assessment. On this basis, there is no particular evidence that any 'available' HCR is able to reduce the exploitation rate as the PRI is approached. On this basis, SG60 is not met.</p> <p>For improvement in this scoring, some demonstrable progress is required towards a formal harvest strategy and HCR (as per CMM 2014-06) such that a more convincing argument can be made that effective action will be taken if required. There was no progress at WCPFC14 and it does not appear as if there was any at WCPFC15 either.</p> <p>The authors are aware that this scoring may not be consistent with the MSC certification of several fisheries targeting this stock. One reason for this difference is that this assessment is a pre-assessment, not a full assessment. A full assessment is based on a strict interpretation of the MSC requirements (scoring issues and guidance) at the time of scoring. A pre-assessment is more focused on risks to an MSC assessment failing and may be more useful to stakeholders to inform decisions about entering certification over a timeframe of a year or more, with the certification process taking a further year or so. A pre-assessment therefore needs to take into account what the situation with the stock is likely to be over this timeframe.</p> <p>We are concerned that although strictly the MSC requirements may be met at time of writing, there has been slow progress with the development of harvest strategies for WCPFC stocks since the commitment was made (CMM 2014-06 was agreed) and strict timelines are not being observed. The workplan for the implementation of CMM 2014-06 has been systematically revised, with CPCs seemingly unwilling to apply the timetable (e.g. see WCPFC14 report). Based on this situation, MSC-certified fisheries with condition milestones for the achievement of a formal harvest strategy for this stock should,</p>				
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		<p>based on MSC procedures, be first scored at audit as ‘behind target’ and subsequently (the following year) have their certificates suspended if progress has not been made. The authors are unclear as to why fisheries on these stocks have been able to retain their certificates in the absence of any substantive progress up till now. Based on our understanding of the MSC standard, unless granted a special case (a variation request), these fisheries would not meet MSC certification requirements at this point.”</p> <p>(...)</p> <p>1.2.2.c: “Under SA2.5.5, in order to conclude that ‘available’ HCRs are ‘effective’ (SG60), MSC requires evidence of i) the use of effective HCRs in other stocks or fisheries under the same management body; or ii) a formal agreement or framework with trigger levels which will require the development of a well-defined HCR. It also requires consideration of current exploitation rates in relation to biological reference points and the agreed trigger level (guidance for SA2.5.6: ‘evidence that current F is equal to or less than FMSY should usually be taken as evidence that the HCR is effective’).</p> <p>The authors are aware that this is not the same as the scoring applied in various MSC certifications for fisheries targeting this stock. The reasons for this are set out in the rationale for 1.2.2a above, and are primarily due to the different purpose of a pre-assessment and timing for meeting the MSC requirements. In our opinion, in order to meet MSC requirements at this stage, some demonstrable progress is required towards an effective formal harvest strategy (as per CMM 2014-06) such that it is more clear that management tools are likely to be able to maintain stocks at agreed target levels.</p> <p>The tools by which CMM 2017-01 is implemented for yellowfin are as follows:</p> <ul style="list-style-type: none"> • temporal / spatial limits on purse seine setting on FADs • restrictions on purse seine effort (days) <p>There are no limits on longline fishing for yellowfin, although catch limits for bigeye may (may) limit effort for some CCMs. The catch time series in the 2017 stock assessment runs to 2015; the harvest strategy has only been in place since 2014,</p>				
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		and is incremental, so it is hard to say what impact it has had up till now. Estimated juvenile F has stabilised and perhaps decreased, but the trajectory of adult F does not seem to have been altered. The trajectory of stock biomass is downwards throughout the time series. On this basis, there is no particular evidence that the various tools in place are effective in controlling fishing mortality, and no reason to suppose that the stock trajectory will not continue downwards. On this basis, SG60 is not met."				
2.1.3 - Primary species information	Considering WCPFC's latest report on Scientific data available to the Western and Central Pacific Fisheries Commission, there seem to still exist considerable gaps in fisheries data reported by Indonesia.	<p>ISSF notes the data collection methods in place for the client group's fishery, however, considering WCPFC's latest report on Scientific data available to the Western and Central Pacific Fisheries Commission, there seem to still exist considerable gaps in fisheries data reported by Indonesia on both target and non-target species. ISSF is concerned that the data collection system used by the fishery, which integrates data collection methods with different levels of reliability, may be contributing partly to the data gaps identified by WCPFC:</p> <p><i>16. The most important areas for progress with catch estimates and data within Indonesia include:</i></p> <p><i>i. The need for more comprehensive review and consolidation of data from all potential sources in the catch estimation process (including industry and NGO data) which would help, inter alia, explain the trends in catches by gear;</i></p> <p><i>ii. Compilation and submission of available aggregate and operational catch/effort data for recent years since the logbooks became mandatory in the Indonesian domestic tuna fisheries (2011-2018), although this is acknowledged as a long term goal with assistance provided through the WPEA projects;</i></p> <p><i>iii. Submission of observer data which covers the ROP data field requirements.</i></p>	WCPFC-SC15-2018/ST WP-1 rev. 1	80	<p>The assessment team agrees with ISSF that there are important data gaps and limitations in data collection system for Indonesia as a whole, and it's likely that several small-scale fisheries with no regular data collection systems would not meet the SG80 if assessed under the MSC standard.</p> <p>However, in this particular UoA, there are efforts in place that have resulted in a regular sampling system combining logbooks, which are crosschecked with sampling by enumerators at landing.</p> <p>MSC Guidance (Fisheries Standard v2.01 GSA3.6), it states that "For each scoring element in each component, it is expected that the assessment team will use their expert</p>	Not accepted (no score change)

					<p>judgement to decide whether the information provided is adequate.</p> <p>Given the very low impact of the catches of this UoA, the assessment team considers the available information to provide a high degree of certainty of the Impact of the UoA on primary and secondary species, meeting the SG100.</p>	
2.2.3 - Secondary species information	<p>Considering WCPFC's latest report on Scientific data available to the Western and Central Pacific Fisheries Commission, there seem to still exist considerable gaps in fisheries data reported by Indonesia.</p>	<p>ISSF notes the data collection methods in place for the client group's fishery, however, considering WCPFC's latest report on Scientific data available to the Western and Central Pacific Fisheries Commission, there seem to still exist considerable gaps in fisheries data reported by Indonesia on both target and non-target species. ISSF is concerned that the data collection system used by the fishery, which integrates data collection methods with different levels of reliability, may be contributing partly to the data gaps identified by WCPFC:</p> <p><i>16. The most important areas for progress with catch estimates and data within Indonesia include:</i></p> <p><i>i. The need for more comprehensive review and consolidation of data from all potential sources in the catch estimation process (including industry and NGO data) which would help, inter alia, explain the trends in catches by gear;</i></p> <p><i>ii. Compilation and submission of available aggregate and operational catch/effort data for recent years since the logbooks became mandatory in the Indonesian domestic tuna fisheries (2011-2018), although this is acknowledged as a long term goal with assistance provided through the WPEA projects;</i></p> <p><i>iii. Submission of observer data which covers the ROP data field requirements.</i></p>	WCPFC-SC15-2018/ST WP-1 rev. 1	80	<p>See Response for PI 2.1.3</p>	<p>Not accepted (no score change)</p>

3.1.2 - Consultation, roles and responsibilities	The independent report by Medley et al. (2019) indicates that the fishery would not meet SG100 for SI 3.1.2.a and that, as a result, the overall PI score would be less than 95.	According to the independent report, this PI would only meet SG80 at the regional level. WCPFC – "(...) Roles and responsibilities are not necessarily well understood in all areas, however. WCPFC has had a number of problems with flag States that have not applied appropriate controls to all their vessels, and it appears that not all vessels understand their responsibilities and in some cases there appear to be conflicts between requirements for confidentiality and the responsibilities to provide information necessary for management, which need to be resolved. This includes members not submitting timely data. The Regional Observer Programme (ROP), despite being overall successful, also has allegations of inappropriate behaviour towards observers on vessels, suggesting fishing entities do not fully understand or comply with their responsibilities. Although most data are available to the Pacific Community (Oceanic Fisheries Programme) (SPC-OFP), which is responsible for stock assessment, not all these data have been entered and made available to the Commission. While these problems are not in key areas in the sense that they do not prevent WCPFC completing its primary tasks, they nevertheless undermine its overall effectiveness and increase risks to sustainability. For example, while stock assessments provide estimates of stock status up to the current year, the Scientific Committee noted that the incomplete submission of data increases uncertainty in the assessments and encouraged all members to provide data in accordance with the WCPFC data rules. Hence although the fisheries meet the SG80, they do not meet SG100."	Medley et al. (2019)	85	The assessment team agrees with ISSF that there are issues with implementation of CMM requirements. However, we believe the issues brought up by Medley et al. (2019), particularly related to data submission, are a result of a lack of compliance and availability of human and financial resources and infrastructure, rather than a lack of understanding of roles and responsibilities. We've addressed this issue in PI 3.1.1 SI (a), as we believe the issue is a lack of "organized and effective cooperation with other parties [WCPFC]"	Not accepted (no score change)
3.1.3 - Long term objectives	According to the independent report, this PI would only meet SG80 at the regional level and,	According to the independent report, this PI would only meet SG80 at the regional level. WCPFC – "(...) While it appears to be a requirement, in practice it is less clear that the precautionary approach is applied in practice across all policy. Stock assessments in 2010, 2011 and 2014 indicate that bigeye fishing mortality exceeded levels consistent with MSY. While precautionary reference points	Medley et al. (2019)	80	As per MSC guidance this PI "[...] is not concerned with the operational implementation of the precautionary approach within the 'day-to-day' management of the UoA itself. This PI is not a	Not accepted (no score change)

	therefore, a partial score would not be justified.	have been set, there has not been a corresponding precautionary action that has reduced exploitation levels. Overall, clear explicit objectives incorporating the precautionary approach and ecosystem-based management in the policy meet the MSC Principles and Criteria, and defined, meeting SG80. However, it is not yet clear that the precautionary approach is applied in practice across all policy for all stocks, so SG100 is not met".			second opportunity to score UoAs on the use or otherwise of target and limit reference points which are scored under P1 of the default tree" (MSC Standard V2.01 GSA4.5)	
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9. Appendix 4 Surveillance Frequency

The surveillance program is expected to be set at Level 6: Default Surveillance. The timing of the audit is considered TBD at this stage in the assessment process, to be confirmed at the PCR.

Table 25. Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1-4	On-site audit	2 or more auditors	In accordance with FCRV2.0 7.23.4 and based on the number of conditions and information needed to verify progress. Note, the on-site audit may not necessarily include in person meetings with representatives of all management systems relevant to the UoA.

Table 26. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
2021	May 12th	Within six months of the certificate anniversary date	To be held in compliance with timing requirements put forth in FCRV2.0 7.23.6

Table 27. Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	e.g. On-site surveillance audit & re-certification site visit

10. Appendix 5

Relevant sections obtained from the Fair Trade USA Capture Fisheries Standard (v1.1)

SUB-SECTION PT: Product Traceability

Version 1.1.0

SECTION 6. TR: Traceability & Transparency

SUB-SECTION PT: Product Traceability

This section is applicable at first sale of Fair Trade product unless otherwise noted.

No.	Compliance Criteria	Year	Major	Interpretation Guidance
Objective TR-PT 1: There is a traceability system in place to ensure only fish caught by Registered Fishermen are sold as Fair Trade.				
TR-PT 1.1	A system exists to ensure traceability back to the point of landing.	0	M	<p>Clarification: The traceability system may be electronic, with the ability to record geo-referenced points of capture, but it is not necessary. Paper systems are sufficient.</p> <p>Guidance: Records are kept in an accessible format and retained for a minimum of three years.</p>
TR-PT 1.2	For new Certificates, seafood caught before the first day of the initial audit may not be sold as Fair Trade Certified.	0		
TR-PT 1.3	Only seafood caught/harvested by Registered Fishermen is sold as Fair Trade Certified.	0	M	<p>Clarification: The Certificate Holder is allowed to sell products from Registered Fishermen and non-Registered Fishermen to the conventional market. But when the Certificate Holder wants to sell product as Fair Trade Certified, the Certificate Holder ensures the product was sourced exclusively from Registered Fishermen.</p>
TR-PT 1.4	Seafood caught/harvested by Registered Fishermen are transported, stored, processed/manufactured and delivered separately from non-Fair Trade products, until the product is sold.	0		<p>Clarification: A marker denoting Fair Trade seafood product is used throughout the supply chain to visually separate Fair Trade seafood from non-Fair Trade seafood.</p> <p>Guidance: There are no specific requirements in regard to the type of mark that is used, so long as it is visible and clear.</p>

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No.	Compliance Criteria	Year	Major	Interpretation Guidance
TR-PT 1.5	Fair Trade seafood is marked clearly with a reference to Fair Trade USA (i.e., Fair Trade USA ID number) so it can be identified as Fair Trade Certified.	0		
TR-PT 1.6	Finished products: Only licensed partners of Fair Trade USA may use the Fair Trade Certified certification seal on finished products. Organizations that are certified to sell Fair Trade Certified products may use the Fair Trade certification mark in promotional materials (such as brochures, websites, or wholesale packaging). Use of the certification mark is in accordance with the Fair Trade USA Label & Language Use Guide, and all finished products have prior approval by Fair Trade USA.	0		
Objective TR-PT 2: There is documentation of all Fair Trade product transactions.				
TR-PT 2.1	The Certificate Holder has been issued a valid certificate for each product traded as Fair Trade Certified.	0		
TR-PT 2.2	Fair Trade transactions are reported to Fair Trade USA according to the frequency determined by Fair Trade USA (quarterly, bi-annually, or monthly).	0		Guidance: This criterion relates to the reporting requirements of the Certificate Holder to Fair Trade USA.
TR-PT 2.3	There is a written description of the product flow from the Registered Fisherman to the buyer.	0		
TR-PT 2.4	If Fair Trade products are processed, there are records that specify the amount of product before and after processing.	0		Clarification: Conversion rates, or records of yield throughout the processing chain, may be necessary to calculate the correct Premium. Guidance: Documentation should be kept on file in an accessible format for three years.

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SUB-SECTION PT: Product Traceability

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No.	Compliance Criteria	Year	Major	Interpretation Guidance
TR-PT 2.5	<p>Records are maintained of all products sourced from Registered Fishermen. These documents indicate:</p> <ul style="list-style-type: none"> The name of the individual fisherman; Date of purchase; Product name; Volume; and, Price received by the member. <p>Records include the signature of the Registered Fisherman, verifying accuracy. Registered Fishermen receive a copy of the record.</p>	0		<p>Clarification: In cases where the supply chain includes multiple tiers of product aggregation, sufficient copies of record must be produced to ensure each level of the supply chain maintains a copy. For example, if the buyer purchases product from an aggregator/broker/supplier, who purchased product from Registered Fishermen, all participants involved must have a copy of the record of sale from the fisherman to the final buyer.</p> <p>Guidance: Documentation should be kept on file in an accessible format for three years.</p>
TR-PT 2.6	<p>Records are maintained of all Fair Trade sales. These documents (e.g., invoices, contracts, bill of lading, delivery notes, etc.) indicate:</p> <ul style="list-style-type: none"> The volume sold; The name of the buyer; The date of the transaction; A reference clearly indicating the product is Fair Trade Certified; and, A reference to purchase documentation that allows the Conformity Assessment Body to link these records with the corresponding sales documentation. <p>Records are available to Registered Fishermen upon request.</p>	0		<p>Guidance: Documentation should be kept on file in an accessible format for three years.</p>
TR-PT 2.7	The Fishing Association maintains copies of the documents outlined in TR-PT 2.5.	6		<p>Clarification: This record-keeping system pertains only to pricing and payment information and is separate from the resource management information system required elsewhere in the CFS.</p>

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SUB-SECTION CA: Contracts & Agreements

Version 1.1.0

No.	Compliance Criteria	Year	Major	Interpretation Guidance
TR-PT 2.8	The Fishing Association maintains copies of the documents outlined in TR-PT 2.6.	6		