



PARTIES TO THE PALAU ARRANGEMENT VDS TECHNICAL & SCIENTIFIC COMMITTEE

9th MEETING: SESSION 1

18 May 2020

Zoom Virtual Meeting

VDS-T&SC9/WP.6a: Purse Seine VDS TAE for 2021-23

TAE Setting

1. Article 12.2 of the VDS Scheme text sets out the issues to be taken into account in setting the TAE as follows:
 - i) The best available scientific, economic, management and other relevant advice and information;
 - ii) The provisions of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean;
 - iii) The objectives of the Management Scheme; and
 - iv) Any submission on this issue from any party, individual or organisation.

Current Status

2. At PA24:
 - a) 44,033 days was adopted as the PNA TAE for 2020, and as the provisional PNA TAE for 2021 and 2022
 - b) 45,033 days was adopted as the VDS TAE (including PNA and Tokelau) for 2020 and as the provisional VDS TAE for 2021 and 2022 as follows:

Table 1: TAE for 2020; Provisional TAE for 2021-2022 Adopted at PA24

Determining the TAE (days)			
	TAE 2019	TAE 2020	Provisional TAE for 2021 & 2022
Estimated 2010 Logsheet effort	44,033	44,033	44,033
Length Adjustment factor	0.00%	0.00%	0.00%
PNA TAE	44,033	44,033	44,033
Tokelau TAE	1,000	1,000	1,000
Total VDS TAE (PNA + Tokelau)	45,033	45,033	45,033

Scientific Information and Advice

3. As shown below, WCPO purse seine catches of bigeye, skipjack and yellowfin tuna are provisionally estimated¹ to have increased in 2018 by 4% to around 1.9m tonnes. Annual purse seine catches in PNA waters have fluctuated since 2010 at around 1.5 million tonnes. Annual purse seine catches in other areas of the WCPO outside PNA waters roughly doubled from 2011 to 2013 and have been around 400-450,000 tonnes since then. The increase outside PNA waters has come largely from Indonesian waters and from increased fishing by PNA flagged vessels in the high seas. 2019 logsheet catch data is not yet available but e-log data indicates an increase of around 9% in catches in PNA waters in 2019.

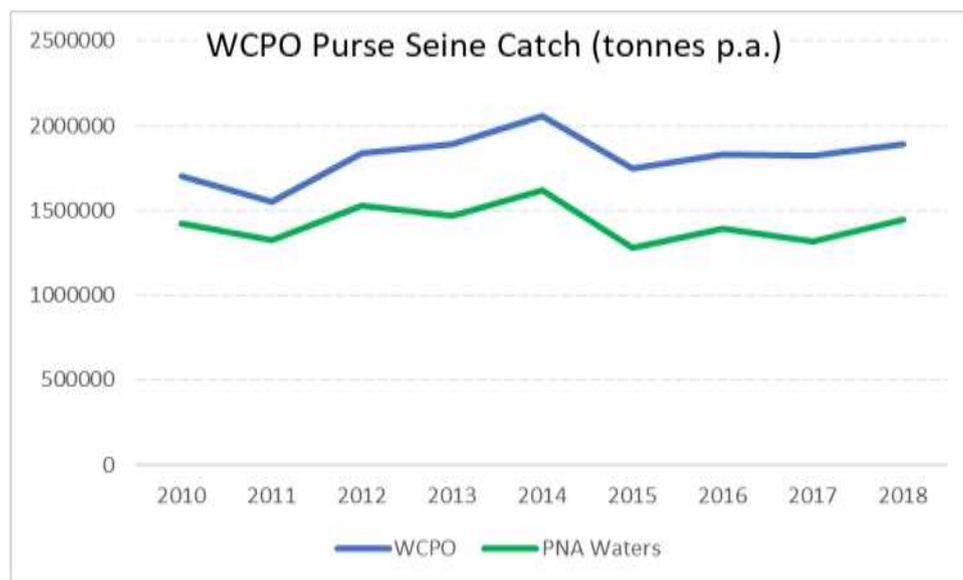


Figure 1: WCPO Purse Seine Catch (tonnes p.a.)
Source: SPC logsheet data,

4. Overall, the patterns of purse seine catches in PNA waters and the WCPO more generally have been remarkably stable in recent years, largely due to the effectiveness of PNA Members in applying the VDS despite major oceanographic changes.
5. The WCPFC Scientific Committee has provided the following advice:
- a) on the status of the **skipjack** stock, based on the 2019 skipjack stock assessment:
- SC15 noted that the skipjack assessment continues to show that the stock is currently moderately exploited and the level of fishing mortality is sustainable. The 2019 stock assessment includes additional data and a range of model improvements such as a change to the maturity schedule used in this assessment, with length-at-maturity now larger than in the previous assessment, which has resulted in a reduction in the estimate of potential spawning biomass, relative to the 2016 assessment. SC15 noted that the stock was assessed to be above the adopted Limit Reference Point and fished at rates below FMSY with 100% probability. Therefore, the skipjack stock is not overfished, nor subject to overfishing. At the same time, it was also noted that fishing mortality is continuously increasing for both adult and juvenile while the spawning biomass reached the historical lowest level.*

¹ Data provided by SPC in May 2019

The skipjack interim Target Reference Point (TRP) is 50% of spawning biomass in the absence of fishing. The trajectory of the median spawning biomass depletion indicates a long-term trend, and has been under the interim TRP since 2009 (i.e., for 10 years). Since the median spawning biomass has been consistently below the interim TRP, SC15 recommends that the Commission take appropriate management action to ensure that the biomass depletion level fluctuates around the TRP (e.g., through the adoption of a harvest control rule).

PNA Members have noted that this result was completely due to changes in the model rather than changes in the stock and have proposed that the TRP needed to be reformulated so that it is not affected by model changes, taking into account that “42% is the new 50%”

- b) on the status of the **yellowfin stock**, SC13 advised as follows on the basis of the latest assessment of the yellowfin stock in 2016;
- i) *it appears that the stock is not experiencing overfishing (96% probability) and it appears that the stock is not in an overfished condition (92% probability)..” and*
 - ii) *SC13 also reiterates its previous advice from SC10 that measures should be implemented to maintain current spawning biomass levels until the Commission can agree on an appropriate target reference point (TRP).*

More recently, SC15 noted that under recent fishery conditions, the yellowfin stock is initially projected to increase as recent estimated recruitments support adult stock biomass. Adult stock biomass is then projected to decline slightly before again increasing. Projected fishing mortality is below FMSY and projected median spawning biomass is above the LRP.

A new yellowfin stock assessment is being undertaken in 2020.

6. As described below, the 2010 base level of 44,033 days for the WCPFC PNA EEZ effort limit has been maintained in CMM 2018-01 in response to the scientific advice above. Overall, while the skipjack and yellowfin stocks are healthy, there is no room to increase purse seine fishing effort if the skipjack TRP is to be met, nor if the yellowfin spawning biomass is to be maintained at the recent level.

Economic Information and Advice

Market for Tuna for Canning

7. Annual average skipjack prices fell by around 20% in 2019 from 2018 as shown in figure 2 below taken from the PA25 Working Paper on Purse Seine Economics. This was lower than projected. The 2019 prices were at a historically low level after 5 years of relatively stable prices, creating difficult economic conditions for a large part of the purse seine fleet operating in PNA waters. Yellowfin prices remained at the levels of recent years. In early 2020 (pre-COVID-19), the skipjack price is reported to have returned to long term average levels, although it has fallen back a bit in April.

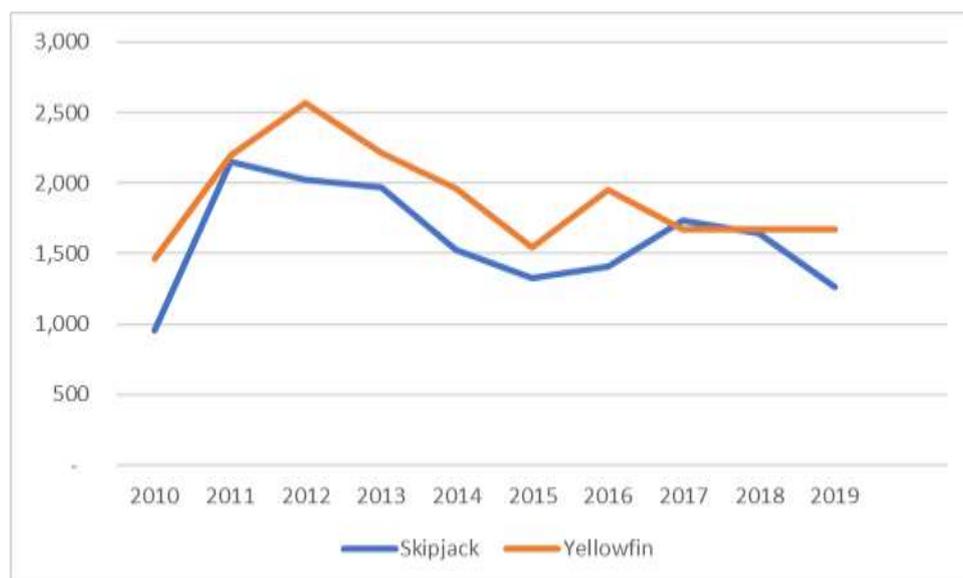


Figure 2: Bangkok tuna price trends, (C&F), 2010-2019 (US\$/mt)

8. It seems the main cause of the low prices in 2020 was relatively good fishing conditions globally, including in the WCPO. WCPO catches in early 2020 are significantly lower than in 2019 with a slightly higher effort level.
9. The COVID-19 pandemic adds a major element of uncertainty to market conditions in the short to medium term future. But it also emphasises the importance of tuna supplies from this region as an important contribution to global food security.
10. With current prices having returned to the long term average trend level, and projected to cycle upwards by FFA, there is no indication of any systematic over-supply of material for tuna canning. In addition, there are likely to be reductions in canning material supply from other oceans as IATTC, ICCAT and IOTC take additional measures to reduce effort on overfished bigeye and yellowfin stocks in those regions. In this circumstance, and taking into account the relatively weak effect of changes in WCPO catches on global tuna prices, there is no reason to consider reducing the TAE below the upper limit agreed at the WCPFC in order to tighten tuna supply and promote an increase in tuna prices which can be extracted as increased vessel day prices.

Market for Days

11. In recent years, the demand for days and the price of days generally flattened after strong earlier growth as the price of days moved towards an equilibrium level. As shown in Table 2 below, the number of days used reported in FIMS for the last 6 years has been below previous levels and significantly below the TAE, although most of the unused days were sold. There was a further decline in 2019, which seems largely attributable to poor fishing conditions due to bad weather in February/March 2019. It is now clear that since 2015, it has been the price of days, rather than the TAE and PAEs that are actually limiting effort. The limiting effect on effort from higher prices since 2015 was compounded by the opening of the eastern high seas from 2015.

Table 2: TAE Usage: 2013 - 2019

	2013	2014	2015	2016	2017	2018	2019
No. of Days Used	43,178	42,650	35,716	38,744	40,990	39,026	36,947
TAE	46,284	45,610	45,610	45,881	45,590	45,005	45,033
% Utilisation of TAE	93.3%	93.5%	78.3%	84.4%	89.9%	86.7%	82.0%

12. The outlook for the demand for days for 2021 at this stage is dominated by the uncertainty associated with the impact of the coronavirus pandemic. Demand for canned tuna is strong but there are risks to the continuing operation of important elements of the supply chain that could constrain fleet operations through 2020 and unsettle the capacity of some elements of the fleet to buy days for 2021.
13. From this analysis, there is no reason to consider reducing the TAE at this point below the upper limit agreed at the WCPFC to take into account the market for days. If Parties are concerned to increase demand for days, they have the option available of limiting or ending access to the eastern high seas by vessels while licensed by PNA, which should increase demand for days by around 3-4,000 days, which is about \$40 million foregone revenue for parties, based on the increase in effort in the eastern high seas since the PNA ban on fishing in that area was dropped. At some point, Parties could also consider banning fishing outside PNA waters on trips involving fishing in PNA waters.

WCPFC Considerations

14. In WCPFC Tropical Tuna CMMs since 2011, PNA Members have agreed to limit purse seine effort in PNA EEZs to 2010 levels through the PNA Vessel Days Scheme. In response, the PNA TAEs adopted since 2012 and the provisional PNA TAE for 2019 and 2020 have been based on the 2010 effort level in PNA EEZs. In the current CMM 2018-01, this limit has been specified as 44,033 days.
15. Parties have previously noted that SPC has revised the estimate of the 2010 effort level in PNA EEZs to 44,150 days², but for now Parties are obligated to limit effort to the 44,033 days specified in CMM 2018-01.
16. At some point in the future, the purse seine effort limits can be expected to be linked to the outcome of harvest strategies. However, there has been a setback to progress in the development of a harvest strategy for skipjack. As a result of changes in the assessment model, the agreed interim TRP of 50% of the unfished spawning biomass is no longer appropriate, but at WCPFC16, there was no agreement on a revised skipjack TRP. This outcome, along with increased complexity in the approach to developing Harvest Strategies for major WCPO stocks, including skipjack, has resulted in the target dates in the Harvest Strategy Workplan being pushed back.

MSC Considerations

17. With respect to decision-making on the PNA skipjack fishery and the VDS in particular, current PNA commitments for MSC certification include:
 - i) Establishment of a short term objective: at PA17, the Parties adopted the short term objective of limiting purse seine effort in PNA EEZs at the 2010 level.
 - ii) Clearly establishing the link between the VDS TAEs and WCPFC requirements and the scientific advice and documenting decisions on the PNA Office website, such as on the TAE.
18. Starting in 2012, this paper was modified from previous years to reflect these requirements. This includes clearly recording the link between the TAE and the relevant WCPFC measure and the scientific advice.

² See WCPFC16-2019- IP05-Rev1, Table 1

Effort creep

19. The VDS Scheme text at Article 2.4 ii) requires the Administrator to provide information on any observed or potential increase in average effective fishing effort for each fishing day since the introduction of the Management Scheme. Successive Administrator's reports have reported on trends in vessel size classes and catch rates per day.
20. The PNAO and SPC report to Parties annually on effort creep. At VDS T&SC8, participants:
 - a) *Noted the recent increasing trends in effort indicators, albeit at apparently very low levels;*
 - b) *Noted the further planned work that may inform these studies in the coming years; and*
 - c) *Agreed that the focus on dealing with effort creep should shift to identifying harvest control rules that take into account the effect of effort creep.'*

An updated analysis of effort creep will be presented to VDS T&SC9.

Management Information and advice

21. The starting point for the determination of the TAE is the estimated logsheet effort in PNA EEZs for 2010 to reflect the PNA obligation under the tropical tuna CMM referred to above. The estimated effort level for 2010 continues to be revised by SPC, largely reflecting the failure of fishing states to provide accurate and timely operational data. In order to maintain the effectiveness of the VDS, Parties agreed at PA20 to adopt the 2010 level of effort in PNA EEZs advised to WCPFC10 in 2013 by SPC³ of 44,033 days as the appropriate limit to be used in future. This limit has now been explicitly included in Table 1 of Attachment I of CMM 2018-01, along with a limit of 1,000 days for Tokelau.
22. Previously, the VDS TAE also took into account the projected effect on effort levels resulting from the length adjustments to fishing days for different to avoid any risk of the WCPFC limit in logsheet days being overshot. This adjustment has declined from 3.34% initially to 0.00% for 2018 as a result of the decline in the proportion of days fished by larger vessels. In 2018, there was again no significant difference between the VDS effort with and without length adjustments. In response, it was agreed to keep the vessel length adjustment at 0.00% in future unless there is a significant risk of the WCPFC limit being overshot because of the effect of the length adjustment factors. For the analysis this year, the vessel length adjustment has been removed from the TAE table.

Current Status of the TAE

23. At PA22, Parties decided to confirm, at their Annual Meetings, the TAE for the next year (in this case 2020) and adopt a provisional TAE for the following two years (in this case 2021 and 2022).
24. Tokelau has its own TAE of 1,000 days which it brings to the VDS and which is transferable with PNA members. The Tokelau limit of 1,000 days is also set in CMM 2018-01. The Tokelau TAE is included in the VDS TAE but is not included in the PNA TAE.
25. Taking into account the considerations set out above, it is proposed that:
 - a) the provisional 2021 PNA TAE set last year of 44,033 days be confirmed as the 2021 PNA TAE
 - b) the provisional PNA TAE for 2022 and 2023 be set at 44,033 days
 - c) the 2021 VDS TAE be set at 45,033 days; and
 - d) the provisional VDS TAE for 2021 and 2022 be set at 45,033 days

³ from WCPFC10: Table 1 of Paper "WCPFC10-2013-12- Data Summaries in Support of Discussions on the CMM on Tropical Tunas"

as set out in the Table below.

Table 2: Proposed TAE for 2021 and Proposed Provisional TAE for 2022 and 2023

Determining the TAE (days)					
	TAE 2019	TAE 2020	Provisional TAE for 2021	Proposed TAE for 2021	Proposed Provisional TAE for 2022 and 2023
Estimated 2010 Logsheet effort	44,033	44,033	44,033	44,033	44,033
PNA TAE	44,033	44,033	44,033	44,033	44,033
Tokelau TAE	1,000	1,000	1,000	1,000	1,000
Total VDS TAE (PNA + Tokelau)	45,033	45,033	45,033	45,033	45,033

Conclusions and Recommendations

26. On the basis of the considerations above, there is no reason for the Parties to change their decision at PA17 to apply a PNA TAE based on the 2010 effort level, now specified as 44,033 days in CMM 2018-01, subject to consideration of the updated analysis on effort creep referred to in the discussion above.
27. It is recommended that the 2021 PNA TAE, the provisional PNA TAE for 2022 and 2023, the 2021 VDS TAE and the provisional VDS TAE for 2022 and 2023 be adopted as set out in the table above.