OUTCOMES OF THE 17th SESSION OF THE SCIENTIFIC COMMITTEE

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PURPOSE

To inform participants at the 17th Working Party on Tropical Tunas (WPTT17) 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 WPTT.

BACKGROUND

At the 17th Session of the SC, the SC noted and considered the recommendations made by the WPTT in 2014 that included requests to address the deficiencies in data collection, monitoring and reporting by CPCs, as well as to carry out targeted research and analysis on tropical tuna species.

Tropical tunas caught in the IOTC area of competence and under the WPTT mandate

Common name	Species	Code
Bigeye tuna	*Thunnus obesus*	BET
Skipjack tuna	*Katsuwonus pelamis*	SKJ
Yellowfin tuna	*Thunnus albacares*	YFT

The recommendations on the deficiencies in data collection, monitoring and reporting by CPCs in relation to tropical tunas will be discussed under agenda item 4 and in paper IOTC–2015–WPTT17–07 and are therefore not presented in this paper.

Based on the recommendations arising from the WPTT16, 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 May 2015. A separate paper, IOTC–2015–WPTT17–04 addresses the responses and actions of the Commission.

In addition, the SC17 reviewed and endorsed a Program of Work (2015–2019) for the WPTT, including a revised assessment schedule, as detailed in Appendix B and Appendix C. A separate paper (IOTC–2015–WPTT17–08) will outline the review and development process for a *Program of Work* for the WPTT 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 (2014) are provided here for the consideration and action of the WPTT17:

CPUE standardisations

NOTING the substantial work done in 2014 on CPUE standardisations since the workshop addressing this issue in 2013, but also that further work is required, the SC **ENDORSED** the workplan developed by Japan, Rep. of Korea and Taiwan,China for intersessional work, and for this to be carried out on the longline CPUE standardisation issues for bigeye tuna and yellowfin tuna (Appendix IX). (para. 73 of the SC16 Report)

The SC **NOTED** the workplan developed for purse seine CPUE standardisation, and though a lower priority than the workplan developed for the longline CPUE standardisation, also **ENDORSED** it if funding were available to address this issue (Appendix X). However, this would be better evaluated after the results and progress of the FAD ad-hoc working group since it is essential for a purse seine standardisation process to include information on FADs. (para. 74 of the SC16 Report)

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Executive summaries for tropical tuna species

The SC also adopted revised Executive Summaries for the three (3) tropical tuna species that can be found as appendices to the SC17 report, and which can be downloaded from the IOTC website's new **Stock Status Dashboard**, in English and French:

English: http://iotc.org/science/status-summary-species-tuna-and-tuna-species-under-iotc-mandate-well-other-species-impacted-iotc

French: http://iotc.org/fr/science/r%C3%A9sum%C3%A9-de-l%C3%A9tat-des-stocks

RECOMMENDATION

That the WPTT:

1) **NOTE** paper IOTC–2015–WPTT17–03 which outlined the main outcomes of the 17th Session of the Scientific Committee, specifically related to the work of the WPTT.
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 Tropical Tunas.
Appendix B: Program of Work (2015–2019) for the IOTC Working Party on Tropical Tunas (WPTT).
Appendix C: Assessment schedule for the WPTT 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 TROPICAL TUNAS

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

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

STATUS OF TUNA AND TUNA-LIKE RESOURCES IN THE INDIAN OCEAN

Tuna – Highly migratory species

SC17.01 (para. 145) The SC **RECOMMENDED** that the Commission note the management advice developed for each tropical and temperate tuna species as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2014 (Fig. 4):

- Albacore (*Thunnus alalunga*) – Appendix XII
- Bigeye tuna (*Thunnus obesus*) – Appendix XIII
- Skipjack tuna (*Katsuwonus pelamis*) – Appendix XIV
- Yellowfin tuna (*Thunnus albacares*) – Appendix XV

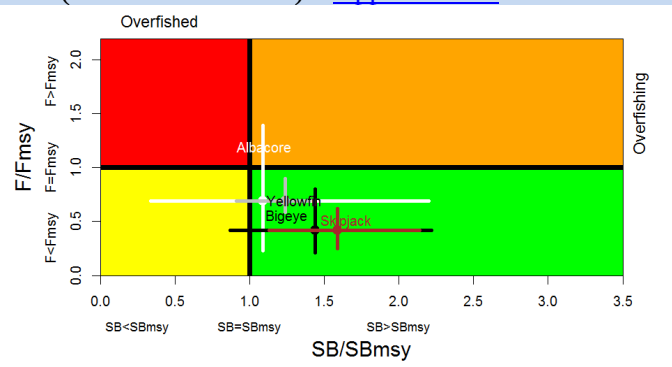

Fig. 4. Combined Kobe plot for bigeye tuna (black: 2013), skipjack tuna (brown: 2014), yellowfin tuna (grey: 2012) and albacore (white: 2014) showing the estimates of current stock size (SB) and current fishing mortality (F) in relation to the interim target spawning stock size and interim target fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Note that for skipjack tuna, the estimates are highly uncertain as FMSY is poorly estimated, and as suggested for stock status advice it is better to use B_0 as a biomass reference point and C(t) relative to CMSY as a fishing mortality reference point.

GENERAL RECOMMENDATIONS TO THE COMMISSION

Fish aggregating devices

SC17.23 (para. 71) The SC **RECOMMENDED** that an ad hoc working group on FADs, drifting and anchored, be created to assess the consequences of the increasing number and technological developments of FADs in tuna fisheries and their ecosystems, in order to inform and advise on future FAD-related management options. This ad hoc working group would be of multi-sectorial nature, involving various stakeholders such as scientists, fishery managers, fishing industry representatives, administrators and fishers. The Terms of reference for this working group are provided at Appendix VIII.

Evaluation of closed areas as management options

SC17.44 (para. 170) The SC reiterated its previous **RECOMMENDATION** with respect to bigeye tuna, skipjack tuna and yellowfin tuna stocks, that the Commission note that the previous IOTC closure is likely to be ineffective, as fishing effort will be redirected to other fishing grounds in the Indian Ocean and it considered that this recommendation also related to the wider network of closures including UK(OT) MPA. Papers IOTC–2013–SC16–INF11 and IOTC–2011–SC14–40, which examined the effect of IOTC closure and the effect of the UK(OT) MPA as well as a partial Maldives closure on the status of yellowfin tuna, concluded that if displacement of effort occurred to areas outside the closures then there would be no effect. An effect was only observed if it was assumed that all effort that would have occurred in those areas was entirely removed from the fishery. Thus any positive impacts of closed areas would likely be offset by effort reallocation.

SC17.45 (para. 172) The SC **RECOMMENDED** that the Commission specify the level of reduction or the long term management objectives to be achieved with any time area closure/s and/or alternative measures which it adopts in the future, as these will, in turn, guide and facilitate the analysis by the SC and its subsidiary bodies.

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 Paties 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 Committtee 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 frequenly caught by IOTC fisheries, and capacity building, in 2015 and 2016.

Description	Unit price	Units required	2015 Total (US$)	2016 Total (US$)	Priority
WPNT					
Neritic tuna data poor stock assessment and capacity building (fees)	450	15	6,750	6,750	Low
Neritic tuna data poor stock assessment and capacity building (travel)	5,000	1	5,000	5,000	Low
WPB					
Billfish data poor stock assessment (fees)	450	15	6,750	6,750	Med
Billfish data poor stock assessment (travel)	5,000	1	5,000	5,000	Med
WPEB					
Shark stock assessment (fees)	450	20	9,000	9,000	High
Shark stock assessment (travel)	5,000	1	5,000	5,000	High
Evaluation of the discards ban proposal	450	35	Nil	15,750	Med
WPTT					
Tropical tuna stock assessment (fees)	450	35	15,750	15,750	High
Tropical tuna stock assessment (travel)	5,000	1	5,000	5,000	High
WPTmT					
Temperate tuna stock assessment (fees)	450	35	Nil	15,750	High
Temperate tuna stock assessment (travel)	5,000	1	Nil	5,000	High
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
TOTAL			**67,250**	**94,754**	

Schedule of meetings for 2015 and 2016

SC17.49 (para. 185) The SC **RECOMMENDED** that the Commission endorse the schedule of Working Party and Scientific Committee meetings for 2015 and 2016 provided at Appendix XLI.

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 Tropical Tunas (WPTT)

WPTT: High priority topics, by project for tropical tunas in the Indian Ocean

Topic	Sub-topic and project	Priority
Stock structure (connectivity)	Research to describe the population structure and connectivity of billfish within the Indian Ocean (and adjacent Pacific and Atlantic waters as appropriate) ➢ Next Generation Sequencing (NGS) to determine tropical tuna stock structure, and migratory range. Determine the degree of shared stocks for tropical tunas in the Indian Ocean with the Pacific Ocean. ➢ Tagging movements and analysis to incorporate in stock assessments	High
Biological information (parameters for stock assessment)	Age and growth research ➢ CPCs to provide further research reports on tropical tuna biology, namely age and growth studies including using through the use of fish otoliths, either from data collected through observer programs or other research programs.	High
	Age-at-Maturity ➢ Quantitative biological studies are necessary for tropical tunas throughout their range to determine key biological parameters including age/size-at-maturity and fecundity-at-age/length relationships, which will be fed into future stock assessments.	High
Ecological information	Spawning time and locations ➢ Collect gonad samples from tropical tunas to confirm the spawning time and location of the spawning area that are presently hypothesized for each tropical tuna species	High
Historical data review	Changes in fleet dynamics need to be documented by fleet. ➢ Priority fleets: Japan and Taiwan,China LL ➢ FAD issues to be analysed for incorporation in CPUE series.	 High High
CPUE standardisation	Develop standardised CPUE series for each tropical tuna fleet/fishery for the Indian Ocean There is an urgent need to investigate the CPUE issues as detailed for bigeye tuna, skipjack tuna and yellowfin tuna in the WPTT15 report, and for these to be a high priority research activity for the tropical tuna resources in the Indian Ocean. That standardised CPUE index for juvenile yellowfin tuna and bigeye tuna caught by the EU purse seiner fleets, be estimated and submitted to the WPTT before the next round of stock assessments of tropical tunas. The standardisation of purse seine CPUE be made where possible using the operational data on the fishery. Develop and/or revise standardised CPUE series for each tropical tuna species and fishery for the Indian Ocean ➢ Bigeye tuna: High priority fleets: High (2016) ➢ Skipjack tuna: High priority fleets: High (2017) ➢ Yellowfin tuna: High priority fleets: High (2015)	High
Stock assessment /	Develop and compare multiple assessment approaches to determining stock status	High

Stock indicators	for tropical tunas	
Target and Limit reference points	To advise the Commission, by end of 2016 at the latest on Target Reference Points (TRPs) and Limit Reference Points (LRPs). ➢ Used when assessing tropical tuna stock status and when establishing the Kobe plot and Kobe matrices	High
Management measure options	To advise the Commission, by end of 2016 at the latest, on potential management measures having been examined through the Management Strategy Evaluation (MSE) process. ➢ These management measures will therefore have to ensure the achievement of the conservation and optimal utilisation of stocks as laid down in article V of the Agreement for the establishment of the IOTC and more particularly to ensure that, in as short a period as possible (i) the fishing mortality rate does not exceed the fishing mortality rate allowing the stock to deliver MSY and (ii) the spawning biomass is maintained at or above its MSY level.	High

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**
Albacore	–	**Full assessment**	–	**Full assessment**	–
Working Party on Tropical Tunas					
Bigeye tuna	Indicators	**Full assessment**	Indicators	Indicators	**Full assessment**
Skipjack tuna	Indicators	Indicators	**Full assessment**	Indicators	Indicators
Yellowfin tuna	**Full assessment**	Indicators	Indicators	**Full assessment**	Indicators

Note: the assessment schedule may be changed dependant on the annual review of fishery indicators, or SC and Commission requests.