

OUTCOMES OF THE 17th SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT¹, 8 APRIL 2015

PURPOSE

To inform participants at the 6th Working Party on Methods (WPM06) of the recommendations arising from the 17th Session of the Scientific Committee (SC17) held from 8–12 December 2014, specifically relating to the work of the WPM.

BACKGROUND

At the 17th Session of the SC, the SC noted and considered the recommendations made by the WPM in 2014 that included updates on the MSE process for various IOTC species.

Based on the recommendations arising from the WPM05, the SC17 adopted a set of recommendations, provide at [Appendix A](#) of this paper.

The recommendations contained in [Appendix A](#) were provided to the Commission for consideration at its 19th Session held in April/May 2015. A separate paper, IOTC–2015–WPM06–04 addresses the responses and actions of the Commission.

In addition, the SC17 reviewed and endorsed a Program of Work for the WPM, including a revised MSE schedule, as detailed in [Appendix B](#) and [Appendix C](#) respectively. A separate paper (IOTC–2015–WPM06–07) will outline the review and development process for a *Program of Work* for the WPM for the next five years.

DISCUSSION

In addition to the recommendations outlined in [Appendix A](#), [Appendix B](#) and [Appendix C](#), the following extracts from the SC17 Report (IOTC–2014–SC17–R) are provided here for the consideration and action of the WPM06:

Tier approach for providing stock status advice

(Para. 128) The SC **CONSIDERED** the proposal from the WPB to adopt a process to determine if a ‘Tier’ approach to providing stock status advice will likely enable the IOTC working parties to better communicate the levels of uncertainty present in the indicators used for monitoring the condition/status of IOTC stocks by categorising the types of assessments conducted, for the development of management advice/actions. Initial details of how a ‘Tier’ approach may be constructed are provided in Appendix XII of the WPB12 Report. The SC **REQUESTED** that the Chair of the WPM shall liaise with interested scientists to develop a revised proposal that includes the experience of other bodies, such as ICES, for consideration at the next SC meeting.

Glossary of scientific terms, acronyms and abbreviations

(Para. 134) **RECALLING** that at its 15th Session in 2012, the SC adopted a glossary of scientific terms, acronyms and abbreviations for the most commonly used scientific terms in IOTC reports and Conservation and Management Measures (CMM), and that the glossary would remain a living document that the SC would modify incrementally in the future, the SC **AGREED** to add/modify the following terms/definitions, which would then be incorporated into the glossary and posted on the IOTC website in English and French:

- **Management objectives.** The social, economic, biological, ecosystem, and conservation goals specified for a given management unit (e.g. stock).
- **Management procedures.** A set of formal actions, usually consisting of data collection, stock assessment (or other indicators), and harvest control rules, able to iteratively and adaptively provide robust decisions to manage a fishery.

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- **Management strategy evaluation (MSE).** Procedure whereby alternative management procedures' performance are tested and compared using stochastic simulations of stock and fishery dynamics against a set of management objectives.
- **Operating model.** Model simulation of stock and fishery dynamics, including sources of uncertainty, used in management strategy evaluation.

Discussion of the Science to Management dialogue

(Para. 187) **NOTING** that Resolution 14/03 established clear objectives, terms of reference and a meeting schedule to develop the general framework to guide establishment, review and update of management objectives and strategies, the SC **REQUESTED** that roles and the responsibilities of both fisheries managers and scientists (SC), and possible interactions and feedback, are developed and clarified within this framework.

(Para. 189) **NOTING** that the time allocated to the Scientific Committee report presentations in other tuna RFMOs, such as ICCAT, is substantially longer, the SC **REQUESTED** the Chair of the Commission consider allocating more time for the presentation of the Scientific Committee report, with the aim of ensuring better explanation of the work conducted and the provision of the management advice as requested by the Commission.

RECOMMENDATION

That the WPM:

- 1) **NOTE** paper IOTC–2015–WPM06–03 which outlined the main outcomes of the 17th Session of the Scientific Committee, specifically related to the work of the WPM.
- 2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

Appendix A: Consolidated set of recommendations of the 17th Session of the Scientific Committee (8–12 December 2014) to the Commission, relevant to the Working Party on Methods.

Appendix B: Program of Work (2015–2019) for the IOTC Working Party on Methods (WPM).

Appendix C: Schedule of MSE for the WPM (2015–2019).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 17th SESSION OF THE SCIENTIFIC COMMITTEE (8–12 DECEMBER 2014) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON METHODS

Extract of the Report of the 17th Session of the Scientific Committee

(IOTC–2014–SC17–R; Appendix XLIII, PAGES 347–357)

GENERAL RECOMMENDATIONS TO THE COMMISSION

Report of the 5th Session of the Working Party on Methods (WPM05)

Limit reference points

- SC17.27 ([para. 103](#)) The SC **RECOMMENDED** the Commission consider an alternative approach to identify biomass limit reference points, such as those based on biomass depletion levels, when the MSY-based reference points are difficult to estimate. In cases where MSY-based reference points can be robustly estimated, limit reference points may be based around MSY.
- SC17.28 ([para. 104](#)) The SC **RECOMMENDED** that in cases where MSY-based reference points cannot be robustly estimated, biomass limit reference points be set at 20% of unfished levels ($B_{LIM} = 0.2B_0$).

Target reference points

- SC17.29 ([para. 105](#)) **NOTING** that the interim target reference points contained in Resolution 13/10 are also MSY-based and subject to the same difficulties with robust estimation, the SC **RECOMMENDED** that the Commission consider that stock biomass depletion levels equivalent to B_{MSY} are expected to lie in the range of 30% to 40% of unfished levels ($0.3B_0$ to $0.4B_0$), when MSY-based levels cannot be accurately estimated. The Commission may wish to consider a value of $0.4B_0$ or higher, if a precautionary buffer against reaching a biomass limit is desirable.
- SC17.30 ([para. 106](#)) **NOTING** that the approach described in [para. 105](#) is similar to what is currently taking place in other RFMOs such as WCPFC, the SC **RECOMMENDED** that the use of this type of reference point is adopted by the Commission. In considering target reference points, guidance will be required from the Commission on tolerable risks of exceeding limit reference points.

Fishing Mortality Equivalents

- SC17.31 ([para. 107](#)) The SC **RECOMMENDED** that with respect to fishing mortality (F) reference points, for consistency between the definitions of overfished and overfishing, the Commission should consider using those F values that correspond to the biomass reference points. For example, given a biomass limit of $0.2B_0$, a consistent F limit reference point would be $F_{B20\%}$, the fishing mortality rate that reduces the biomass to 20% of unfished levels.

Skipjack tuna MSE update

- SC17.32 ([para. 110](#)) The SC **NOTED** that the consultancy that has been used to develop the simulation tools and initial evaluations of some candidate Management Procedures has run to completion. Additional work is required to support the Commission's desire to implement management approaches that can achieve its objectives. In this regard, the SC **RECOMMENDED** that the Commission fully fund the work needed to support its requirement to achieve its objectives in particular facilitating the implementation of Resolution 12/01.

Summary discussion of matters common to Working Parties (capacity building activities – stock assessment course; connecting science and management, etc.)

Invited Experts

- SC17.47 ([para. 181](#)) The SC **RECOMMENDED** that at least one 'Invited Expert' be brought to each of the science Working Parties in 2015 and in each subsequent year, so as to further increase the capacity of the Working Parties to undertake the work detailed in the Program of Work ([Appendix XL](#)). The IOTC regular budget shall include travel funds (flights, DSA) for this purpose. The Invited Expert for each meeting will continue to be selected based on the process adopted by the Scientific Committee and provided at [Appendix XL](#).

Consultants

SC17.48 ([para. 183](#)) **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in 2014 and in previous years, the SC **RECOMMENDED** that engagement by consultants be continued for each coming year based on the Program of Work ([Appendix XXXVIII](#)), to supplement the skill set available within the IOTC Secretariat and CPCs. An indicative budget is provided at [Table 6](#).

TABLE 6. Estimated budget required to hire a consultant to carry out stock assessments on tuna and tuna-like species under the IOTC mandate, sharks frequently caught by IOTC fisheries, and capacity building, in 2015 and 2016.

Description	Unit price	Units required	2015 Total (US\$)	2016 Total (US\$)	Priority
WPM					
External peer review of the albacore MSE	450	10	4,500	Nil	Med
External peer review of the skipjack tuna MSE	450	10	4,500	Nil	Med

Discussion of the Science to Management dialogue

SC17.50 ([para. 190](#)) The SC **NOTED** the substantial progress being made by the Working Party on Methods to develop management strategy evaluation frameworks, and that for this work to progress there is a need for clear guidance to the SC on fishery management objectives and on tolerable risks associated with breaching the limits. In this regard, the SC **RECOMMENDED** that these issues be given a high priority for broad discussion by the CPCs during the Science and Management Dialogue Workshops under Resolution 14/03 and that the Chair of the Commission consider inclusion of their discussion in the Commission meeting.

APPENDIX B**PROGRAM OF WORK (2015–2019) FOR THE SCIENTIFIC COMMITTEE AND ITS SUBSIDIARY BODIES**

The SC **NOTED** the proposed Program of Work and priorities for each of the Working Parties and **AGREED** to a consolidated Program of Work as outlined in Appendix XXXVIII. The Chairs and Vice-Chairs of each working party shall ensure that the efforts of their working party is focused on the core areas contained within the appendix, taking into account any new research priorities identified by the Commission at its next Session. (IOTC–2014–SC17–R, Para. 177)

Working Party on Methods (WPM)

(Extracts from IOTC–2014–WPM05–R: Appendix IV)

The Program of Work consists of the following, noting that a timeline for implementation would be developed by the SC once it has agreed to the priority projects across all of its Working Parties. The aim of this Program of Work is for a first full set of simulations to be presented at SC18 in 2015.

Topic	Subtopic	Days	Allocated	Budget (US\$)	Start	End
Albacore	Refinement of OM structure and parameterisation				Feb 2015	Mar 2015
	Refinement of OM conditioning				Feb 2015	Mar 2015
	Definition and implementation of alternative MPs	120	30	72,000	Feb 2015	Apr 2015
	Complete set of simulation runs & results				Jun 2015	Sep 2015
	Internal peer review of OM & MPs	10		8,000	May 2015	
	External peer review	5		4,000	Nov 2015	
Skipjack tuna	Refinement of OM structure and parameterisation				Feb 2015	Apr 2015
	Refinement of OM conditioning	120		96,000	Feb 2015	Apr 2015
	Further development of MPs				Feb 2015	Apr 2015
	Run evaluations and produce summaries of results				Jun 2015	Sep 2015
	Internal peer review of OM & MPs	10		8,000	May 2015	
	External peer review	5		4,000	Nov 2015	
Bigeye tuna and yellowfin tuna	Initial OM	360	360		May 2015	
	Conditioning and OM set up				Dec 2015	
	Generic MP tests				May 2016	
	Final Model with MP's				Dec 2016	
Presentation	Exploration of tools for effective presentation of MSE results					
	Implementation and adaptation of those tools for IOTC needs	10		8,000	Feb 2015	Mar 2015

Note that Resolution 14/03 has certain hard deadlines and to achieve them this work needs to be completed. These are noted below.

From Resolution 14/03:

Para. 2 (Point 2): "These Science and Management Dialogue Workshops shall be held in 2015, 2016 and 2017, as needed, prior to the respective Commission Annual Sessions"

Para. 4: The effectiveness of the Science and Management Dialogue Workshops shall be reviewed no later than at the Annual Session of the Commission in 2018.

APPENDIX C

SCHEDULE OF STOCK ASSESSMENTS FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2015–2019, AND FOR OTHER WORKING PARTY PRIORITIES

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2015–19, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key shark species of interest, as outlined in [Appendix XXXIX](#). (IOTC–2014–SC17–R, Para. 180)

*Extract of the Report of the 17th Session of the Scientific Committee
(IOTC–2014–SC17–R; Appendix XXXIX, PAGE 342)*

Species	2015	2016	2017	2018	2019
Working Party on Methods					
Management Strategy Evaluation	Extension of the MSE process to tropical tunas: ALB, SKJ. Commence work on YFT and BET	Complete work on ALB, SKJ, YFT and BET	TBD	TBD	TBD