

CONCLUSION AND RECOMMENDATION
3rd Stakeholders Meeting on the Implementation of Harvest Strategy
for Tuna Fisheries in FMA 713, 714, and 715
Bogor, 2-3 March 2021

A. CONCLUSION

1. Archipelagic Waters (Indonesia Fisheries Management Area 713, 714 and 715), are part of the Indonesian waters territory flanked by 2 (two) Great Oceans namely: Indian and Pacific Oceans which are rich in tuna resources. In the last 14 years (2005-2018) the estimated average catches of tuna (skipjack tuna, yellowfin tuna, bigeye tuna and albacore) from the archipelagic waters reached 305,693 tons. This represents approximately 49.5% of the estimated total national tuna catches of the of skipjack tuna, yellowfin tuna, bigeye tuna and albacore, which average of 617,281 tons per year. Therefore, in order to ensure the sustainability of these important resources and tuna fisheries business in the archipelagic waters, the 3rd Stakeholder Meeting considers it is important that the Government and all other relevant stakeholders continue to consistently implement the Interim Harvest Strategy Framework that was launched at the Bali Tuna Meeting 3rd Conference, May 31st, 2018. The implementation of this Harvest Strategy is one of the important fundamental elements and is needed in ensuring the sustainable management of tuna fisheries in IAW. The Harvest Strategy concept has been adopted by the tuna Regional Fisheries Management Organizations (RFMOs) and is in various stages of development and implementation in the Western and Central Pacific Fisheries Commission (WCPFC¹), Indian Ocean Tuna Commission² and the Commission for the Conservation of Southern Bluefin Tuna³.
2. The scoping and development of the Harvest Strategy (HS) for tuna fisheries in FMA 713, 714 and 715 has been underway since 2014. The 6th Technical Workshop, which was held in Bogor and online on 24-25 February 2021, updated the monitoring data sets and related analyses and reviewed the most recent developments of the Operating Models that will be used to evaluate alternative harvest strategies and select the most appropriate one for implementation. These results were presented at the 3rd Stakeholder Meeting. The following activities were updated with data inputs from 2016-2019 :

¹ <https://www.wcpfc.int/harvest-strategy>

² <https://iotc.org/cmm/resolution-1602-harvest-control-rules-skipjack-tuna-iotc-area-competence>

³ <https://www.ccsbt.org/en/content/management-procedure>

- a. Increase the number of datasets used from 8 to 11 datasets from 8 data providers (WPEA (Centre of Fisheries Research (CFR)- WCPFC), FADs (CFR - ACIAR), Log Book (*Directorate of Fish Resources Management – Director General of Capture Fisheries*), BRPL, i-fish data (MDPI, AP2HI and LINI/SFP, YKAN).
 - b. Updated the estimation of the relative abundance index of skipjack (SKJ) based on the standardization of pole and line catch and effort data. The increase in the quality and number of years of data now included in this data series has substantially improved the quality of the standardisation so that it can be included in the Operating Models for evaluating specific harvest strategies for IAW.
 - c. Improved the estimation of the selectivity by length analysis shows the relative vulnerability of specific age and length classes of skipjack and yellowfin tuna to the Indonesian fisheries, including for longline, pole and line, handline and purse seine fishing gears in FMA 713, 714 and 715.
 - d. Updated and expanded the forms of uncertainty included in the Operating Model for skipjack tuna based on the most recent WCPFC stock assessment. The models now allow for alternative assumptions about recruitment and connectivity between IAW and the wider WCPO. The improvements in the quality of the CPUE standardisation and selectivity estimation (noted above) will allow these to be included in the next iteration of developments of the operating models. This will mean the models will reflect the current Indonesian fisheries more closely than previously possible.
3. A summary of the results from the 6th Technical Workshop were presented at the 3rd Stakeholder Meeting, it was concluded that the prototype of Operating Models from 2018 for yellowfin still need updating, following the major changes in the most recent stock assessment conducted by SPC in 2020 (Vincent et al. 2020). This work, and the incorporation of the updated CPUE standardisation and selectivity estimates for skipjack, is planned for 2021. The completion of these updates and refinements will provide a set of operating models for skipjack and yellowfin tuna that can be used to explore the relative performance and implications of specific harvest strategies developed with government and stakeholders.
 4. Although data improvements are still needed to further implement the Harvest Strategy, the 3rd Stakeholder Meeting noted a number of important results from the analysis of skipjack abundance indices (pole and line fishery data), as well as yellowfin abundance indices (handline fishery data). The results for the standardised CPUE from the port monitoring for pole and line for skipjack show that the CPUE for the past ~2 years is substantially lower than the early period (2014-2015). In addition, Selectivity Analysis in general showed

catches are below the value of length at maturity for most/all gears for both species.

5. The meeting agreed that the continuation and improvement of data collection for tuna longline fishery is needed which can be fulfilled from stakeholders associated with the long line fisheries in FMA 713, 714 and 715. The meeting noted the increased coverage and number of data providers and emphasised the importance of securing on-going support for the monitoring that is central to the implementation of the HS.
6. The results from the preliminary MSE for a range of example scenarios for skipjack (Hoshino et al 2021) indicate that:
 - a. if catch and effort returned to maximum levels observed over the past 5 years that the spawning biomass of skipjack was unlikely to recover to a level above the Limit Reference Point.
 - b. if an adaptive harvest strategy, based on local abundance indices (CPUE and average size in catch), was effectively implemented then the spawning biomass of skipjack was likely to increase above the Limit Reference Point.

The performance of example harvest strategies largely depends on the levels of external fishing intensity (including the Indonesian small-scale miscellaneous gear fisheries, and non-Indonesian fisheries), hence the management of the large-scale industrial fisheries cannot be effective in isolation from the other sectors of the tuna fishery.

7. The meeting acknowledged the work of HS Team for data set preparation and exploration, CPUE standardization and selectivity analysis which need to be maintained, some notes were agreed by the meeting:
 - a. Continued CPUE standardization for SKJ-PL and YFT-HL, as well as continue the update of selectivity analysis for all relevant gears.
 - b. LL data are currently mainly from landing data FMAs 716 and 717 under CFR-WCPFC (WPEA) project. It is required to have reliable LL operational data to be used for CPUE standardization of YFT. The meeting suggested to continue data collection of LL by observer, currently undertaken by SFP, for 17 months data collection and submitted to eBRPL for review by HS team and that options for the longer-term continuation of the monitoring of this component of the fleet be developed.
8. Based on the results of studies on the selectivity of fishing gear and length distribution of skipjack catches (SKJ) from pole and line fishing gear, purse seine and hand line tend to be more dominantly caught below length at 50% maturity (50cm FL, meaning 50% of the fish at 50cm are mature). For yellowfin tuna (YFT), catches from pole and line, hand line (operated on the

surface and use small fishing line sizes) and purse seine contribute to the capture of the size below the length at 50% maturity (100 cm FL). The meeting noted that 50 cm fork length (FL) maturity for skipjack is based on the outcome of skipjack stock assessment of WCPFC in 2019 (Vincent, 2019 and Ohashi, et al 2019), considering the length of maturity is also driven by the geographical area in the case of skipjack in the IAW may not have been represented in the study and may be lower than 50 cm (40 cm FL). The meeting at this stage agreed to use 40 cm FL as length at first maturity (L_m) for skipjack in the tropical region of the WCPO (Ashida, et.al, 2009). The meeting agreed on the need to examine options to limit the number, season and size of fish caught further from purse seine catches and control of the purse seine operating area, and that this could be explored using the operating models with input on practical measures from government, industry and other stakeholders.

9. Based on the results of the 2020 tuna stock assessment for Yellowfin Tuna in the region conducted by the WCPFC, Indonesia is included in the Stock Assessment Region 7 (covering the utilization by the Philippines, Vietnam, Papua New Guinea and Indonesia). The results of the latest study conducted in 2020 throughout the WCPFC region (9 Regions) illustrate the rate of utilization rate which tends to decrease, where the average spawning biomass ratio at this time to unfished spawning biomass is in the position of 0.58 (80 percentile range: 0.51-0.64). Depletion is notably greater in the tropical regions (including Region 7), influenced by the stronger declining signals in the regional standardized CPUE series. All regional terminal depletion remained above *20% of unfished level* (Vincent et al., 2020).
10. Meanwhile, the results of the stock assessment conducted by the WCPFC on Skipjack Tuna (SKJ) in 2019, recommend the addition of regions in the distribution of the Stock Assessment Region from previously 5 regions to 8 regions. Indonesia, which was originally in Region 4, is now in Region 5. The results of the most recent stock assessment for skipjack (Vincent et al., 2019) shows that the median Spawning Biomass ratio to Unfished Spawning Biomass for the whole WCPO is 0.44 (80 percentile range 0.36-0.52, average between 2015 and 2018). However, in region 5, the estimated level of depletion for skipjack in the last year of the assessment (2018) is 0.14 (80 percentile range of 0.11 and 0.17). This is below the agreed limit reference point (0.20) for the Interim Harvest Strategy.
11. The 3rd Stakeholder Meeting agreed on 5 (five) management measures agreed at the 6th Strategy Harvest Preparation Meeting in 2017 to be implemented in the framework of implementation the Harvest Strategy, needs

to be preceded by a comprehensive workshop to investigate the progress that has been made with regard to the implementation of the 5 Management Measures as follows: (1) limit on the use of Fish Aggregating Devices, (2) spatial closures (of important spawning or nursery grounds) and temporal closures (during important events such as spawning), (3) number of fishing days (per gear, for semi industrial and industrial vessels), (4) number of vessels – limited entry (per gear; for semi industrial and industrial vessel through licensing, permits, taxing, royalties), and (5) Total Allowable Catch (TAC) limits per Fishery Management Area

12. The meeting also looked at strategic efforts in the implementation of the Harvest Strategy, it was necessary to pay attention to the aspects of protection and welfare of small fishers (≤ 5 GT), given the significant contribution of this small-scale fishery. For example, through the revision the regulation on FAD, there is a provision to regulate the deployment of FAD by small fishers for all gears associated with FAD.

B. RECOMMENDATION

1. Recommend all data providers to improve the discipline of data collection which is the main input for the implementation of HS, including:
 - a. Ensure data collected by all Non-Governmental Organizations has the same uniformity and meets minimum data requirements by the Harvest Strategy team that are appropriate and can be integrated with e-BRPL;
 - b. Submission of data on the basis of the e-BRPL (port sampling) form, observer and fishing logbook, at the latest 4 March each year via email sdi.djpt@yahoo.com and harvesttuna@gmail.com. Data preparation workshops are recommended to be held consistently every 6 (six) months;
 - c. Preparation and initiation of socio-economic data form standards and collection of socio-economic data;
 - d. Complete inputting of regional vessel data in SIMKADA and registration of vessels that catch tuna in Indonesian waters (DIVA-TUNA) to improve accountability in the management of tuna, skipjack and tuna fishing. It is recommended for central government to give assistance to province government regarding the implementation of SIMKADA and further for NGOs and association to coordinate with local government in integrating their members' vessels into SIMKADA (FMA 713, 714, and 715).
2. Recommends that 5 (five) management measures can continue to be considered for implementation taking into account the characteristics of fisheries and the needs of stakeholders in each region, with further recommendations as follows:
 - 2.1. Limit on the use of Fish Aggregating Devices, recommends that the Government immediately review the provisions on the placement and

use and FADs for fishing business, with the main points of regulation, including:

- a. Licensing and supervision authority of the Government and regional government,
- b. Potential area for the deployment of FADs,
- c. Specifications and conditions for FAD deployment, and
- d. Ownership and utilization, including regulating the use of FADs by fishers.

2.2 Spatial closures (of important spawning or nursery grounds) and temporal closures (during important events such as spawning).

- a. The Ministerial Regulation No.04/PERMEN-KP/2015 concerning The Prohibition of Fishing in the Territory of the Republic of Indonesia 714 Fisheries Management Area had been reviewed and amended by Ministerial Regulation No 26/PERMEN-KP/2020 Concerning on Prohibition for fishing Yellowfin Tuna in Spawning and Nursery ground in IFMA 714 on October to December. The regulation excludes small fishers from the prohibition as stipulated by the Ministerial Regulation.
- b. Thought of expanding the area of closure can be done after there is a comprehensive study and adjusted to the provisions that have been applied so as not to cause problems for small-scale fisheries, especially small fishers.

2.3 Number of fishing days (per gear, for semi industrial and industrial vessels) requires further comprehensive review before being determined. The meeting recommend to investigate on how to implement this measure.

2.4 Number of vessels – limited entry (per gear; for semi industrial and industrial vessel through licensing, permits, taxing, royalties), recommends proposing to the Government:

- a. Regarding the limitation on the number of vessel permit by the central government operating in FMA 713, 714 and 715 by 2020, to continue on the recommendation of no additional permit for the vessels greater than 30 GT and the existing vessels with size >100 GT that are still operating in the archipelagic waters are recommended to operate in Indonesia EEZ or high seas. It is further recommend that this agreement should be formalized in a provision or regulation issued by the Government.

- b. To implement the measure on controlling the number of fishing permits from local governments that catch tuna in FMA 713, 714 & 715, Taking into account the 2017, stock assesment of WCPFC for yellowfin tuna (YFT) which is slightly close (0.27 SSB) to the Limit Reference Point (0.2 SSB) and below LRP for skipjack tuna (0.14 SSB) based on stock assesment in 2019.
- c. To continue improving the data collection for small-scale fishing vessels.
- d. The compliance of logbook submission should be considered as important measure on the renewal of fishing license

2.5 Total Allowable Catch (TAC) limits per Fishery Management Area, recommends to the Government:

- a. Continuously conducting studies to improve the estimates of total catch in order to allow scientists to determine the Total Allowable Catch, including baseline efforts and baseline catches;
 - b. A limitation on catch is needed to be done, especially in areas where the catch has a low quality, so that the value and quality of the catch can be improved.
 - c. It is necessary to immediately develop a "National Strategy for Improving the Catch Quality from Small Fishers" so that the value-added can be obtained and enhanced.
3. Recommends that a comprehensive socio-economic study be conducted so that the results can be used, among others in refining the design and the selection criteria for candidate harvest strategies. In addition the results will be useful for recommending further studies for market preference (Market Study).
4. Recommend to continue the agreement and recommendation of the 2nd Stakeholder Meeting in 2019 which is still possible, such as the development of communication material appropriate for different stakeholder forum relevant to the regions in FMA 713, 714 and 715.
5. Recommend to develop the detailed plan of action to take forward all the agreed recommendations by the stakeholders workshop of the implementation of harvest strategy of tropical tuna in the IAW in a specific meeting.

Bogor, March 3rd, 2021

Signed

Participants of 3rd Stakeholder Meeting