



**Fishery Improvement Project Work Plan for the  
Federated States of Micronesia Longline Tuna Fishery  
2016-2018**

## CONTENTS

	<u>Page</u>
<b>CONTENTS</b>	<b>i</b>
<b>1. INTRODUCTION</b>	<b>1</b>
1.1. Introduction and FIP Scope	
1.2. CASS FIP Guidance	
1.3. Project History and Status	
1.4. Participants	
1.5. FSM Longline Fishery	
<b>2. PRE-ASSESSMENT FINDINGS AND WORK PLAN</b>	<b>6</b>
2.1. Identified Deficits	
2.2. Activities, Milestones, Objectives, Leads, Schedule	
2.2.1. FIP Activities to Address MSC Deficiencies	
2.2.2. FIP Programmatic Activities	
<b>3. BUDGET</b>	<b>17</b>
<b>4. FIP CONTACTS</b>	<b>18</b>
<b>5. REFERENCES</b>	<b>19</b>
<b>FIGURES AND TABLES</b>	
Fig. 1. Spatial distribution of fishing effort by domestically-based pelagic longline vessels licensed to fish in the Federated States of Micronesia EEZ, 2012: (a) FSM-flagged, (b) Taiwan-flagged, (c) China-flagged.	<b>5</b>
Table 1. FSM domestically-based pelagic longline fishery pre-assessment outcome against each MSC performance indicator.	<b>6</b>

## 1. INTRODUCTION

### 1.1. Introduction and FIP Scope

This work plan for the Fishery Improvement Project (FIP) for the Federated States of Micronesia (FSM) locally-based longline tuna fishery summarizes deficiencies in management systems and fishing practices identified through a pre-assessment against the Marine Stewardship Council (MSC) standard for ecologically sustainable marine capture fisheries. The work plan identifies planned and in-progress activities and expected outcomes of these activities that will be performed under this FIP through the end of 2018 in order to address the deficiencies identified in the MSC pre-assessment so as to improve the fishing practices and domestic and regional management systems to a point where the fishery would unconditionally pass an assessment against the MSC fishery standard. The work plan also identifies activities related to the process for implementing the FIP. Current formal FIP participants and stakeholders are identified. Furthermore, the work plan identifies a schedule and budget for implementing planned and in-progress activities. The budget identifies existing and tentatively planned funding sources for each activity. The FIP scope includes all companies participating in the locally-based FSM longline fishery. The FIP work plan is designed to meet the Conservation Alliance for Seafood Solutions' (CASS') definition of a 'comprehensive' FIP, discussed below.

Consistent with the pre-assessment scope, the FIP scope is for MSC units of certification of western and central Pacific Ocean (WCPO) stocks of bigeye and yellowfin tuna caught by longline vessels owned and managed by Luen Thai Fishing Venture and its subsidiary companies. The FIP aims to improve fisheries management and practices to a point where the FSM fishery can pass an assessment against the MSC fishery standard within five years of the "FIP launch", by 2021. Under Conservation Alliance guidelines, the FIP was launched in 2016 when the FIP met the criteria of a stage 2 FIP.

### 1.2. CASS FIP Guidance

CASS, an alliance of U.S. and Canadian environmental non-governmental organizations (NGOs) produced updated *Guidelines for Supporting Fishery Improvement Projects* in 2015 (CASS, 2015). The CASS FIP guidelines prescribe using the MSC Fisheries Standard to measure the performance of fisheries and FIP progress over time, and encourage all FIPs to pursue a level of performance consistent with an unconditional pass of the MSC Fisheries Standard (CASS, 2015). CASS defines a FIP as: "a multistakeholder effort to address environmental challenges in a fishery. These projects utilize the power of the private sector to incentivize positive changes toward sustainability in the fishery and seek to make these changes endure through policy change" (CASS, 2015).

One strategy for businesses to get a source fishery to a point where it meets the businesses' sustainable seafood policy is to engage suppliers, producers, and other industry partners in a FIP. The CASS FIP Guidelines state that FIPs need to be accountable for meeting specific milestones and deadlines for improvement. If a fishery in a FIP does not make measurable improvements in its environmental performance over time, CASS recommends that buyers and suppliers engaged in the improvement project stop buying seafood from that fishery and communicate their reason for doing so (CAS, 2015).

A FIP must have the following elements: (i) participation (contributing financial or in-kind support to the project and/or working on activities in the work plan) by companies in the supply chain to motivate improvements; (ii) public commitment - FIP participants must commit to financially invest in (directly or in-kind) and make improvements to the fishery (e.g., email correspondence stating a commitment, signed memorandum of understanding); (iii) objectives – a FIP must define the near-term scope of the project with a set of time-bound objectives; (iv) work plan – a FIP must develop and implement a work plan with an associated budget and

deadlines, designed to address the deficiencies in the fishery necessary to achieve the project's objectives. The work plan and deadlines must be made publicly available, but the budget does not need to be made publicly available; and (v) progress tracking and reporting – a FIP must regularly and publicly track work toward the activities and outcomes in the work plan and report progress or lack thereof and planned course corrections. FIPs are expected to make progress over time (CASS, 2015).

Furthermore, CASS (2015) defines two types of FIPs. A 'basic' FIP completes a needs assessment and scoping document based on the MSC standard to identify deficits, and must make the needs assessment or scoping document public (CASS, 2015). It defines time-bound objectives. And the project must publicly report progress every six months, and independent in-person audits of activity results and progress are encouraged (but not required) (CASS, 2015).

A 'comprehensive' FIP engages a party experienced with applying the MSC standard to complete a pre-assessment and scoping document, and the pre-assessment or scoping document must be made publicly available (CASS, 2015). The FIP defines time bound objectives necessary to achieve a level of performance consistent with an unconditional pass of the MSC standard. And the project must publicly report progress every six months, and independent in-person audits of activity results and progress against the MSC standard are required every three years by someone experienced with the MSC standard and independent from the organization implementing the FIP (CASS, 2015).

### **1.3. Project History and Status**

In 2012 a FIP was launched for the FSM locally-based longline tuna fishery. A chronology of activities by the project as of July 2015 follows:

- A draft pre-assessment against the Marine Stewardship Council (MSC) standard was prepared in 2010.
- FIP is launched in 2012 by Anova Foods USA, Luen Thai Fishing Venture and the FSM National Oceanic Resource Management Authority (NORMA).
- Western and Central Pacific Fisheries Commission adopts formal limit reference points for bigeye and yellowfin tuna stocks (This is documented in the meeting report for the WCPFC 9th commission meeting available at <http://www.wcpfc.int/system/files/WCPFC9-Summary-Report-final.pdf>, refer to paragraph 269, WCPFC9 adopted SC8 para 298 recommendation to adopt 20%unfishedSB for WCPO tropical tuna stocks).
- Luen Thai Fishing Venture adopted in March 2013 a company policy banning the retention of sharks or fishing gear and methods to target sharks (available online at [https://sites.google.com/site/fsmlonglinefip/home/LTFV\\_shark\\_policy\\_Bilingual\\_R2.pdf?attredirects=0&d=1](https://sites.google.com/site/fsmlonglinefip/home/LTFV_shark_policy_Bilingual_R2.pdf?attredirects=0&d=1)).
- In 2013, Luen Thai Fishing Venture removed all narrow J-shaped tuna hooks and replaced these with wider circle hooks in order to mitigate bycatch rates of sea turtles and possibly other at-risk species.
- In May 2014, FIP participants adopted an initial FIP Workplan.
- Continuous stakeholder consultation is initiated in 2014.
- FIP participants agree to participate in the WCPO Tuna MSC Alignment Group (see Group website at [https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo\\_tuna-p1\\_alignment](https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo_tuna-p1_alignment)) and attended the inaugural in-person meeting in May 2014.
- Captain and crew training materials (handling and release guidance, bilingual English/Mandarin SPC species ID booklet, guidance for proper completion of logbook forms, summary of domestic regulations) are developed in Dec. 2014.
- In January 2015, LTFV begins using radio frequency identification (RFID) tags on frozen tuna, to provide full traceability from the vessel to the end of the supply chain, with plans

for full RFID traceability implementation on frozen bigeye and yellowfin tunas by the end of 2016.

- In January 2015, LTFV begins to outfit all FSM-based vessels with electronic monitoring equipment with plans to have 100% of vessels outfitted by the end of 2016.
- In March 2015 The Nature Conservancy (TNC) becomes a FIP participant.
- In July 2015 a new MSC pre-assessment is completed (MEC, 2015) and report is posted to the FIP websites (available online at [https://sites.google.com/site/fsmlonglinefip/home/FSM\\_MSC\\_PA\\_July2015.PDF?attredirects=0&d=1](https://sites.google.com/site/fsmlonglinefip/home/FSM_MSC_PA_July2015.PDF?attredirects=0&d=1)). The two units of certification covered by the pre-assessment were western and central Pacific Ocean (WCPO) stocks of bigeye and yellowfin tunas caught by vessels owned and managed by Luen Thai Fishing Venture (LTFV).
- In September 2015 a first draft of this work plan was distributed to FIP participants for review and comments.

This work plan and the MSC pre-assessment both provide the CASS (2015) scoping document content in summarizing results of the pre-assessment and identifying activities to address the deficits identified in the pre-assessment.

Two public websites for the FIP are:

- <https://sites.google.com/site/fsmlonglinefip/home> and
- <http://fishing-living.org/fip-for-the-federated-states-of-micronesia-bigeye-and-yellowfin-longline-fishery/#sthash.8Jbv2yV9.dpbs>

Coverage of the project by organizations that track FIPs can be found online at:

- Sustainable Fisheries Partnership FishSource profile:  
<http://www.fishsource.com/fishery/improvements?fishery=Bigeye+tuna++Western+and+Central+Pacific+%28Country%3A+FM%3B+Gear%3A+LL%3B%29+%5BFIP%3A+FSM+bigeye+tuna%2C+Luen+Thai+FV+and+Anova+Fishing+and+Living%5D>
- Sustainable Fisheries Partnership FIP Directory:  
<http://fisheryimprovementprojects.org/fip/micronesia-bigeye-yellowfin-longline-tuna/>

CASS intends to also manage a website that provides a database of information on FIPs (CASS, 2015), but this planned website was not live at the time of writing this work plan. Annually, CASS plans to conduct a review of progress reporting for all FIPs listed on the Alliance FIP tracking website (CASS, 2015).

#### **1.4. Participants and Stakeholders**

The following are project participants, as of March 2016:

- Federated States of Micronesia (FSM) National Oceanic Resource Management Authority (NORMA) (domestic fisheries management authority)
- Luen Thai Fishing Venture (LTFV) (catch sector, distributor, marketer)
- Anova Foods USA (supplier)
- The Nature Conservancy (TNC) (international conservation organization)
- Yi Rong Fishery Company (YRFC) (catch sector)
- Norpac Fisheries Export (supplier)
- Sea Delight (supplier)

Additional stakeholders, who are not formal FIP participants, include:

- Parties to the Nauru Agreement (PNA)

- Pacific Community (SPC, formerly the Secretariat of the Pacific Community)
- International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)
- Pacific Islands Forum Fisheries Agency (FFA)
- Western and Central Pacific Fisheries Commission (WCPFC)
- Parties to WCPFC, PNA and FFA, and their delegations to these three regional bodies.
- Pacific Islands Tuna Industry Authority (PITIA)
- World Wildlife Fund (WWF)
- FishWise
- Sustainable Fisheries Partnership (SFP)
- Conservation Alliance for Seafood Solutions (CASS)
- Monterey Bay Aquarium
- New England Aquarium
- Gulf of Maine Research Institute
- Pew Environment Group
- Retail companies sourcing from the FSM longline fishery
- Seafood companies that are participants of other longline tuna FIPs and that are client groups of fisheries in the MSC program (see participants of the WCPO Tuna MSC Alignment Group at [https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo\\_tuna-p1\\_alignment](https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo_tuna-p1_alignment))

### **1.5. FSM Longline Fishery**

The locally-based FSM pelagic longline fishery, which targets bigeye and yellowfin tunas and incidental catch of various additional market species (billfishes, including blue and black marlins and swordfish, albacore tuna, and other tuna-like Scombrid species), has about 50 active vessels flagged to the FSM, China and Taiwan (FSM, 2015). The locally-based longline vessels fish at grounds primarily within the FSM EEZ but also a small proportion of effort occurs on the high seas adjacent to the FSM EEZ seaward margin (Fig. 1). In 2013 and 2014 locally-based longline vessels operating in the FSM EEZ landed a total of 902 and 645 metric tons, respectively of combined bigeye and yellowfin tunas, with bigeye tuna making up about 70% of the tuna landings (FSM, 2015). Transshipment does not occur in this fishery because, along with other FFA member countries, FSM prohibits transshipment at sea unless special authorization is granted. There is also a distant-water pelagic longline fishery of Japanese-flagged vessels licensed to fish in the FSM EEZ, which do not land their catch in the FSM, which is not within the scope of this FIP.

The onboard observer coverage rate of locally-based longline fishing effort has not achieved the minimum 5% coverage rate required, starting on 30 June 2012, under the binding conservation and management measure adopted by the Western and Central Pacific Fisheries Commission (WCPFC) (WCPFC, 2007). In 2014, 2% of trips made by FSM flagged vessels (both in the FSM and Marshall Islands EEZs) had onboard observers, and no trips made by Chinese and Taiwan-flagged locally-based vessels were observed (FSM, 2015).

FSM conducts port sampling for longline vessels landing catch in the FSM. Information was not available to determine the percent of landings by locally-based longline vessels that are sampled (FSM, 2015).

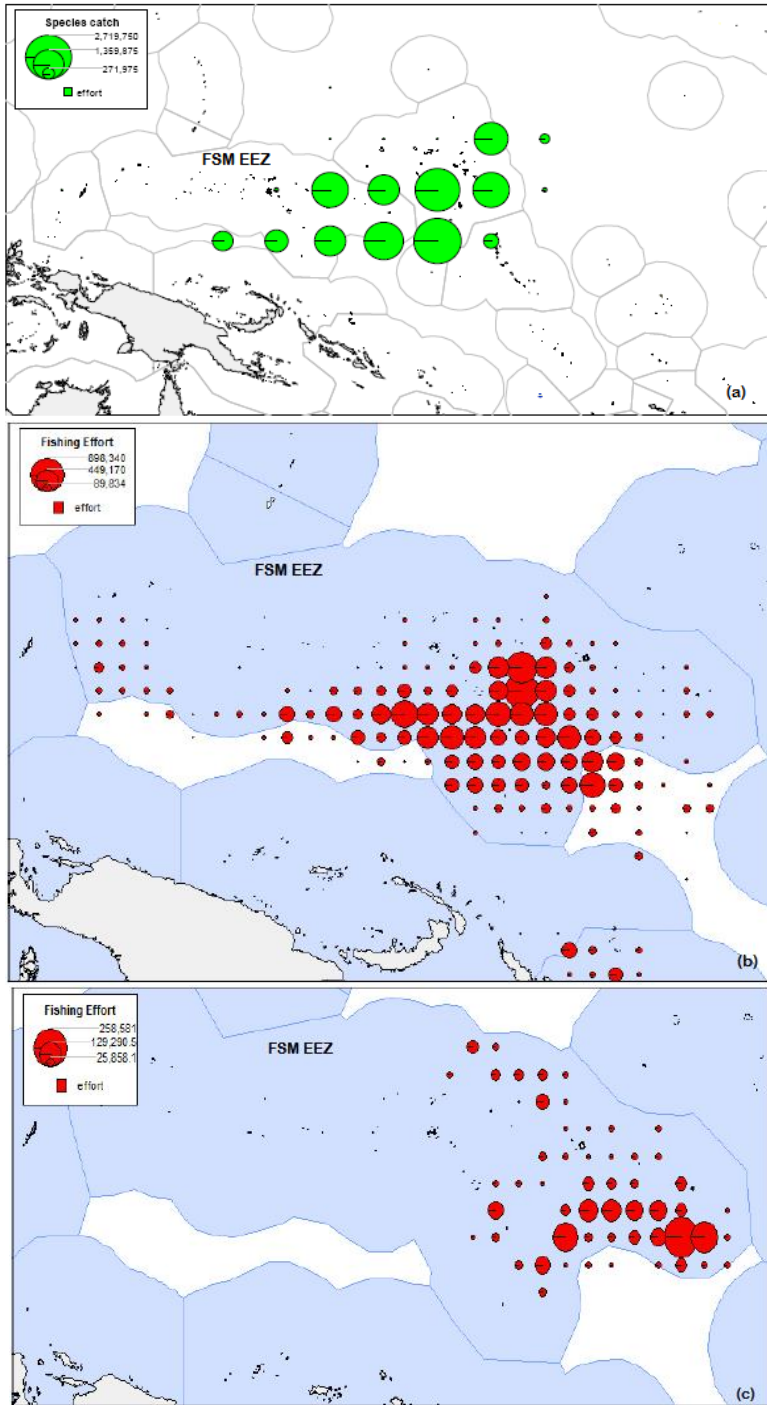


Fig. 1. Spatial distribution of fishing effort by domestically-based pelagic longline vessels licensed to fish in the Federated States of Micronesia EEZ, 2012: (a) FSM-flagged, (b) Taiwan-flagged, (c) China-flagged.

## 2. PRE-ASSESSMENT FINDINGS AND WORK PLAN

### 2.1. Identified Deficits

Of 28 MSC performance indicators, 12 were identified as requiring improvements in order for the fishery to reach a point where it would pass assessment against the MSC fisheries standard. Table 1 summarizes the 2015 MSC pre-assessment findings (MEC, 2015), identifying each of the 12 MSC performance indicators determined to either fail or require conditions in order to pass. MSC performance indicators for which it was determined that the fishery is likely to exceed the MSC Scoring Guidepost 80 resulting in an unconditional pass are not included in Table 1. For the indicators where a conditional pass (**YELLOW**) or fail (**RED**) was estimated for the fishery, Table 1 identifies key deficiencies and information gaps that need to be addressed. The estimated category of MSC Scoring Guidepost for the performance indicators under Principle 1 and two indicators under Principle 2 are reported separately for the two units of certification included in the pre-assessment, for western and central Pacific Ocean stocks of bigeye and yellowfin tuna. For Principle 3 performance indicators, the information in cells under the final column on key deficiencies and information gaps indicates if the conditional pass or failure is due to problems with the domestic FSM or regional-level management system or both.



Table 1. FSM domestically-based pelagic longline fishery pre-assessment outcome against MSC performance indicators estimated to achieve a condition pass or fail, and identification of reasons for the conditional pass or fail (adapted from MEC, 2015).

PI number	PI name	Scoring level <sup>1</sup>		Key deficiencies & information gaps
		WCPO yellowfin tuna	WCPO bigeye tuna	
1.1.1	Stock status	NA (pass without conditions)	<b>YELLOW</b> <b>RED</b>	WCPO bigeye tuna is at or below a formally adopted limit reference point. The PI either passes with conditions or fails depending on whether the stock is above or below a 'point of recruitment impairment', which has not been determined for this stock.
1.1.2	Stock rebuilding	NA (the stock is not in need of rebuilding, it is above MSY-based reference points)	<b>RED</b>	The current binding WCPFC CMM (2014-01) for tropical tunas is likely not sufficient to meet the requirement for a formal rebuilding plan.
1.2.1	Harvest strategy	<b>YELLOW</b>	<b>YELLOW</b>	CMM 2014-01 is a limited harvest strategy, meeting the requirements of SG60. Note that if the bigeye harvest strategy is not improved in the next few years, the performance for bigeye and perhaps also yellowfin against this PI will



				likely get worse.
1.2.2	Harvest control rules			CMM 2014-01 was determined to be a sufficient HCR to meet the SG 60 level, but no better. However, if the HCR for WCPO BET is not improved over time by WCPFC, then this determination may not be sustained (i.e., if WCPFC does not either determine that BET is rebuilding or otherwise determines that it is not rebuilding and still does not adopt a replacement CMM that is likely to allow BET to rebuild, then both the yellowfin and bigeye UoCs are likely to fail against this PI).
2.1.1	Outcome of primary species			Bigeye is the main primary species for the yellowfin tuna UoC. WCPO bigeye tuna has a depleted stock status, with some measures in place to avoid impacts. Condition to put in place management 'strategy' is likely on outcome, possible on management or both.
2.1.2	Management of primary species			
2.2.1	Outcome of secondary species			Of the three secondary species (blue marlin, Indian oil sardine, and possibly blue shark) for both UoCs, the stock status is unclear but probably not great for north Pacific Ocean blue shark. Fishery impacts are unclear and more research is needed to be conclusive. In conclusion, a condition would be likely for blue shark.
2.2.2	Management of secondary species			For blue shark a 'partial strategy' is in place but this would need to show that it is implemented as required on FSM-based longline vessels. The very low onboard observer coverage rate creates an information deficit preventing determining with sufficient certainty if catch rates of blue sharks does meet the MSC definition of a secondary species, and to confirm that no shark targeting (use of 'shark lines' or wire leaders) is occurring, and no sharks are retained, including fins only or fins and carcass, and that all caught sharks are either discarded dead or released alive.
2.3.1	ETP species outcome			ETP species are silky shark, longfin mako, sea turtles, and possibly others which would be able to be determined given better observer data. Conditions to reduce fishery impacts on these ETP species may be required.
2.3.2	ETP species management			Information is needed to determine if bycatch mitigation measures and handling and release practices required by NORMA and vessel owners meet

			WCPFC binding measures and are considered to be 'best practice'. And there is a need to demonstrate, e.g., through a review of observer data, if bycatch methods and handling and release methods are being implemented to comply with relevant binding WCPFC measures and meet what might be considered best practices.
2.3.3	ETP species information		Better information, including from an increased observer coverage rate, and possibly also a stock assessment report for longline mako and possibly population assessments for other ETP species, is needed to assess fishery population and stock impacts.
3.1.1	Legal and customary framework		The FSM national law lacks a dispute settlement clause.
3.1.2	Consultation, roles and responsibilities		A condition is possible around consultation processes at the domestic FSM level. Ad hoc processes are acceptable, as long as stakeholders are happy with them.
3.2.3	Compliance and enforcement		Likely a condition would be required to deal with reports of inaccurate and untimely reporting to NORMA by licencees and insufficient rates of observer coverage.

- <sup>1</sup>  = Not likely to reach MSC Scoring Guidepost 60 and would fail this performance indicator.  
 = Likely to reach MSC Scoring Guidepost 60 but not 80 for this performance indicator and thus would require a condition to enable the fishery to gradually improve to the 80 level.

## **2.2. Activities, Milestones, Objectives, Leads, Schedule**

This section describes each activity to address the 12 MSC performance indicators determined to require improvements as well as FIP process-related activities. For each activity, responsible parties, objectives, key performance indicators (milestones), timeframe, and a budget are described. Chapter 3 summarizes the budget for implementing these activities.

### **2.2.1. FIP Activities to Address MSC Deficiencies**

#### **Activity 1. Engagement to Pursue Robust Harvest Strategies Adopted and Implemented**

**Activity:** Engage with delegations to WCPFC, PNA and FFA, and other relevant stakeholders (Section 1.2), including through participation in and support for the ongoing existence and effectiveness of the WCPO Tuna MSC Alignment Group<sup>1</sup>, in order to pursue FFA, PNA and WCPFC adoption, implementation and compliance with robust WCPO bigeye and yellowfin tuna harvest strategies that are responsive to the state of the 2 stocks, adoption of formal target reference points for WCPO bigeye and yellowfin, a HCR that is based explicitly on the harvest strategy and formally adopted target and limit reference points, and evidence that the HCR is meeting stock management objectives. In addition, the BET harvest strategy needs to meet the MSC requirements of a formal rebuilding plan.

**MSC PI:** 1.1.1, 1.1.2, 1.2.1, 1.2.2, 2.1.1, 2.1.2

**Responsible parties:** All FIP participants

**Objective:** PNA, FFA and WCPFC adopt robust, comprehensive harvest strategies for WCPO bigeye and yellowfin tunas. A harvest strategy is a framework that specifies the pre-determined management actions for fisheries that catch a stock that are necessary to achieve agreed biological, ecological, economic and/or social management objectives. Harvest strategies include 6 main elements: (i) management objectives – including timeframes, (ii) stock-specific target and limit reference points,<sup>2</sup> (iii) acceptable levels of risk of exceeding the reference points, (iv) monitoring strategy, (v) harvest control rules – pre-agreed decisions that aim to stay near targets and to not exceed limits and include actions that are to be taken if reference points are exceeded, and (vi) an evaluation of whether controls are achieving management objectives.

**Milestones:** (a) SPC or other credible scientific body assesses the efficacy of the current binding WCPFC tropical tuna measure with a determination of whether the WCPO bigeye tuna stock is demonstrably rebuilding and meeting other stock management objectives.  
(b) If a performance evaluation by SPC determines that the WCPFC CMM tropical tuna measure is not meeting the BET stock management objectives, i.e., the BET stock is not demonstrably recovering, and there is no 'strategy' in place to reduce the impact of all MSC certified fisheries on the stock to the point where they will not hinder recovery, then (i) the WCPFC CMM is to be replaced with one that meets stock management objectives and (ii) a strategy is adopted to reduce the impact of all MSC certified fisheries on the stock so that they are not hindering recovery.

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<sup>1</sup> Information on the WCPO Tuna MSC Alignment Group is available online at [https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo\\_tuna-p1\\_alignment](https://sites.google.com/site/seafoodcompaniestunamanagement/home/wcpo_tuna-p1_alignment).

<sup>2</sup> Defined in Annex II of the United Nations Fish Stocks Agreement, "Limit reference points set boundaries which are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield. Target reference points are intended to meet management objectives," (UNFSA, 1995). Under the MSC standard, the target reference point is to be defined so that, "the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty," and the limit reference point is to be, "set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues."

- (c) SPC develops recommendations of target reference points and alternative harvest control rules.
  - (d) FFA and/or PNA adopt TRPs for the two UoCs.
  - (e) WCPFC adopts a TRP for the two UoCs.
  - (f) WCPFC develops draft comprehensive harvest strategies for the two UoCs
  - (g) FIP Participants contribute to WCPO Tuna MSC Alignment Group preparation of agreed annual position statements to PNA, FFA and WCPFC to address identified MSC P1 deficits.
- Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted).

Milestone a = Dec. 2018 and then at least every 2 years, ongoing;

Milestone b = earliest Dec. 2019: following publication of an SPC evaluation recommending an amendment to the HCR, replacement CMM by the next WCPFC annual session, and strategy to reduce impact of MSC fisheries within 1 year;

Milestone c = Dec. 2018

Milestone d = Nov. 2018

Milestone e = Dec. 2018

Milestone f = Dec. 2019

Milestone g = Dec. 2017 and then annually, ongoing – evidence of active participation reported in FIP progress reports

Budget: In 2017 \$225,000 to SPC for milestone c. Additional \$10,000 per year per each of the six current FIP formal participants, and \$35,000 per year to provide partial support for activities of the WCPO Tuna MSC Alignment Group.

**Activity 2. Achieve minimum 5% onboard (human and/or electronic) observer coverage rate, confirm which stocks are MSC main secondary and ETP species, and produce higher quality data to input to models assessing population-level effects on main secondary and ETP species**

Activity: (a) Increase the fishery's annual observer coverage rate (percent of trips made per year that are observed) to a minimum of 5%, whether via onboard human observers or electronic monitoring or a combination of the two. A 5% onboard observer coverage rate is considered an absolute minimum, required under a binding WCPFC CMM.<sup>3</sup>

(b) Make amalgamated observer data publicly available annually to enable a determination with increasingly higher certainty as the data series increases in quality of which species qualify as MSC 'main' secondary species' and ETP species as defined by MSC. Under MSC, 'main secondary species usually are defined as  $\geq 5\%$  of the total catch, however for less resilient species, a threshold of  $\geq 2\%$  is used. ETP species under MSC are species recognized by

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<sup>3</sup> A long-term goal for onboard observer coverage rate, beyond the life of this work plan, is to achieve 20% coverage. The fishery-specific objectives of analyses (e.g., required levels of accuracy and precision of bycatch rate estimates), the frequency of occurrence of bycatch interactions for each bycatch species of interest, amount of fishing effort, and distribution of catch and bycatch determine the requisite onboard observer coverage rate and sampling methods employed by observers. Fishery scientists would identify the data requirements to define data collection protocols, and likely would periodically adapt the observer protocols to meet evolving scientific needs and maximize accuracy. Similarly, government staff would assess compliance information needed from onboard observers if their role includes collecting data on compliance. In general, the variability in precision and biases in bycatch estimates decrease rapidly as the observer coverage rate increases to 20%, assuming that the sample is balanced and there are no observer effects. At 5% coverage, the threshold employed in the WCPFC binding measure, catch estimates will likely have large uncertainties for species with low capture rates, and may result in high uncertainty even for species that are more commonly caught if a small sample size is observed per stratum (e.g., by port, vessel category, season), but likely would be sufficient to enable determining when and where bycatch occurs.

national legislation and specific international agreements, or by using IUCN Red List categorizations.

- (c) Make primary confidential observer data available to relevant scientific bodies and organizations to support assessments of the population-level effects of the FSM fishery and cumulative effects of all MSC certified fisheries on main secondary and ETP species.
- (d) Make amalgamated observer data publicly available annually to enable a determination with increasingly higher certainty as the data series increases in quality of whether WCPFC bycatch mitigation measures are being complied with.

MSC PI: 2.2.1, 2.2.2, 2.3.2, 2.3.3, 3.2.3

Responsible parties: All FIP participants

Objectives: Provide at least 5% onboard observer coverage in order to improve observer data quality, so that observer data can be used to determine with higher certainty what species qualify as MSC main secondary and ETP species, to determine compliance with relevant WCPFC bycatch CMMs, and so that the higher quality observer data can be used to support assessments of the effect of the FSM fishery and cumulative effect of all MSC certified fisheries on main secondary and ETP species.

Milestones: (a) Observer coverage rate is a minimum of 5% of trips by FSM locally-based longline vessels in calendar year 2018, through a combination of human observers and office-based analysis of data from electronic monitoring.

- (b) NORMA produces annual summaries of observer data to enable a determination of what species meet the MSC definition of main secondary species and ETP species.
- (c) NORMA, in collaboration with other FIP participants, arranges for analyses of confidential observer program data to assess population-level effects of fishing mortality on associated and dependent species

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted).

Milestone a = Dec. 2018

Milestone b = Dec. 2017 and then annually

Milestone c = Dec. 2020, ongoing

Budget: \$100,000 for 2016 and \$200,000 per year for 2017 and 2018 for human and electronic monitoring systems. NORMA production of Part 1 annual reports with amalgamated observer data, and replying to requests for primary data are in-kind by NORMA and SPC.

### **Activity 3. Improve observer data collection fields and data collection protocols for ETP handling and release, and compliance with ban on shark retention and use of shark lines and wire leaders**

Activity: Based on recommended improvements to longline observer data fields and data collection protocols by Gilman and Clarke (2015), subsequently adopted by WCPFC12 to modify WCPFC Regional Observer Programme data fields and data collection protocols for observers on longline vessels, once longline observer programme forms used for the WCPFC regional observer programme are updated accordingly, have observers on FSM-based longline vessels begin to use the updated forms. The updated observer forms will, in part, assist with assessing compliance with the FSM ban on use of shark lines and wire leaders and ban on the retention of sharks.

MSC PI: 2.2.1, 2.2.2, 2.3.2

Responsible parties: SPC, NORMA

Objectives: Implement the 2015 changes to observer data collection fields and protocols adopted by WCPFC for the Regional Observer Program

Milestones: (a) Updated SPC/FFA longline observer forms produced to address decision at WCPFC12 to modify WCPFC ROP observer fields and data collection methods. (b) FSM national observer program begins to use the new longline observer form and modify observer training program materials as necessary.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Milestone a = Dec. 2017; Milestone b = Dec. 2018

Budget: \$50,000 one-time cost in 2017 (\$20k to adapt SPC/FFA observer forms, \$30k to adapt observer training program)

**Activity 4. Build captain and crew capacity to implement prescribed handling and release practices for sharks, rays, turtles, birds and mammals and all FSM and company rules**

Activity: Trainers receive periodic training to enable them to provide instruction to longline vessel captains to: (a) employ prescribed handling and release practices for all species of conservation concern, including ETP species, (b) ensure awareness of and promote full compliance with FSM regulations and vessel owner company sustainability policies, including license holder requirements for accurate and on-time reporting to the FSM government. Longline vessel captains receive annual training in handling and release practices and on government and company rules, and have onboard all required handling and release equipment and materials.

MSC PI: 2.3.1, 3.2.3

Responsible parties: TNC, NORMA, LTFV, YRFC

Objectives: FSM government and catch sector personnel have the capacity to train longline captains, and captains receive training annually to conduct prescribed handling and release practices for species of conservation concern and on government and company rules.

Milestones: (a) Train-the-trainer workshop convened (relevant training materials have been prepared, available online at:

<https://sites.google.com/site/seafoodcompaniestunamanagement/home/training-materials-for-longline-fishers>);

(b) Each FSM-based longline vessel captain attends a training course annually, and documentation of which vessel captains have obtained training made available via the FIP website;

(c) Each vessel is provided with hard copy handling and release guidance materials, equipment, summary of FSM rules, and summary of company policies.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Milestone a = Dec. 2016 (completed, train-the-trainer workshop was held in 2016); Milestone b = Dec. 2017 and ongoing thereafter; Milestone c = Dec. 2017 and ongoing thereafter.

Budget: \$32,000 in 2016 (\$2,500 to print materials for ~50 vessels, \$17,500 for handling/release equipment for 50 vessels; shipping in-kind by LTFV Asia Pacific Airlines; \$12,000 for consultant to provide train-the-trainer workshop; continual captain training in-kind by NORMA and catch sector companies).

**Activity 5. Through analysis of observer data, identify fishery-specific economically viable best practices to mitigate bycatch of species of conservation concern, and amend FSM regulations and company policy to implement these identified best practices**

Activity: Using a recent study of observer program data from the Palau longline fishery (Gilman et al., 2015) as a template, conduct similar analyses of observer program data for longline vessels that fished in the FSM EEZ to determine (a) variables that affect standardized catch and survival rates of main market species, sharks, rays, sea turtles and other species of conservation concern, including main secondary and ETP species; (b) the estimated effect of bans on retaining sharks and on using wire leaders and shark line on total shark fishing mortality rates and shark catch levels; and (c) identify opportunities to change gear designs and fishing methods to reduce bycatch rate, accounting for effects on catch rates of main market species and for potential conflicting effects on catch and survival rates of species of conservation concern. Have the domestic management authority and catch sector companies implement recommended changes in gear designs and fishing methods.

MSC PI: 2.2.1, 2.2.2, 2.3.1, 2.3.2

Responsible parties: NORMA, TNC, LTFV, YRFC

Objectives: Identify opportunities to change gear designs and fishing methods to reduce bycatch rate, accounting for effects on catch rates of main market species and for potential conflicting effects on catch and survival rates of species of conservation concern, and have NORMA and catch sector companies implement recommended changes.

Milestones: (a) NORMA arranges for analysis of confidential primary longline observer data  
(b) Study analyzing longline observer data of vessels that fished in the FSM EEZ completed and report with recommendations on changes in fishing gear and methods based on the findings produced.

(c) NORMA amends regulations/license agreements and catch sector companies implement changes in fishing gear and methods.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Milestone a = Dec. 2017; Milestone b = Dec. 2018; Milestone c = Dec. 2019

Budget: \$130,000 (\$80,000 in 2017, \$50,000 in 2018) (\$80,000 for study analyzing observer program data; \$50,000 regulatory amendment to implement changes in gear and methods)

### **Activity 6. Pursue improved understanding of stock and population status of ‘secondary’ and ETP species**

Activity: Engage with delegations to WCPFC, and other relevant stakeholders (Section 1.2), including through participation in the WCPO Tuna MSC Alignment Group, in order to pursue recommendations made by stock assessment scientists to improve the certainty of north Pacific Ocean blue shark stock assessments, and to update the two north Pacific blue shark stock assessments no later than 2017. Conduct the same engagement to pursue a rigorous stock assessment of longfin mako shark (listed on Convention on Migratory Species Appendix II, and categorized by the WCPFC Scientific Committee as a ‘key shark species, Clarke and Harley, 2014), in part to determine if stock assessment scientists consider available data to be sufficient.

MSC PI: 2.2.1, 2.3.3

Responsible parties: All FIP participants

Objectives: Support continued improvements in the stock assessment of north Pacific blue shark by SPC and ISC, or other relevant fisheries bodies or organizations, including both in the modeling method and the quality of data inputs, and implement recommendations to update the stock assessments no later than 3 years since the current assessments were conducted.<sup>4</sup>

Milestones: (a) SPC and ISC produce updated north Pacific blue shark stock assessment reports.

(b) NORMA and other FIP participants document engagement with WCPFC, ISC, and SPC, such as through the Alignment Group, to express support for a longfin mako shark stock assessment, if SPC and ISC determine that data inputs are adequate.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Milestones a and b = Dec. 2018.

Budget: Covered under the budget for Activity 1.

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<sup>4</sup> The findings from the two most recent stock assessments conducted for the north Pacific Ocean blue shark stock were inconclusive due to high uncertainty with model estimates, where the results on current stock status varied depending upon the input assumptions, but it is likely that the stock may not be overfished and overfishing is not likely occurring (ISC 2014; Rice et al., 2014). However, while the results varied depending upon the input assumptions standardized catch rates in longline fisheries operating in the western and central Pacific Ocean indicate that relative or local abundance has been declining in recent years (e.g., Gilman et al., 2012; Rice and Harley, 2014).

### **Activity 7. FSM dispute settlement legal framework and consultation processes**

Activity: Determine if it is necessary to amend FSM national legislation to add a clause providing for a dispute settlement process, and obtain clarification from NORMA on fisheries stakeholder consultation processes.

MSC PI: 3.1.1, 3.1.2

Responsible parties: NORMA, TNC

Objectives: Ensure that domestic dispute settlement and consultation processes meet MSC requirements.

Milestones: (a) NORMA reviews and produces a document summarizing FSM government dispute settlement protocols. If the legal framework is considered adequate, then no subsequent action is required, otherwise if the legal framework requires new legislation to create a formal dispute resolution process, then NORMA pursues the change to the FSM legislation.

(b) NORMA produces a document summarizing how and when fisheries stakeholders are contacted, what information is gathered, and how the information obtained is used and integrated into management decisions; distribute the document to longline fishery stakeholders.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Milestones a and b = Dec. 2017

Budget: \$20,000 in 2016 (To provide legal advisory assistance to NORMA if requested)

### **Activity 8. FSM report identified non-compliance with longline license agreements, and actions taken to in response to identified infractions**

Activity: NORMA demonstrates that FSM-based longline vessels are meeting license agreement obligations. NORMA produces an annual public summary of longline (i) surveillance activities (including dockside and at-sea inspections, assessment of VMS data, review of human and electronic monitoring observer data, etc.); (ii) identified infractions; (iii) enforcement actions taken for each identified infraction; and (iv) the outcomes of each enforcement action.

MSC PI: 3.2.3

Responsible parties: NORMA, TNC

Objectives: Create sufficient disincentive for catch sector non-compliance with FSM ecological sustainability rules.

Milestones: NORMA annually produces a document summarizing surveillance activities, identified instances of vessel compliance and non-compliance with longline license agreements, and summarizing actions taken by the FSM government to address identified infractions.

Timeframe: Initiated Jan. 2016 (when the 2016-2018 workplan was adopted). Dec. 2017 and annually thereafter

Budget: In-kind by NORMA and TNC

## **2.2.2. FIP Programmatic Activities**

### **Activity 9. Traceability Methods and Audits**

Activity: In line with CASS guidance, that FIPs, “work toward including traceability as part of their objectives,” (CASS, 2015), the supply chain companies will provide full traceability from vessel to the end of the supply chain. In addition, an independent audit of the FSM longline fishery product traceability systems will be conducted at least every 3 years in order to identify areas of risk that enable the supply chain companies to take corrective actions.

Responsible parties: LTFV, YRFC, Anova, Norpac, Sea Delight, NORMA



**Objectives:** Companies sourcing from the FIP are able to trace products back to individual companies participating in the FSM fishery in order to distinguish it from products derived from other fisheries.

**Milestones:** (a) Independent traceability audit of all supply chains by the two catch sector companies (LTFV and YRFC) and suppliers (LTFV, Anova, Norpac, Sea Delight); (b) LTFV institutes RFID traceability technology for all their landed bigeye and yellowfin tunas; (c) YRFC institute RFID or similar traceability technology for all their landed bigeye and yellowfin tunas.

**Timeframe:** Milestone a = Dec. 2016 and then every 3 years.

Milestone b = Dec. 2015

Milestone c = Dec. 2016

**Budget:** \$25,000 in 2015 and \$75,000 in 2016 to assist LTFV and YRFC and companies buying their product institute traceability technology on main market species landings; \$15,000 for traceability audit in 2016

### **Activity 10. Tracking and Reporting Progress including Independent Audit of Status and Progress**

**Activity:** Produce a public progress report at least every six months. Conduct an independent in-person audit of activity results and progress against the MSC standard every three years by someone experienced with the MSC standard and independent from the organization implementing the FIP (CASS, 2015).

**Responsible parties:** All FIP participants

**Objectives:** Determining the status and progress of the FIP via assessment against the MSC fisheries standard by an independent objective party enables an understanding of remaining deficiencies before the fishery could pass assessment against the MSC standard, and how well the project has been advancing.

**Milestones:** (a) Every 3 years, have an accredited MSC Conformity Assessment Body (CAB) conduct an independent audit of the FIP including by using the MSC Benchmarking and Tracking Tool to assess the current status of the fishery against the MSC standard, and to assess progress since the MSC pre-assessment was conducted. (b) TNC, in consultation with other FIP participants, prepares a public FIP progress report identifying progress against workplan activities and schedule.

**Timeframe:** Milestone a = Dec. 2018;

Milestone b = at least every 6 months

**Budget:** \$2,000 for 2015, \$4,000 for 2016, \$4,000 for 2017, \$19,000 for 2018 (\$4,000 per year to prepare progress reports; \$15,000 for an independent FIP audit in 2018)

### **Activity 11. Ongoing Stakeholder Consultation**

**Activity:** In-person meeting of FIP participants and other stakeholders is to be periodically conducted in order to discuss the status and progress in implementing the workplan and revising the workplan to adapt to new information and circumstances. Dissemination of information of FIP activity implementation and information of relevance to the FIP will occur via a FIP website and through email distribution at least every 6 months, including to distribute public FIP progress reports.

Stakeholder identification, including a supply chain analysis, has been completed, and stakeholder engagement initiated (Section 1.3). Formal FIP participants, and other interested group stakeholders, are identified on the FIP websites, and in this workplan (section 1.4).

**Responsible parties:** All FIP participants

**Objectives:** Communicate information to all FIP stakeholders and solicit their active support and participation in the implementation of the FIP workplan, and adaptive management as needed.

**Milestones:** (a) In-person FIP stakeholder meeting; (b) FIP website content kept up to date; (c) FIP public progress report distributed via email list and posted to FIP website.

Timeframe: Milestone a = at least annually as side event to WCPFC annual session;

Milestones b and c = At least every 6 months.

Budget: \$38,000 per year (\$18,000 for 1 representative of each formal FIP participant to attend annual stakeholder consultation meeting; \$20,000 per year to compile relevant information and maintain FIP website content; dissemination of progress reports in-kind by TNC)

### 3. BUDGET

Activity	Cost	Source	In-kind	Source	Notes
Activity 1. Engagement to Pursue Robust Harvest Strategies Adopted and Implemented					
2015	0		30,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$5,000 per each FIP formal participants.
2016	35,000	TBD	60,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$10,000 per each FIP formal participants, \$35,000 partial support for activities of the WCPO Tuna MSC Alignment Group.
2017	260,000	TBD	60,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$225,000 to SPC for milestone c. \$10,000 per each FIP formal participants, \$35,000 partial support for activities of the WCPO Tuna MSC Alignment Group.
2018	35,000	TBD	60,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$10,000 per each FIP formal participants, \$35,000 partial support for activities of the WCPO Tuna MSC Alignment Group.
Activity 2. Achieve minimum 5% onboard observer coverage rate, confirm which stocks are MSC main secondary and ETP species, and produce higher quality data to input to models assessing population-level effects on main secondary and ETP species					
2015	0	na	15,000	NORMA, SPC	NORMA production of Part 1 annual reports with amalgamated observer data, and replying to requests for primary data are in-kind by NORMA and SPC
2016	100,000	TNC	15,000	NORMA, SPC	\$100,000 for human and electronic monitoring systems. NORMA production of Part 1 annual

					reports with amalgamated observer data, and replying to requests for primary data are in-kind by NORMA and SPC
2017	200,000	TNC, LTFV	15,000	NORMA, SPC	\$200,000 for human and electronic monitoring systems. NORMA production of Part 1 annual reports with amalgamated observer data, and replying to requests for primary data are in-kind by NORMA and SPC
2018	200,000	TNC, LTFV	15,000	NORMA, SPC	\$200,000 for human and electronic monitoring systems. NORMA production of Part 1 annual reports with amalgamated observer data, and replying to requests for primary data are in-kind by NORMA and SPC
Activity 3. Improve observer data collection fields and data collection protocols for ETP handling and release, and compliance with ban on shark retention and use of shark lines and wire leaders					
2015	0	na	0	na	
2016	0	na	0	na	
2017	50,000	TBD	0	na	\$20k to adapt SPC/FFA observer forms, \$30k to adapt observer training program
2018	0	na	15,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC	in-kind to conduct outreach to other observer programs in the region
Activity 4. Build captain and crew capacity to implement prescribed handling and release practices for sharks, rays, turtles, birds and mammals					
2015	0	na	0	na	
2016	32,000	TBD	15,000	NORMA, LTFV, YRFC	\$2500 to print materials for ~50 vessels, \$17,500 for handling/release equipment for 50 vessels; shipping in-kind by LTFV Asia Pacific Airlines; \$12,000 for consultant to provide train-the-trainer workshop; continual captain training in-kind by NORMA and catch sector companies
2017	0	na	15,000	NORMA, LTFV, YRFC	Continual captain training in-kind by NORMA and catch sector companies

2018	0	na	15,000	NORMA, LTFV, YRFC	Continual captain training in-kind by NORMA and catch sector companies
Activity 5. Through analysis of observer data, identify fishery-specific economically viable best practices to mitigate bycatch of species of conservation concern, and amend FSM regulations and company policy to implement these identified best practices					
2015	0	na	0	na	
2016	0	na	2,500	NORMA, TNC, SPC	NORMA authorizes access to confidential primary longline observer data to TNC
2017	80,000	TBD	0	na	Study analyzing observer program data
2018	50,000	TBD	0	na	Regulatory amendment to implement changes in gear and methods
Activity 6. Pursue improved understanding of stock and population status of 'secondary' and ETP species					
2015	0	na	0	na	Covered under the budget for Activity 1
2016	0	na	0	na	Covered under the budget for Activity 1
2017	0	na	0	na	Covered under the budget for Activity 1
2018	0	na	0	na	Covered under the budget for Activity 1
Activity 7. FSM dispute settlement legal framework and consultation processes					
2015	0	na	0	na	
2016	20,000	TBD	0	na	Legal advisory services for domestic dispute settlement
2017	0	na	0	na	
2018	0	na	0	na	
Activity 8. FSM report identified non-compliance with longline license agreements, and actions taken to in response to identified infractions					
2015	0	na	0	na	
2016	0	na		NORMA, TNC	Public report on surveillance activities and effort, identified instances of vessel compliance and non-compliance with longline license agreements, and summarizing actions taken by the FSM government to address identified infractions
2017	0	na		NORMA, TNC	Public report on surveillance activities and effort, identified instances of vessel compliance

					and non-compliance with longline license agreements, and summarizing actions taken by the FSM government to address identified infractions
2018	0	na		NORMA, TNC	Public report on surveillance activities and effort, identified instances of vessel compliance and non-compliance with longline license agreements, and summarizing actions taken by the FSM government to address identified infractions
<b>Activity 9. Traceability Methods and Audits</b>					
2015	25,000	TBD	0	na	\$25,000 to assist LTFV and companies buying their product institute traceability technology on main market species landings
2016	90,000	TBD	0	na	\$15,000 for traceability audit; 75,000 to assist LTFV, YRFC and companies buying their product institute traceability technology on main market species landings
2017	0	na	0	na	
2018	0	na	0	na	
<b>Activity 10. Tracking and Reporting Progress including Independent Audit of Status and Progress</b>					
2015	2,000	TBD	0	na	\$2,000 to prepare progress reports
2016	4,000	TBD	0	Na	\$4,000 to prepare progress reports
2017	4,000	TBD	0	Na	\$4,000 to prepare progress reports
2018	19,000	TBD	0	na	\$4,000 to prepare progress reports; \$15,000 for an independent FIP audit
<b>Activity 11. Ongoing Stakeholder Consultation</b>					
2015	5,000	TBD	18,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$18,000 for 1 representative of each formal FIP participant to attend stakeholder consultation meeting; \$5,000 to compile relevant information and maintain FIP website content; dissemination of progress reports in-kind by TNC

2016	20,000	TBD	18,000	Anova, LTFV, NORMA, Norpac, TNC, YRFC	\$18,000 for 1 representative of each formal FIP participant to attend stakeholder consultation meeting; \$20,000 to compile relevant information and maintain FIP website content; dissemination of progress reports in-kind by TNC
2017	20,000	TBD	18,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$18,000 for 1 representative of each formal FIP participant to attend stakeholder consultation meeting; \$20,000 to compile relevant information and maintain FIP website content; dissemination of progress reports in-kind by TNC
2018	20,000	TBD	18,000	Anova, LTFV, NORMA, Norpac, Sea Delight, TNC, YRFC	\$18,000 for 1 representative of each formal FIP participant to attend stakeholder consultation meeting; \$20,000 to compile relevant information and maintain FIP website content; dissemination of progress reports in-kind by TNC

## 4. FIP CONTACTS

The following individuals are designated points of contact for matters related to the FSM longline tuna FIP:

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