
OUTCOMES OF THE 23rd SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 06 MAY 2021

PURPOSE

To inform participants at the 4th Technical Committee on Management Procedure (TCMP04) of the recommendations arising from the 23rd Session of the Scientific Committee (SC23) held in 7th to 11th December 2020, specifically relating to the work of the TCMP.

BACKGROUND

At the 23rd Session of the SC, the SC noted and considered the recommendations made by the TCMP03 in 2019 and WPM11 in 2020 that included updates on the MSE process for various IOTC species. Based on these recommendations, the SC23 made a set of requests (see extracts from the SC23 Report below). In addition, the SC23 reviewed and endorsed a Program of Work for the WPM, as detailed in [Appendix A](#) as well as a revised Program of work for the development of MPs for key IOTC species ([Appendix B](#)).

DISCUSSION

The following extracts from the SC23 Report (IOTC–2020–SC23–R) are provided here for the consideration and action of the TCMP04:

Report of the 11th Session of the Working Party on Methods (WPM11)

(Para 89): The SC **NOTED** the progress made in Management Strategy Evaluation exercises for IOTC species in 2020. The SC **NOTED** that unfortunately the TCMP meeting in 2020 had been cancelled due to the Covid-19 pandemic and therefore no discussions on the progress had been undertaken in that forum.

(Para 90): The SC **NOTED** that the 9th workshop on MSE of IOTC WPM Scientists had also been cancelled, delaying the technical progress on MSE in 2020. The SC **NOTED** that the expert MSE workshops are very constructive and effective in discussing technical matters and the outcomes of the meetings are reflected in the MSE development. As such the SC **STRESSED** the importance of this meeting taking place in 2021.

Management Strategy Evaluation Progress

(Para 91): The SC **NOTED** that in 2020 the Commission stated that:

*The Commission **SUPPORTED** the ongoing Management Strategy Evaluation work and **NOTED** the revised workplan endorsed by the Scientific Committee in Appendix 6 of the 2019 Scientific Committee Report. The Commission particularly **NOTED** the importance of the work to specify the skipjack tuna harvest control rule as a full Management Procedure (MP) as well as the need to finalise the MP development for yellowfin tuna to provide sound management advice for this species.*

(Para 92): The SC **NOTED** that this schedule of work is once again included as Appendix 6 to this report to clarify the revised MSE schedule.

Albacore MSE

(Para 93): The SC **NOTED** that the project was initiated in 2020 to further develop the ALB MSE. Work has started on updating the simulation platform to the new model structure including a proposal for a new OM grid. The SC **NOTED** the WPM has endorsed a new set of reference OM grid to capture the range of uncertainty identified.

Skipjack tuna MSE

(Para 94): The SC **NOTED** an MSE expert has been contracted in 2020 to undertake review of the skipjack tuna harvest control rule with a view to review and potentially revise the HCR as required by Res 16/02. The work conducted so far included (1) developing an Operating Model based on Stock Synthesis III; (2) developing a simple stock assessment model that can be fitted to simulated data from the skipjack stock assessment grid, and (3)

Simulation test model-based Management Procedures. The aim of the review is to develop a full skipjack MP.

Yellowfin tuna MSE

(Para 95): *The SC **NOTED** the attempt to conduct a full assessment of the yellowfin tuna has not been achieved this year and the current yellowfin OM is based on the 2018 yellowfin assessment. The SC further **NOTED** that YFT OM development explored a range of modelling issues including retrospective pattern, high F, and revised treatment of recruitment and CPUE auto-correlation.*

Bigeye tuna MSE

(Para 96): *The SC **NOTED** that bigeye tuna OMs were updated from the 2019 stock assessment, and a Pella-Tomlinson Random Effects surplus production model that includes process and observation errors was developed as a candidate for the MP.*

Swordfish MSE

(Para 97): *The SC **NOTED** that limited progress had been made on the Swordfish MSE. The modeller working on the MSE was currently not available. As such, very little progress had been made since the 2019 SC meeting. The work is expected to resume in late 2020, early 2021.*

Stock status guide and other business

(Para 98): *The SC were made aware that:*

*The Commission **NOTED** the ongoing work of the Ad Hoc Reference Point Working Group and **REQUESTED** that the outcomes of this group are presented to the TCMP for its consideration in 2021.*

(Para 99): *The SC **NOTED** the discussions on whether, for any given species with a harvest strategy, the OM requires reconditioning when there is an updated assessment. The SC **AGREED** that there is a need for deciding on when to stop the reconditioning of the OMs with new assessments. The SC **NOTED** that although there has been some general practice in assisting the decision (e.g. the new assessment biomass estimates fall outside the range of the OM) a more generic set of criteria and guidance is required. Such guidance will help expedite the progress of the MSE process towards focusing on the testing of candidate MPs. The SC further **NOTED** the issue is also related to determining when and whether any exceptional circumstances has occurred.*

RECOMMENDATION

That the TCMP:

- 1) **NOTE** paper IOTC–2021–TCMP04–05 which outlined the main outcomes of the 23rd Session of the Scientific Committee, specifically related to the work of the TCMP.
- 2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

Appendix A: Program of Work (2021–2025) for the IOTC Working Party on Methods (WPM).

Appendix B: Schedule of Work for the Development of Management Procedures for Key Species in the IOTC Area

APPENDIX A
WORKING PARTY ON METHODS PROGRAM OF WORK (2021–2025)

Table 1. Priority topics for obtaining the information necessary to deliver the necessary advice to the Commission. Resolution 15/10 elements have been incorporated as required by the Commission.

Topic	Sub-topic and project	Timing				
		2021	2022	2023	2024	2025
1. Management Strategy Evaluation	Continuation of Management Strategy Evaluation for Albacore, Skipjack, Yellowfin, Bigeye tunas as well as Swordfish					
Future Research Requirements (not in order of priority)						
Management Strategy Evaluation	1.1 Albacore					
	1.1.1 Revision of Operating Models based on WPM and SC feedback, including possible robustness tests					
	1.1.2 Implementation of initial set of simulation runs and results					
	1.1.3 Revision of Management Procedures and Indicators after presentation of initial set to TCMP and Commission					
	1.1.4 External peer review (2022 or date TBD)					
	1.1.5 Evaluation of new set of Management Procedures (if required)					
	1.2 Skipjack tuna					

1.2.1	Revision and adaptation of framework for simulation evaluations of MPs. Moving from HCR to fully specified MP.					
1.2.2	Develop revised production model for inclusion in simulation framework					
1.2.3	Condition OM on updated assessment model from 2020.					
1.2.4	Revision of Management Procedures and Indicators after presentation of initial set to TCMP and Commission					
1.3 Bigeye tuna						
1.3.1	Update OM & present preliminary MP results to TCMP, WPTT/WPM review of new OM					
1.3.2	External peer review (2021 or date TBC)					
1.3.3	Present revised MP results to TCMP with target adoption date of 2022					
1.3.4	Additional iterations if required					
1.4 Yellowfin tuna						
1.4.1	Update OM & present preliminary MP results to TCMP, WPTT/WPM review of new OM					
1.4.2	External peer review (2020 or date TBD)					
1.4.3	Present revised MP results to TCMP with target adoption date of 2021; iteratively update development if required)					
1.4.4	additional iterations if required					
1.5 Swordfish						
1.5.1	Initial OM					
1.5.2	Conditioning and OM set up					

	1.5.3 Generic MP tests					
	1.5.4 Final Model with MPs					
	1.5.5 External peer review					
Multiple stock status derived from different model structures	3.1 Develop specific guidance for the most appropriate models to be used or how to synthesize the results when multiple stock assessment models are presented. <i>(see IOTC-2016-WPTT18-R, para.91)</i>					
Presentation of stock status advice for data limited stocks	2.1 Explore potential methods of presenting stock status advice to managers from a range of data limited scenarios, e.g. through the development of a 'Tier' approach for providing stock status advice, based on the type of indicators used to determine stock status (e.g. CPUE series, stock assessment model)					

APPENDIX B

SCHEDULE OF WORK FOR THE DEVELOPMENT OF MANAGEMENT PROCEDURES FOR KEY SPECIES IN THE IOTC AREA

Year	Albacore	Skipjack	Yellowfin	Bigeye	Swordfish
2020	<p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>	<p>WPs/SC: Apply harvest control rule (HCR) using results from 2020 stock assessment to calculate total annual catch limit. (Secretariat to advise CPCs of catch limit.)</p> <p>Extend the HCR to develop full candidate MPs and undertake MSE to provide advice on the performance of candidate MPs.</p>	<p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>	<p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>	<p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>
2021	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need for further MSE of candidate or alternative MPs.</p> <p>WPs/SC:</p>	<p>TCMP: Provide advice to the Commission on outcomes from the application of the HCR.</p> <p>Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need for further MSE of candidate or alternative MPs.</p> <p>WPs/SC:</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.</p> <p>WPs/SC:</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.</p> <p>WPs/SC:</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.</p> <p>WPs/SC:</p>

	Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.		Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.
2022	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need for further MSE of candidate or alternative MPs.</p> <p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need for further MSE of candidate or alternative MPs.</p> <p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>		<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.</p> <p>WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.</p>
2023	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission:</p>	<p>TCMP: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission:</p>		<p>TCMP: Provide advice to the Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.</p> <p>Commission:</p>	

	<p>Consider work and advice from subsidiary bodies. Decision and adoption of an MP.</p>	<p>Consider work and advice from subsidiary bodies. Decision and adoption of an MP.</p>			<p>Consider work and advice from subsidiary bodies. Decision and adoption of an MP <u>or</u> provide direction to the WPs/SC on the need for further MSE of candidate or alternative MPs. WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs,</p>
--	---	---	--	--	--