



**COMMISSION
EIGHTEENTH REGULAR SESSION**

Electronic Meeting
1 - 7 December 2021

**INDICATIVE WORK PLAN FOR THE ADOPTION OF HARVEST STRATEGIES
UNDER CMM 2014-06**

- The first Harvest Strategy Workplan was developed in 2015 in accordance with CMM2014-06. It set out a deliberately ambitious schedule of technical work and Commission decision making for the development of harvest strategies across the four key tuna stocks. The workplan was always intended to be a living document and has been updated annually to reflect actual progress as well as other needs and developments.
- It is acknowledged that delays in the execution of the workplan may occur, noting the complexity of developing harvest strategies for multiple species within the multilateral WCPFC environment as well as the capacity of member CCMs to understand and participate fully in the process. For this reason, all parties are cautioned against an expectation that harvest strategy elements will be completed in specific years. Completion dates have changed in the past and may change in the future.
- This workplan simply schedules decisions noting that it is the Commission's decision as to their interim nature. It is important to understand the implications of single species management procedures within a multi-species fishery context upon application of any of the management procedures.
- There is a very important need for capacity building to allow CCMs to understand and participate fully in the harvest strategy development process and ultimately to have confidence that an adopted harvest strategy is an agreeable balance of their objectives. This is particularly so as the Commission starts to consider the multispecies nature of the fishery and how management procedures will interact.
- For clarity and consistency, the term "Management Procedure" is used from 2020 onward in this workplan in place of the term "Harvest Control Rule (HCR)". A Management Procedure is a key part of a Harvest Strategy comprising a more formal specification of data collection, the associated estimation model (e.g. the estimation of stock status through an analytical or empirical method) together with a Harvest Control Rule. Together these clearly define what management actions are to be made in response to changes in the stock or fishery condition.

2021 Update

- The technical progress of the Scientific Services Provider included the refinement of the MSE framework for skipjack and South Pacific albacore and ongoing testing of management procedures for both, and the development of the mixed fishery harvest strategy framework for WCPO tuna stocks. Harvest strategy capacity building workshops were also conducted, and additional online capacity building material has been developed to try to limit the impacts of the ongoing COVID 19 pandemic.
- As in 2020, the online nature of the SC17 meeting limited the discussion of harvest strategy issues.
- The indicative plan has been extended for an additional two years to 2024.
- South Pacific Albacore and Skipjack management procedures are remain scheduled for adoption in 2022 (no change) and management procedures for yellowfin and bigeye are now scheduled for adoption in 2024 (new).
- For all species, a new task has been assigned for the SC to formally agree the operating models to be used for management strategy evaluation.
- For all species, some additional and clearer tasking has been assigned for the SC and Commission to develop and implement the monitoring strategy.

Note: Within the tables below, progress in earlier years is in grey. Bold items are the six elements that are referred to in CMM 2014-06 (Objectives, Reference Points, Acceptable Levels of Risk, Monitoring, Harvest Control Rules/Management Procedure and MSE). Items in brackets are related to harvest strategy development and so are part of the plan but are not one of these six elements.

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2015	SC provided advice on implications of a range of Target Reference Points for South Pacific albacore.	Commission agreed an interim Target Reference Point (b).	Commission tasked SC to determine a biologically reasonable timeframe for rebuilding bigeye tuna to [or above] its limit reference point.	
	Commission agreed to workplan for the adoption of harvest strategies under CMM 2014-06 [WCPFC12 Summary Report, Attachment Y]			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2016	<p>Commission considered management objectives for the fishery or stock (a).</p> <p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> • SC provided advice on a monitoring strategy to assess performance against reference points. • SC provided advice on a range of performance indicators to evaluate performance of harvest control rules. • Commission tasked SPC/SC to develop interim performance indicators to evaluate harvest control rules. • <i>[Commission agree to a monitoring strategy to assess performance against reference points.]</i> 	<p>Commission considered management objectives for the fishery or stock (a).</p> <p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> • SC provided advice on a monitoring strategy to assess performance against reference points. • SC provide advice on a range of performance indicators to evaluate performance of harvest control rules. • Commission agreed interim performance indicators to evaluate harvest control rules. [see WCPFC13 Summary Report Attachment M] • <i>[Commission agree to a monitoring strategy to assess performance against reference points.]</i> 	<p>Commission considered management objectives for the fishery or stock (a).</p> <p>Commission agreed timeframes to rebuild stock to limit reference point. [see page 8 of HSW]</p>	<p>Commission considered management objectives for the fishery or stock (a).</p>
	Commission agreed on interim maximum acceptable risk level for breaching the LRP (c). [see page 8 of HSW]			
	Commission agreed to a refined workplan for the adoption of harvest strategies under CMM 2014-06 [WCPFC13 Summary Report Attachment N]			
	<p>Progress Summary: Recognised the need for some harvest strategy elements to be adopted as ‘interim’ noting that they be reconsidered as the harvest strategy process develops. Considered management objectives for the fisheries or stocks and made progress on identifying performance measures for tropical purse seine fisheries. For South Pacific albacore acknowledged the benefit of SPC adapting the same list of indicators to further similar work for south Pacific albacore. Commenced some early discussions on the relationship between harvest strategies for the different species and multispecies issues.</p>			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2017	<p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> • SC provided advice on a range of performance indicators for the Southern Longline Fishery to evaluate performance of harvest control rules. • Commission noted performance indicators for the Southern Longline Fishery to evaluate harvest control rules. 	<p>Develop harvest control rules (e) and Management strategy evaluation (f).</p> <ul style="list-style-type: none"> • SC provide advice on candidate harvest control rules based on agreed reference points (ongoing). • Commission consider advice on progress towards harvest control rules (ongoing). 	<p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> • SC provide advice on a range of performance indicators for the Tropical Longline Fishery to evaluate performance of harvest control rules. • Commission noted performance indicators for the Tropical Longline Fishery to evaluate harvest control rules <p>[SC report on BET status following updated assessment.]</p> <p>[SC and SPC provide advice to the Commission on the likely outcomes of revised tropical tuna measure.]</p>	<p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> • SC provide advice on a range of performance indicators for the Tropical Longline Fishery to evaluate performance of harvest control rules. • Commission noted performance indicators for the Tropical Longline Fishery to evaluate harvest control rules
Consider management objectives for stocks and fisheries (a).				
<p>Progress Summary:</p> <ul style="list-style-type: none"> • Noted candidate performance indicators for the Southern Longline Fishery and the Tropical Longline fishery to evaluate harvest control rules. • Agreed on actions to prioritise the development and adoption of a Target Reference Point for south Pacific albacore at WCPFC15. • Recognized the importance of developing harvest strategies for key stocks in the WCPO. The Commission recognized that this work requires the consideration of fisheries managers and scientists at different stages. The Commission notes that the time required for harvest strategy discussions is substantial but will also vary from year to year and the Commission recognized the need for this to be accommodated. • Agreed to reprioritise as needed the annual agenda of the Commission and Scientific Committee to allow sufficient additional time for consideration of harvest strategy issues. In addition WCPFC recognised that there may also be a need for a dedicated science/management dialogue. 				

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2018	<p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> Commission agree a TRP for south Pacific albacore. <p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> SC provide advice on performance of candidate harvest control rules. (ongoing). TCC consider the implications of candidate harvest control rules. (ongoing). Commission consider advice on progress towards harvest control rules. (ongoing). <p>[SC updated advice on SP albacore status.]</p>	<p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> SC provide advice on performance of candidate harvest control rules. (ongoing). TCC consider the implications of candidate harvest control rules. (ongoing). Commission consider advice on progress towards harvest control rules. (ongoing). 	<p>[SC updated advice on BET status.]</p> <p>[SC and SPC provide advice to the Commission on the likely outcomes of revised tropical tuna measure.]</p> <p>[SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]</p>	<p>[SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]</p>
	Consider management objectives for stocks and fisheries (a).			
	<p>Progress Summary:</p> <ul style="list-style-type: none"> An interim target reference point (TRP) for south Pacific albacore (0.56 SBF=0) was agreed. The Commission agreed to hold a 6-day annual meeting in 2019 with additional time devoted for the Commission to discuss harvest strategies. 			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2019	<p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provided advice on performance of candidate harvest control rules. (ongoing). • TCC considered the implications of candidate harvest control rules. (ongoing). • Commission considered advice on progress towards harvest control rules. (ongoing). <p>[Science Service Provider identified a range of alternative catch pathways to the interim TRP and timeframes that achieve this]</p>	<p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provided advice on performance of candidate harvest control rules. (ongoing). • TCC considered the implications of candidate harvest control rules. (ongoing). • Commission considered advice on progress towards harvest control rules. (ongoing). <p>[“TRP shall be reviewed by the Commission no later than 2019” – CMM 2015-06]</p> <p>[Updated stock assessment considered by SC15]</p> <p>[SC advised on required analyses to support TRP review]</p>	<p>Target Reference Point (b).</p> <ul style="list-style-type: none"> • SC provided advice on potential Target Reference Points for bigeye. • Commission considered potential Target Reference Points for bigeye. 	<p>Target Reference Point (b).</p> <ul style="list-style-type: none"> • SC provided advice on potential Target Reference Points for yellowfin. • Commission considered potential Target Reference Points for yellowfin.
	Consider management objectives for stocks and fisheries (a).			
	<p>Progress Summary: A range of harvest strategy related research was presented and discussed by WCPFC16. Research and technical documents in areas requested for 2019 are available on the SC15 and WCPFC16 websites. The harvest strategy workplan was subject to a substantial review and update at WCPFC16 to reflect decisions taken (or deferred) at WCPFC16. A schedule of research and technical work was identified to support the consideration of TRPs for skipjack (a revision), bigeye and yellowfin. Science Service Provider to review potential options to capture multi species issues under the HS process.</p>			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2020	<p>Develop management procedures (e) and Management strategy evaluation (f)</p>	<p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • <p>[Scientific Committee provide, and Commission consider, advice on range of issues pertaining to the formulation of a revised TRP for skipjack]</p>	<p>Consider Target Reference Point (b).</p> <ul style="list-style-type: none"> • Scientific Committee provide advice on range of issues pertaining to the formulation of a TRP for bigeye. • Commission consider SC advice on range of issues pertaining to the formulation of a TRP for bigeye. <p>[Initiate development of multispecies framework in advance of further harvest strategy development]</p> <p>[Updated stock assessment considered by SC16]</p>	<p>Consider Target Reference Point (b).</p> <ul style="list-style-type: none"> • Scientific Committee provide advice on range of issues pertaining to the formulation of a TRP for yellowfin. • Commission consider SC advice on range of issues pertaining to the formulation of a TRP for yellowfin. <p>[Initiate development of multispecies framework in advance of further harvest strategy development]</p> <p>[Updated stock assessment considered by SC16]</p>
	Consider management objectives for stocks and fisheries (a).			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2021	<p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provide advice on performance of candidate management procedures. • TCC consider the implications of candidate management procedures. • Commission consider and refine a candidate set of management procedures. <p>[Updated stock assessment considered by SC17]</p> <p>[Potential update of TRP following assessment and in accordance with WCPFC15 adopted approach]</p>	<p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provide advice on performance of candidate management procedures. • TCC consider the implications of candidate management procedures. • Commission consider and refine a candidate set of management procedures. <p>Develop and implement relevant elements of the monitoring strategy.</p> <p>[Scientific Committee provide, and Commission consider, an update to paper WCPFC17-2020-11 to include additional candidate skipjack TRPs of 36, 38 and 40 %SB_{F=0}]</p>	<p>[Development of multispecies framework in advance of further harvest strategy development]</p> <p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> • SC provide advice on potential Target Reference Points for bigeye. <p>[Economic and other analysis to support TRP decision making]</p>	<p>[Development of multispecies framework in advance of further harvest strategy development]</p> <p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> • SC provide advice on potential Target Reference Points for yellowfin. <p>[Economic and other analysis to support TRP decision making]</p>
	Consider management objectives for stocks and fisheries (a).			
	Progress Summary: See WCPFC18-2021-23-rev1 <i>Reference Document on the Progress of the Harvest Strategy Workplan Under CMM 2014-06</i> (Secretariat)			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2022	<p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC agree the operating models for MSE. • SC provide advice on performance of candidate management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. <p>Commission review and adopt a management procedure.</p>	<p>Complete review of the Target Reference Point.</p> <p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC agree the operating models for MSE. • SC provide advice on performance of candidate management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. <p>Commission review and adopt a management procedure.</p> <p>[Updated stock assessment considered by SC18]</p>	<p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> • Commission agree a TRP for bigeye <p>[Continue development of multispecies framework]</p> <p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provide advice on potential management procedures. • <p>[YFT peer review. Relevant to BET operating models.]</p>	<p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> • Commission agree a TRP for bigeye <p>[Continue development of multispecies framework]</p> <p>Develop management procedures (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provide advice on potential management procedures. • <p>[YFT peer review. Relevant to operating models.]</p>
	Progress Summary:			

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2023	<p>Implement management procedure</p> <p>Commission reviews and adopts the monitoring strategy(d)</p> <p>[SC consider multispecies aspects of WCPO harvest strategies and implications for the monitoring strategy]</p>	<p>Implement management procedure</p> <p>Commission reviews and adopts the monitoring strategy(d)</p> <p>[SC consider multispecies aspects of WCPO harvest strategies and implications for the monitoring strategy]</p>	<p>Develop management procedures(e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC agree the operating models for MSE. • SC provide advice on performance of potential management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. • Commission consider advice on progress towards management procedures. <p>Develop and implement relevant elements of the monitoring strategy(d)</p> <p>[Updated stock assessment considered by SC19]</p>	<p>Develop management procedures(e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC agree the operating models for MSE. • SC provide advice on performance of potential management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. • Commission consider advice on progress towards management procedures. <p>Develop and implement relevant elements of the monitoring strategy(d)</p> <p>[Updated stock assessment considered by SC19]</p>

	South Pacific Albacore	Skipjack	Bigeye	Yellowfin
2024	<p>Implement management procedure</p> <p>Implement Monitoring Strategy (d)</p> <p>[SC consider multispecies aspects of WCPO harvest strategies and implications for the monitoring strategy]</p>	<p>Implement management procedure</p> <p>Implement Monitoring Strategy (d)</p> <p>[SC consider multispecies aspects of WCPO harvest strategies and implications for the monitoring strategy]</p>	<p>Develop management procedures(e) and Management strategy evaluation(f)</p> <ul style="list-style-type: none"> • SC provide advice on performance of candidate management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. • Commission consider and refine a candidate set of management procedures. <p>Commission ADOPT a management procedure.</p>	<p>Develop management procedures(e) and Management strategy evaluation(f)</p> <ul style="list-style-type: none"> • SC provide advice on performance of candidate management procedures. • SC provides advice on relevant elements of the monitoring strategy. • TCC consider the implications of candidate management procedures. • Commission consider and refine a candidate set of management procedures. <p>Commission ADOPT a management procedure.</p>