Workshop on Western and Central Pacific Tropical Tuna Longline Fishery Management

November 1 & 2, 2022
Western Pacific Regional Fishery Management Council Offices
Honolulu, Hawaii, USA

Workshop Report

Day 1 (November 1, 2022)
Welcome and Introductions

Co-conveners Kitty Simonds, Executive Director of the Western Pacific Regional Fishery Management Council and Glen Joseph, Marshall Islands Marine Resources Authority, opened the workshop and thanked everyone for their participation. This inaugural workshop is intended to develop guidance on longline fishery management in the Western and Central Pacific (WCPO) and identify mutual interests, which can be used to develop principles shared among several WCPFC members when revising or developing a new tropical tuna measure. The workshop will increase prioritization of revising longline components of the tropical tuna measure. Key outcomes of the workshop could also serve as a guide to a side event at the 19th Regular Session of the WCPFC and a series of follow-up workshops in 2023 to develop a new tropical tuna measure at the 20th Regular Session of the WCPFC.

The main goal of the workshop was to identify key areas of consideration towards developing new longline measures within any future or revised tropical tuna measure, taking into account best available information.

Workshop Overview, Objectives, and Anticipated Outcomes

Participants discussed the workshop concept note (Appendix A), including the following four themes and objectives: 1) Describing regional and operational characteristics of longline fisheries in the WCPO; 2) Zone-based longline management scheme; 3) Needs from scientific services provider; 4) Management objectives. Participants to the workshop are listed in Appendix B.

The anticipated outcomes for this workshop can serve as a basis for a path forward for mutual objectives when the WCPFC tropical tuna measure, CMM 2021-01, is up for expiration following the 2023 fishing year.

Agenda Item III - Describing Regional and Operational Characteristics of Longline Fisheries in the WCPO

Mark Fitchett, Western Pacific Regional Fishery Management Council, presented an overview on the differences in longline fleet characteristics, such as sizes of vessels, numbers of crew

operating, and observer coverages. Distant water fisheries from China, Chinese Taipei, Japan, and Korea have a wide range of vessel sizes, with the average longliner being 34 m length with an average crew of 17. Pacific Island Fleets (excluding Vanuatu) have an average vessel size of 25 m and a crew of 8. The Hawaii and American Samoa fleets are smaller, at 22 m length on average with a crew of 6. The Hawaii longline fleet is capped at a vessel size of 101 feet (between 33 and 34 m). Fitchett also presented vessel size categories (< 25 m, 25-40 m, and > 40 m length). Both Pacific Island and Hawaii/American Samoa fleets had all vessels under 40 m. More information, including information on transshipment history and observer coverages, can be found in Appendix C.

Participants noted this information is important to inform a tropical tuna measure. The issues of targeting, differences among fleets, distinctions of sizes, and capacities need to be considered.

A. Hawaii longline fishery

Eric Kingma, Hawaii Longline Association, presented on the Hawaii longline fishery, a fleet of 145 vessels today, that operate exclusively out of Honolulu. The fishery produces high quality fresh fish with a dockside value of $125 million, representing over 85% of Hawaii's commercial fisheries landings and revenue. Nearly 10,000 people in Hawaii depend on the fleet and associated industry, which has an overall annual economic impact of $867 million. The Hawaii longline fishery is a two sector fishery, deep-set for tuna (bigeye and yellowfin) and shallow-set for swordfish. The Hawaii longline fishery is subject to a limited entry program (164 max vessels) and vessels are capped at 101 feet length. The fleet does not transship at sea and is subject to 20% observer coverage in the tuna longline sector and 100% observer coverage in the swordfish sector. The fishery's historical footprint is 1500 nm from Honolulu, but has moved more to the north and east in recent years. Approximately 80% of effort is on the high seas due to domestic area-based closures, with most of the fleet's effort occurring in WCPO. The US EEZ around Hawaii is mostly closed due to Marine National Monuments and nearby Johnston Atoll is also fully closed to the fleet. The Hawaii fishery operates in Region 2 of the bigeye stock assessment region, which is shown to be among the lowest depleted regions in the stock assessment. The Hawaii longline fishery is the State of Hawaii's largest food producer, with 80% of landings staying in Hawaii, and supporting the local community that eats seafood at a rate twice the national average. COVID-19 lost the fishery nearly $40 million in 2020.

The Hawaii longline fleet catches all of the US WCPO bigeye longline limit (3,554 mt), with the limit typically reached in July or August. The existing US WCPO bigeye limit remains lower than when the US bigeye longline limit was first established under CMM 2008-01 (4,172 mt in 2009) when bigeye was assessed to be subject to overfishing. Since 2011, in order to keep operating year around and the peak holiday market, the Hawaii fleet has been fishing under bigeye fishing agreements with US Participating Territories (see paragraph 9 of CMM 2021-01). When taking into account landings from the EPO, the fleet has a demonstrated capacity to land over 8,000 mt into Honolulu, coming from both the WCPFC and IATCC waters. Kingma asserted that the Hawaii fishery's long-term viability is affected by the WCPFC tropical tuna measure and that there is a need to improve the measure.

It was noted that both the RMI and Hawaii have seen lower catches of bigeye due to a La Nina condition which has created some shifts in distribution. Hawaii has seen an increase in smaller bigeye in local handline fishery, which may be a positive indicator for the following year. Yellowfin CPUE has increased and swordfishing has been good this last year and a half.

Participants noted that climate change would need to be accounted for in developing a tropical tuna measure and that the fishery is an important contributor to food security.

B. Marshall Islands and other FFA longline fisheries

Laurence Edwards, Legal Counsel of Marshall Islands Marine Resources Authority (MIMRA), presented on the longline fisheries of the Marshall Islands (RMI). Most of the vessels in the RMI are chartered or ventured from China (LuenThai), FSM, Japan, and Chinese Taipei. Most catches are ice-chilled tuna. In-zone catches since 2017 have been 3500-4500 mt, with bigeye tuna being the prominent species. Most in-zone longline effort are in the south and eastern extent of the EEZ

PNA longline vessel day scheme (VDS), under the PNA Palau Arrangement, uses a zone-based management scheme (the "Longline VDS"), monitored by PNA fisheries information management system (FIMS). Joint ventures and charters are also included in the Longline VDS, noting the RMI does not have flagged longline vessels. The Longline VDS may have different management currents and profitability of fisheries participating in the Longline VDS are considered, including those participating in fresh fish fisheries.

Electronic Reporting (ER) is being implemented in the distant water fleet and domestic fleets. ER submissions for vessels fishing within RMI are made at the end of the trip, but it was noted that implementation of EM has been delayed by the COVID-19 pandemic. Participants noted that EM is being introduced through the PNAO and the Nature Conservancy (TNC), and that this is a trial program that will need to move to formal implementation. The Hawaii and American Samoa longline fisheries are also in the process of expanding EM.

The RMI longline fisheries have access to US markets alongside the Hawaii longline fishery through large retailers in Hawaii and continental US, like Costco.

It was noted that there is an exclusion zone of 50 miles around RMI islands for longline vessels to protect small scale fishers that contribute to the local markets. Local fishermen in the RMI are the main source of fish to restaurants and local markets. Some lower grade tuna enters the local market contributing to national food security. This is in line with a regional initiative to increase the contribution of tuna to food security.

C. Other distant water longline fisheries

CPUE information was presented, contrasting Japan, Korea, and Hawaii (US) longline fisheries for bigeye tuna. Hawaii longline CPUE was notably lower than the other distant water fisheries through time. It was noted that the spatial extent of the Korea and Japan longline fishery may be much broader than the Hawaii fleet. Not all fleets have the mobility to shift operations in face of

climate change and changes in oceanographic conditions. These CPUE series, including the Japan CPUE series, are very important in informing stock assessments for bigeye tuna.

It was noted that many of these other distant water fisheries are difficult to monitor and enforce because they move and are hard to follow and that these larger vessels need more visibility and MCS measures. Fisheries that are fresh fish fisheries are not comparable with ultra low temperature (ULT) fisheries that transship and move throughout the Pacific.

D. Other fleets

The workshop noted there are other longline fisheries, including the South Pacific albacore fishery and longline sectors targeting swordfish that may have operational differences. These fisheries and their relevant conservation and management measures need to be compatible with measures for longline fisheries targeting tropical tunas.

Agenda Item IV - Zone-based Longline Management Scheme

Leonard Rodwell, FFA, provided an overview of zone-based management contrasting it with traditional flag-based measures that favored allocations for distant water fishing nations (DWFNs) on the basis of catch histories. This approach freezes out aspirations for coastal/island states. In the WCPO, the approach is to allocate rights to island states, recognizing that EEZs of island states comprise a significant portion of the of the WCPO region. The PNA vessel day scheme was the first example setting total allowable effort for the fishery with that total allowable effort allocated among the Parties. Zone-based schemes such as the VDS do not preclude the participation of distant water fishing nations as they can still fish under licenses in the EEZs. The VDS assures coastal states sovereignty and rights are provided for in the management of the fishery.

It was noted that the currency for longline catch limits are very difficult to determine, given multijurisdictional issues and difficult to monitor some fisheries that transship and may offload at multiple locations.

A participant noted that zone-based management is in fact simple and consistent with the UN Law of the Sea. The North Pacific Fisheries Commission also considered zone-based arrangement given the range of saury fisheries, and considered a ratio of in-zones and high seas where these resources overlap. This participant encouraged participants to not ‘overthink’ zone-based management.

Participants acknowledged that zone-based management has utility for management with multi-jurisdictional issues. Further discussion and clarification is needed on the application of the Longline VDS with nations that do not utilize fishing inside zones. Neither management regime, Longline VDS or current catch limits, have increased MCS for some distant water fisheries. Participants acknowledged the need to incentivize MCS through application of zone-based management.

It was noted that the longline VDS has its origins in rights prompted by investors' concerns on lack of secured rights around Pacific Island states. There is a need to reconcile the balance between in-zone and high seas fishing.

Participants acknowledged the need for consistency for monitoring transshipment, particularly on the high seas.

Participants noted that MCS has been enhanced in-zone, would like to see MCS expanded on the high seas, and would prefer to use the existence of strong MCS measures among fisheries to inform fishing limits.

Tropical tuna stocks are sustainable and MCS measures need to be incorporated in management to ensure the stocks remain productive. Participants agreed proper management should not reward fleets that perform poorly in terms of compliance.

A participant contended that the Hawaii longline fishery is not truly a distant water fishery and requested it to be distinguished as such as negotiation proceed. It was noted that the Hawaii fishery also supports development of US Participating Territories, and acknowledges issues with developing fisheries given logistical shortcomings.

It was noted that WCPFC Pacific Island Countries do not have catch limits and these nations still have aspirations for development. UNCLOS ensures sovereign rights, so changes to the tropical tuna measure need to ensure compatibility between catch limits and zone-based management.

Tuna stocks are healthy and this is the proper time to have these discussions on political pathways. A participant noted that Korea acknowledged in 2019 that climate change is forcing their purse seine fisheries to fish more on the high seas, and showed willingness to work with Pacific Island Countries to reduce disproportionate burdens. For longline fisheries, there is an opportunity to develop a balance on fishing on high seas and in zone through negotiations. Japan has not fully utilized its bigeye tuna catch limit and may be willing to work through negotiations.

The need for renewed partnership between Pacific Island Countries and other nations was noted by the participants.

The issue of transferability was noted as important for some fisheries. Further discussion on transferability is needed and must be compatible within zone-based and high seas management.

It was noted that in the past, agreements involving distant water fishing nations were government-to-government, but that has changed over time. The arrangements have been commercial arrangements, made between Pacific Island states and companies, with some government involvement. VDS has been simpler for China, since it is a newer participant. Chinese Taipei has been another large participant. Some nations have been opposed to the VDS given the need for high seas access, but could become somewhat sympathetic to the VDS.

Participants discussed whether it is necessary or critical that catches within a zone be attributed to the zone or the flag within the tropical tuna measure. It was noted that typically, attribution of catch goes to the flag state on the high seas and to the corresponding national zone when caught inside an EEZ. This has been an issue with the Indian Ocean Tuna Commission.

Regarding allocations, it was stated that if catch history is used, it needs to include past or potential catch within coastal states. SPC confirmed that half of longline catch for yellowfin have been caught on high seas and two-thirds of longline-caught bigeye are on the high seas. These ratios have changed over time.

Participants noted the spatial heterogeneity of tuna resources and differences in depletion levels as analyzed in stock assessment and catch rates. Differences of abundances of tuna resources exist even among the EEZs of Pacific Island nations. Tropical longline fisheries are often distinguished by 10 S to 20 N, but the Hawaii fishery operates in an area north of 20 N and in a region of different characteristics. If the high seas is considered a 'zone', it was suggested to consider how high seas areas are different from region to region as well.

Agenda Item V - Management Objectives

Management objectives vary among fisheries and participants were encouraged to discuss the diversity of management objects among WCPO tropical tuna longline fisheries.
Some management objectives may conflict with each other and have trade-offs. But there is a need to reconcile differences where possible.

The US proposal to the 2021 18th Regular Session of the WCPFC was discussed. It was based on scientific information that four nations with specified longline bigeye tuna catch limits could potentially have catches increased by 3,000 mt each (12,000 mt added to 'recent' bigeye tuna catch), without any appreciable risk of breaking the limit reference point for bigeye tuna. This also noted that some fishing nations have not fully utilized a significant portion of their catch limit.

Participants discussed whether a specified total catch biomass of longline-caught bigeye tuna needs to be allocated and partitioned by high seas and in-zone first, or by using existing catch limits as a starting point. A participant stated that the current catch limits do not consider the sovereign rights of coastal states. These limits are in many cases derived from catch taken in coastal state waters by other flag states, but that catch actually should be attributed to the relevant coastal states. The percentage of flag-based catch limits allocated on high seas need to be addressed. The principles as to how we discern these ratios need to be made. It was suggested whether zone-based fishing limits would be collective across members or partitioned by individual states; this issue needs to be negotiated. It was noted that any such allocation may not affect the USA since its catch history does not include fishing inside the EEZ of other countries and only a small portion within its own EEZ.

It was noted that fishing on the high seas may depend on domestic area closures, seasons, and fishing performance. It was further noted that there is a need for limit increases in order for the US fishery to meet its demand. It was suggested that a proposal to do such should provide some balance on conservation impact, but also consider MCS and uncertainty associated with catch reporting as well.

Participants discussed if the bigeye catch limit tables should be expanded to include coastal states and if there are two limits for an in-zone and high seas fishing limit. It was noted there may be two partitioned catch limits that should include in-zone catches and high seas catches in

order to be consistent with UNCLOS and Convention Text. Some participants suggested limits for coastal states. The idea of transferability should be up for negotiation.

It was agreed that developing some framework or guidelines towards allocations between in-zone and on high seas would be a major step.

Agenda Item VI - Needs and Discussion from Scientific Services Provider

Graham Pilling (SPC OFP) summarised the work undertaken by the WCPFC Scientific Services Provider since the agreement of CMM 2021-01 in 2021. Activities for 2022 have focused on the skipjack stock assessment agreed at SC18, work on harvest strategies for skipjack and South Pacific albacore, and the independent review of the yellowfin stock assessment - advice from which will feed into the assessments of both bigeye and yellowfin scheduled for 2023. It was noted that specific management objectives for bigeye and yellowfin tuna have yet to be discussed in detail and that outcomes for these stocks needed to consider the multi-gear nature of the fishery. Graham also presented scientific information on tropical tunas, focusing on longline catch levels in the WCPFC by EEZ and high seas areas. The relatively high proportion of longline catch taken on the high seas was noted.

Participants discussed how climate change impacts are captured in stock assessment analyses and what kind of modeling is underway. Pilling noted there are some east-west changes in CPUE that could be captured through the standardised regional longline CPUE indices used within stock assessments. The SPC is engaged on climate change forecasts of impacts on tuna stocks. The SPC will also present climate indicators to the Commission. The next step is to improve on the spatial precision of modeling climate change impacts across EEZs and the high seas across the entire Convention Area. WCPFC is the only tuna RFMO currently using models like SEAPODYM, but work for the Indian and Atlantic Oceans, through the ABNJ program, will be using this modeling platform to discern climate change impacts on tuna fisheries.

It was suggested that zone-based management, like any management regime, could be set up for failure if not adaptive by design. A particular zone may not be as productive in the future. Lack of transferability could preclude opportunities within some coastal state EEZs as well.

Key Outcome Points from Day 1:

- Operational differences among all fleets, which include targeting, distinctions of vessel sizes, and capacities need to be considered in implementing zone-based and high seas longline management measures and when revisiting a tropical tuna measure.
- Uncertainties and foreseeable impacts associated with climate change on fisheries/fleets and SIDS and Territories' development aspirations need to be considered. Ongoing work on the impact of climate change needs to be given high priority.
- Provisions on MCS need to be included in developing any future management measure. The workshop acknowledged that MCS is being enhanced in-zone, and similar enhancements should apply on the high seas. Application of MCS measures should be linked to future high seas limits.
- Options on transferability of fishing limits, an important component for many fleets, need further discussion.

- Acknowledgement that the principle of compatibility is a key consideration in developing zone-based and high seas longline measures.

Day 2: November 2, 2022

Continuation of Discussion on Management Objectives

Brian Kumasi, PNAO, presented on a paper submitted by FFA/PNA to WCPFC19 on a proposed management procedure for WCPO skipjack tuna. The proposed interim Management Procedure is designed to improve decision-making on management and conservation for skipjack tuna fisheries by having pre-agreed rules for how fishing will be adjusted as status of stocks change, and better taking account of uncertainty. The adoption of an interim Management Procedure for this stock will be a further important step in ensuring the effective management and sustainable use of the stock and meeting the interests of the growing number of customers in buying sustainable tuna products. In this respect, the proposed conservation and management measure (CMM) is also an important step in the implementation of CMM 2014-06 on establishing harvest strategies for key fisheries and stocks in the WCPO. More information affixed to Appendix B. Kumasi said the output of the skipjack management procedure will provide a general understanding of management needs.

It was noted there were five harvest strategies favored at the Science-Manager Dialogue following the 18th Science Committee. There was concern that once biomass levels are above 50% depletion rate, that an increase in purse seine effort as prescribed would render more purse seine fishing using FADs, which could likely have implications for bigeye tuna. It was agreed that there is a need for further discussion on this matter.

It was noted that the effort metric for purse seine fishing are fishing days and that a fishing day using FADs and free school have impacts that are different for bigeye tuna (and likely skipjack). The implication for bigeye tuna needs to be included.

Participants noted that the proposed management procedure is designed to reduce market/supply shocks and maintain stability, which is a positive step.

A participant noted that the skipjack biomass depletion ratios have decreased 17% since 2012. Clarification was provided that the changes from 2012 biomass levels provide guidance on desirable target reference points (TRPs) since we have new information from stock assessments and updated data from Indonesian and Philippines fisheries.

It was noted that the harvest strategies would be accounting for all major fisheries, noting that those in archipelagic waters are outside the control of the management procedure, and that archipelagic skipjack catch is approximately 20%. The management procedure as a trial period will allow the monitor strategy to be developed. The scenarios analyzed currently assumed baseline conditions for Indonesia-Philippines archipelagic fisheries to be at more recent 2016-18 levels and Japanese pole-and-line fisheries from 2001-2004 when effort was higher. SPC has no opinion on whether this management procedure and harvest strategy will be a trial, that being a decision for the Commission, but noted there are benefits in that it allows for the adjustment of Commission processes to implement harvest strategies.

While WCPFC members have the luxury of having healthy tuna stocks, participants agreed that WCPFC members should still have some urgency to make progress on the development harvest strategies and management procedures.

Discussion of FFA Paper on Views going into WCPFC19 - DP-03

It was noted that in DP-03, the FFA proposes to defer deliberations on longline bigeye catch limits until 2024. It was noted that other WCPFC members may disagree with this proposal, as negotiations previous in years over the tropical tuna measures featured a "package" of measures for fisheries. It was suggested that the idea behind delaying negotiations on longline bigeye tuna catch limits was that purse seine management procedures would proceed faster and need to be reconciled first. Workshop participants identified that discussion on this issue is a matter of priority.

Some participants noted that the FFA statement to defer deliberations on longline bigeye tuna may be more broadly referencing Paragraph 44 in CMM 2018-01 that said that hard limits for CCMs would be resolved by 2020. If this is the case, then potential adjustments to longline measures could be considered while development of 'global' limits progress.

Discussion on Fleet Specific and Global Management Objectives

It was noted that an objective for a fishery is often optimal yield or 'pretty good yield'. There is also a need for maximizing market conditions. For bigeye tuna, that could be the prevalence of larger fish in catches that maximize market value. Participants agreed that mixed fishery effects are a critical issue including the skipjack management objective on bigeye. In the past there was a desire to optimize yields for skipjack tuna while minimizing bigeye tuna, noting that canneries wish to reduce bigeye as well. There were some initiatives led by ISSF that worked with canneries to determine how much bigeye was to be acceptable for vessels.

Participants also offered some suggestions on traceability or tracking of catches, which should be incentivized.

It was noted that there have been some interests among the PNA to expand and develop some longline fisheries. Barriers include access to market infrastructure and fishery performance. Fuel prices and bait prices have gone up, and bait shortages have inherent performance issues. $50,000 is the fixed cost per vessel associated with a Hawaii longline vessel departing the docks. Access to US, EU, and Japanese tuna markets are paramount for Pacific Island longline fisheries, in addition to food security. There are benefits to being in proximity to a US market and that improvements to market access is imperative. US markets are indeed large but also come with some draw-backs noting competition with more cost-effective Southeast Asia operations. The EU market is important given the preferences that Pacific Island fisheries have through the Interim Economic Partnership Agreement, which provide some advantage over Southeast Asian operations. South Pacific Group has highlighted the same market access challenges which are likely shared with American Samoa's longline fishery. While the Southern Longline fishery is primarily targeted on albacore, the issues are shared.

Regarding US market access, it is believed that there is room for Pacific Island fisheries to enter. The US market dynamics are driven by supply of fresh and frozen products in the supply chain. For example, the Hawaii longline fleet cannot produce enough to meet demand, even local

demand. Emergence of frozen CO-gassed tuna has had an impact which brought new consumers to eat fish, particularly those in the continental US. The Office of the US Trade Representative (USTR) does have considerations on market access preferences, which some participants asserted could be beneficial to Pacific Island parties, including those involved in the South Pacific Tuna Treaty.

It was noted the issue of food security is more direct with respect to longline fisheries for Pacific islands, much more than the global tuna commodity. An objective for fresh fish fisheries and local fisheries are to catch sufficient amount of fish in a shorter period of time, given the range of vessels and nature of the fresh fish fishery to supply markets expeditiously.

Participants agreed the COVID-19 pandemic had a much bigger impact on Pacific Island longline fisheries than it did on the purse seine fisheries with limited airfreight capacity and a decline in demand from major markets. The immediate challenge is to restore the fishery to its pre-COVID levels. CPUE indices used throughout the entire WCPO and impacts of COVID-19 pandemic will be reflected likely in data used in upcoming stock assessments.

Participants discussed how revised Marine Stewardship Council (MSC) certification requirements have been developed that may impact the certification of Pacific Island fisheries. There are a range of changes affecting tuna fisheries in the new version of the MSC standards. The new MSC standards are to be more flexible with timing but raised its standards with respect to harvest control rules, which may include specificities with allocations. There are also updated provisions in endangered, threatened, and protected (ETP) species. Participants felt these changes would be beneficial for WCPO tuna fisheries. There will be key senior individuals from the MSC at WCPFC19 in Da Nang. It was suggested that participants should review DP-06 submitted to WCPFC19, which responds to adjudicators for the MSC and proposes an amendment to CMM 2014-06 *on Establishing a Harvest Strategy for Key Fisheries and Stocks in the Western and Central Pacific Ocean*. WCPFC members may consider new MSC provisions or run the risk of losing certifications for several WCPO fisheries.

Participants all agreed that an outcome from these discussions need to be included in a road map for tropical tunas. There are also issues of unutilized catch limits by some flag states with specified bigeye tuna catch limits, which need to be addressed. In 2023, there will be new stock assessments for yellowfin and bigeye tuna, which may reflect impacts of the prevailing 2020-2023 La Nina condition and COVID-19 impacts. Scientific information from the Scientific Committee can be updated to inform WCPFC Regular Session in 2023 and discussion on the tropical tuna measure.

Key Considerations Emerging from Workshop

The workshop participants identified the following considerations to guide future efforts to develop a tropical tuna measure for the WCPO, with respect to longline fisheries:

1. Operational differences among the fleets, including but not limited to targeting, distinctions of vessel sizes, and capacities, need to be considered in developing and implementing any zone-based and high seas longline management measures when revisiting a tropical tuna measure.
2. Uncertainties and foreseeable impacts associated with climate change on fisheries/fleets and SIDS and Territories' development aspirations need to be considered. Ongoing work on the impact of climate change needs to be given high priority.
3. Provisions on MCS need to be included in developing any future management measure. The workshop acknowledged that MCS is being enhanced in-zone, and similar enhancements should apply on the high seas. Application of MCS measures should be linked to future high seas limits.
4. Options on transferability of fishing limits, an important component for many fleets, need further discussion.
5. Acknowledgement that the principle of compatibility is a key consideration in developing zone-based and high seas longline measures.
6. Recognizing the need for adjustments to current tropical tuna longline limits while continued considerations of WCPFC limits are underway.
7. Discussions for the next tropical tuna measure needs further consideration of mixed fishery issues.
8. Development of a roadmap for revising Paragraphs 41-45 of CMM 2021-01 is needed to clarify the next steps and to ensure required information is available.
9. Management Objectives for tropical tuna longline fisheries to be evaluated with consideration of the associated trade-offs and requiring further refinement:
    - Promote optimal yield ("pretty good yield") - maintain yellowfin and bigeye tuna biomass at levels that can optimize yield and support island-based food security.
    - Enhance fishery performance, including high CPUE and considerations of efficiencies for fresh fish operations.
    - Maximize market value through prevalence of large and/or high value fish
    - Ensure human rights and safety at sea for fishing crew.
    - Ensure collection and provision of accurate and timely catch/effort information
    - Minimize/Reduce impacts from longline fisheries on associated and dependent species

Next Steps

The Workshop identified key considerations that will need further deliberation related to longline provisions in a future tropical tuna measure. As a result, participants agreed to a series of follow-up meetings and workshops, tentatively scheduled for February or early March 2023 with expanded participation in Honolulu, Hawaii USA.

Appendix A

Concept Note: Workshop on Western and Central Pacific Tropical Tuna Longline Fishery Management

Themes and Objectives

Overarching Goal: To develop recommendations to update WCPFC CMM-2021-01, specifically management measures for WCPFC longline fisheries targeting tropical tunas, taking into account best available information.

Conveners: Western Pacific Regional Fishery Management Council and Marshall Islands Marine Resources Authority[1]

Participants: Government officials, scientists, industry, NGOs, observers

Theme 1: Describing regional and operational characteristics of longline fisheries in the WCPO.

Objective 1: Explore sub-regional fishery operational characteristics and associated objectives;

Objective 2: Evaluating existing domestic and international longline management regimes including data reporting, monitoring, control, and surveillance.

Theme 2: **Zone-based longline management scheme**

Objective 1: Furthering understanding of zone-based management options of longline fisheries.

Objective 2: Consideration of longline VDS and economic variables including operational costs, national development, and market destinations.

Objective 3: Evaluating the compatibility of ZBM and other management measures (e.g. flag-based catch limits; area based limits) and identification of appropriate management currency (e.g. VDS, catch, effort, capacity).

Objective 4: Understanding accountability measures associated with ZBM (e.g. VMS, observers, logbooks)

Discussion considerations: Definition of areas to develop catch/effort controls (EEZ, high seas, stock assessment regions), aspirations of SIDS and Participating Territories, regional depletion and productivity, precautionary approach, disproportionate burden, in zone and high seas compatibility, possible monitoring and surveillance requirements for longline fisheries, transferability of catch/effort limits.

[1] In 2015/16, the Council and MIMRA convened two workshops focusing on purse seine management issues in the WCPO. WCPO Purse Seine BET Management Workshop II (Majuro) report for TCC11 | WCPFC Meetings

Appendix A

Theme 3: Needs from scientific services provider

Objective: To determine what scientific information is needed with regularity to implement and monitor ZBM and other compatible longline measures

Theme 4: Management objectives

Objective 1: Identify conservation targets (stock biomass, risk levels, etc.) and social/economic targets specific to WCPO longline fisheries;

Objective 2: Identify possible fishing privileges for fleets considering levels of monitoring, operational characteristics, and region

Objective 3: Further progress Harvest Strategies including identification of management objectives for longline fisheries

Discussion considerations: biological target reference points for longline fishery sector, regional/zone-based targets, timelines to achieve harvest strategies, fishery/economic performance indicators, preventing disproportionate burden to SIDS and Participating Territories.

Appendix B

Workshop Participants

Name	Organization	Participation Status
Glen Joseph	Marshall Islands Marine Resources Authority (MIMRA)	Co-convener
Laurence Edwards	Marshall Islands Marine Resources Authority (MIMRA)	In person
Beau Bigler	Marshall Islands Marine Resources Authority (MIMRA)	Virtual
Jamel James	Federated States of Micronesia National Oceanic Resource Management Authority (NORMA)	In person
Feleti Teo	WCPFC Executive Director	In person
Brian Kumasi	Parties to the Nauru Agreement (PNA)	In person
Les Clark	Parties to the Nauru Agreement (PNA)	Virtual
Leonard Rodwell	Pacific Islands Forum Fisheries Agency (FFA)	In person
Graham Pilling	Pacific Community (SPC)	In person
Quentin Hanich	Australian National Centre for Ocean Resources and Security (ANCORS)	Virtual
Eric Kingma	Hawaii Longline Association (HLA)	In person
Sean Martin	Hawaii Longline Association (HLA)	Virtual
Michael Duenas	Guam Division of Aquatic and Wildlife Resources (DAWR)	Virtual
Alexa Cole	US National Marine Fisheries Service (NMFS)	In person
Jason Philibotte	US National Marine Fisheries Service (NMFS)	In person
Keith Bigelow	US National Marine Fisheries Service (NMFS)	In person
Alex Kahl	US National Marine Fisheries Service (NMFS)	Virtual
Sarah Malloy	US National Marine Fisheries Service (NMFS)	In person
Kitty Simonds	Western Pacific Regional Fishery Management Council (WPRFMC)	Co-convener
Mark Fitchett	Western Pacific Regional Fishery Management Council (WPRFMC)	In person

Appendix C

Comparisons of WCPO Longline Fleet Characteristics – Vessel Sizes, Recent Transshipment History, and Observer Coverage

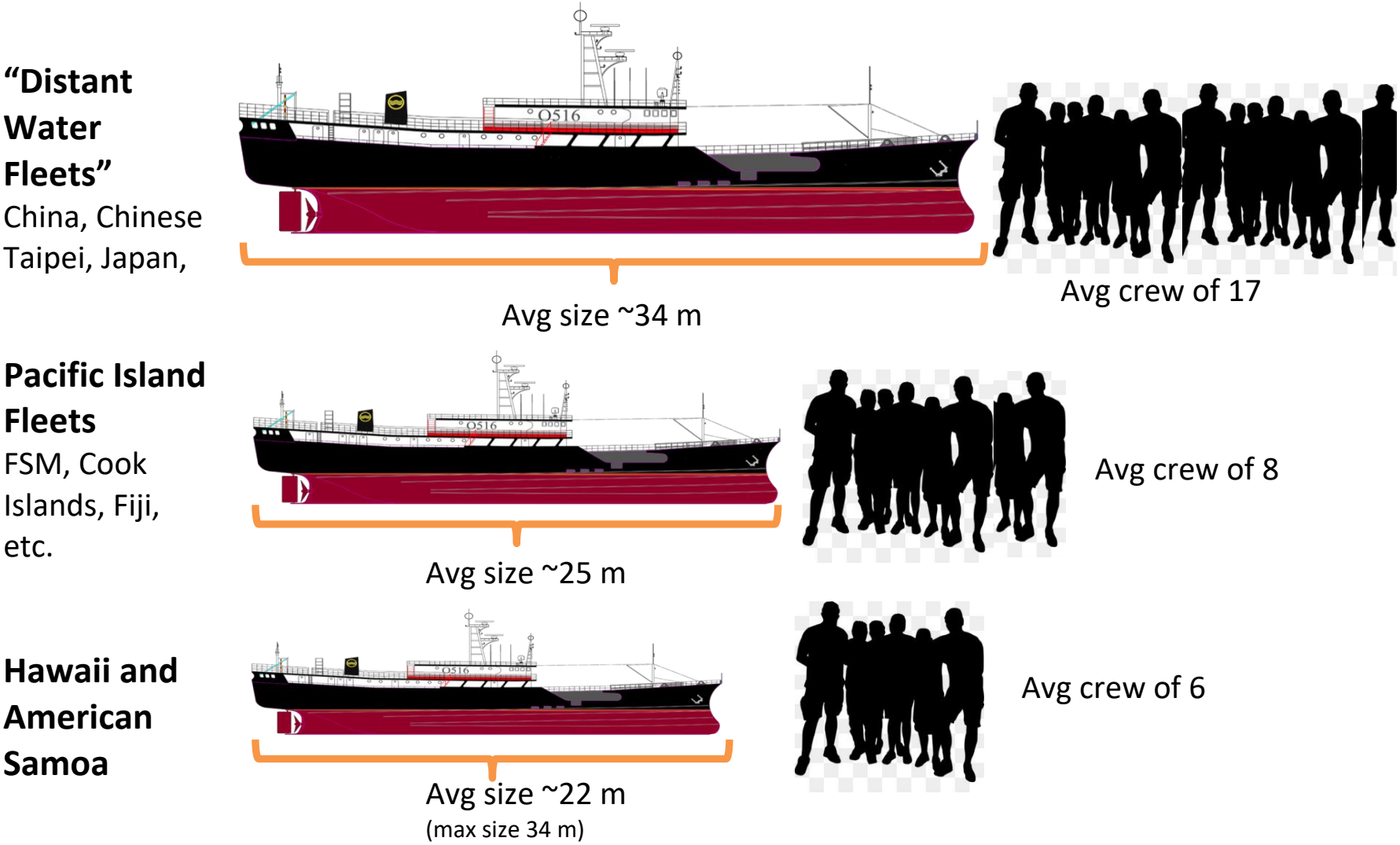

Figure 1 – Graphical comparison of vessel size and crew size of distant water (China, Chinese Taipei, Japan, Korea), Pacific Island (excluding Vanuatu), and the Hawaii and American Samoa fleets. Data from WCPFC Record of Fishing Vessels.

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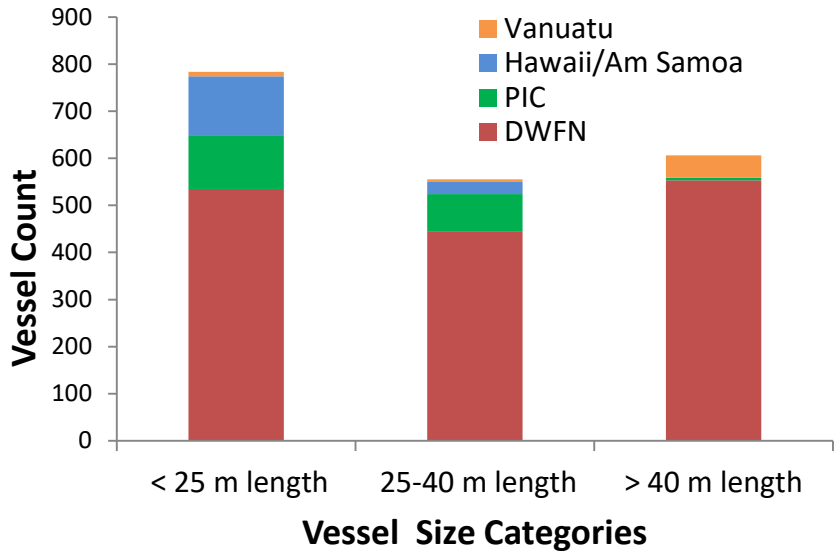

Figure 2 – Breakdown of vessel size categories (lengths, meters) among distant water (China, Chinese Taipei, Japan, Korea), Pacific Island (excluding Vanuatu), US-flagged Hawaii and American Samoa, and Vanuatu fleets. Data from WCPFC Record of Fishing Vessels.

Table 1 – Summary of size (lengths, meters), categories of vessel sizes (length, meters), and average crew sizes among distant water (China, Chinese Taipei, Japan, Korea), Pacific Island (excluding Vanuatu), US-flagged Hawaii and American Samoa, and Vanuatu fleets. Data from WCPFC Record of Fishing Vessels.

Flag	Avg Length (m)	No. < 25 m length	No. 25-40 m length	No. > 40 m length	Avg Crew
DWFN	33.68768	535	444	553	17
SIDS*	25.44615	114	80	6	9
Hawaii/Am Samoa	22.39089	125	26	0	6
Vanuatu	46.19952	10	5	47	24

Table 2 – Transshipment data of catch (metric tons) summarized for yellowfin and bigeye tuna by flag in 2019, prior to COVID-19 pandemic. Data from https://meetings.wcpfc.int/node/11829

Flag	YFT	BET
China	2200	6339
Chinese Taipei	8684	7168
Korea	6765	8357
Japan	21	187
FSM	37	25
Kiribati	422	457
Solomon	999	317
Fiji	3	-
Hawaii/Am Samoa	0	0

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Table 3 – Summary of average vessel size, number of vessels within size categories, average tonnage, and average crew sizes for longline vessels in the WCPF-CA. Data from WCPFC Record of Fishing Vessels. *Tonnage estimates in gross tonnage (GT) estimated from gross registered tonnage for some vessels and associated with appreciable uncertainty.

Longline Fleet	Average Length (m)	No. < 25 m length	No. 25-40 m length	No. > 40 m length	Average of Tonnage*	Average Crew
Australia	20.90	38	1	0	87.16	4.76
China	40.08	14	213	259	391.61	19.14
Chinese Taipei	28.28	304	204	67	138.87	15.84
Cook Islands	28.43	0	5	0	129.33	11.60
Federated States of Micronesia	26.10	3	14	0	116.05	10.29
Fiji	31.90	7	56	5	154.01	12.54
French Polynesia	21.00	87	0	1	178.41	5.90
Japan	29.39	217	27	126	177.08	14.93
Kiribati	27.68	0	3	0	133.00	14.00
Korea (Republic of)	49.68	0	0	101	410.50	25.15
New Caledonia	21.18	15	2	0	101.97	5.71
European Union	39.34	0	25	23	483.43	17.56
Tonga	22.00	1	0	0	80.00	8.00
Tuvalu	20.80	1	0	0	120.00	15.00
Hawaii and American Samoa	22.39	125	26	0	116.26	6.32
Vanuatu	46.20	10	5	47	446.67	24.23
Grand Total	**32.29**	**824**	**581**	**629**	**235.97**	**15.61**

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Table 4. Provisional 2019 Longline Regional Observer Programme (ROP) coverage by flag (pre-COVID-19) – based on reporting from CCMs and data submissions. From: Table 4, WCPFC-TCC16-2020-IP03, https://meetings.wcpfc.int/node/11840

			REGIONAL OBSERVER PROGRAMME (ROP) DATA COVERAGE (minimum required for ROP is 5%)						
CCM Fleet	Fishery	Metric selected for Coverage	Total estimated effort	As reported by flag state		Total estimated effort	As per data submission		See NOTES
				Observer	%		Observer	%	
AUSTRALIA	Domestic	No. of Hooks	–	–	–	–	–	–	2, 17
CHINA	Ice/Fresh	Days fished	56,261	3,677	6.5%	57,270	3,012	5.3%	3, 10, 11, 22
	Frozen								
COOK ISLANDS	Pacific Islands	Days at Sea	3,446	428	12.4%	3,820	432	11.3%	8, 9
EUROPEAN UNION	Distant-water	No. of Trips	17	1	5.9%	17	1	5.9%	4, 10, 19
FSM	Pacific Islands	No. of Trips	–	–	–	–	–	–	26, 27
FIJI	Pacific Islands	No. of Trips	899	144	16.0%	94	14	14.9%	7
FRENCH POLYNESIA	Pacific Islands	Days at Sea	–	–	–	–	–	–	2
INDONESIA	Domestic	No. of Trips	–	–	–	–	–	–	2, 19, 21
JAPAN	Ice/Fresh, short-trip	Days fished	26,527	1,473	5.6%	26,527	1,473	5.6%	10
	Frozen, long-trip	Days fished	7,785	888	11.4%	7,785	888	11.4%	10
KIRIBATI	Pacific Islands	No. of Trips	–	–	–	–	–	–	2
MARSHALL ISLANDS	Pacific Islands	No. of Trips	–	–	–	–	–	–	2, 25
NEW CALEDONIA	Pacific Islands	No. of Hooks	–	–	–	–	–	–	2
NEW ZEALAND	Domestic	No. of Hooks	–	–	–	–	–	–	2
PALAU	Pacific Islands	No. of Trips	–	–	–	–	–	–	2
PAPUA NEW GUINEA	Pacific Islands	No. of Trips	–	–	–	–	–	–	2
PHILIPPINES	Distant-water	No. of Trips	–	–	–	–	–	–	1, 16
REPUBLIC OF KOREA	Distant-water	Days at Sea	26,959	1,919	7.1%	25,032	2,844	11.4%	10, 20, 23
SAMOA	Pacific Islands	No. of Trips	–	–	–	–	–	–	2
SOLOMON ISLANDS	Pacific Islands	No. of Trips	359	15	4.2%	300	19	6.3%	7, 9
TONGA	Pacific Islands	No. of Trips	–	–	–	–	–	–	2
TUVALU	Pacific Islands	No. of Trips	7	1	14.3%	7	1	14.3%	7
CHINESE TAIPEI	Small longline – STLL	Days at Sea	96,706	6,731	7.0%	96,706	4,885	5.1%	10, 14
	Distant-water – DWLL	Days at Sea	20,252	3,031	15.0%	20,252	2,641	13.0%	10
USA	HAWAII/California-based	No. of Trips	1,298	273	21.0%	1,298	273	21.0%	6
	AMERICAN SAMOA	No. of Trips	–	–	–	–	–	–	2, 6
VANUATU	Pacific Islands and DW	No. of Trips	130	8	6.2%	130	8	6.2%	7