REVISION OF THE PROGRAM OF WORK (2019–23) FOR THE IOTC SCIENCE PROCESS

PREPARED BY: IOTC SECRETARIAT, SC CHAIR AND WP CHAIRS, 21 NOVEMBER 2018

PURPOSE

To provide the Scientific Committee (SC) with a proposed Program of Work for each of its Working Parties (WP), including preliminary prioritisation of the elements requested by each WP. The aim is to develop an overall Program of Work Plan for 2019–23 which will deliver the information the Commission has requested to meet the objectives of the IOTC.

BACKGROUND

Scientific Committee

At the 20th Session of the SC:

(Para. 203) The SC noted paper IOTC–2017–SC20–09 which provided the Scientific Committee (SC) with a proposed Program of Work for each of its Working Parties (WP), including prioritisation of the elements requested by each WP.

(Para. 204) The SC noted the proposed Program of Work and priorities for the Scientific Committee and each of the Working Parties and **AGREED** to a consolidated Program of Work as outlined in Appendix XXXVIa-g. The Chairpersons and Vice-Chairpersons of each working party shall ensure that the efforts of their working party are focused on the core areas contained within the appendix, taking into account any new research priorities identified by the Commission at its next Session.

(Para. 206) The SC **AGREED** on the consolidated table of priorities across all Working Parties, as developed by each WP Chair, and **REQUESTED** that the IOTC Secretariat, in consultation with the Chair and vice-Chair of the SC and relevant Working Parties, develop ToRs for the specific projects to be carried out.

(Para. 208) The SC noted that the WPM has selected five species for MSE (albacore, yellowfin, bigeye, skipjack and swordfish). While these species are equally prioritised in terms of science, swordfish has been labelled as the first priority given that it is the only species currently lacking funding.

DISCUSSION

The SC is requested to consider the priorities set by the Commission, via Conservation and Management Measures, and consider and revise as necessary, its Program of Work to match those priorities.

The draft schedule of stock assessments for IOTC species and species of interest from 2019–2023, and for other working party priorities is provided in Appendix I. The highest three (3) priority projects by each Working Party are presented in Appendix II and all the priority projects agreed to by each WP meeting in 2017 are referred to in Appendix III.

RECOMMENDATION

That the Scientific Committee:

1) **NOTE** paper IOTC–2018–SC21–09, which encouraged the SC to further develop and refine its Program of Work for 2019–23, which is based on those of its Working Parties, to ensure it is aligned with the requests and directives from the Commission.
2) **ADOPT** a revised Program of Work for 2019–23.

APPENDICES

Appendix I: Draft: Schedule of stock assessments for IOTC species and species of interest from 2019–2023, and for other WP priorities.

Appendix II: IOTC Working Parties – references to the Program of Work appendices.

Appendix III: Top 3 priority list of projects for each IOTC Working Party.

APPENDIX I

DRAFT: SCHEDULE OF STOCK ASSESSMENTS FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2019–2023, AND FOR OTHER WORKING PARTY PRIORITIES

Working Party on Neritic Tunas					
Species	**2019****	**2020***	**2021*****	**2022**	**2023***
Bullet tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Frigate tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Indo-Pacific king mackerel	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Kawakawa	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Longtail tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Narrow-barred Spanish mackerel	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**

* Including data-limited stock assessment methods;
** Including species-specific catches, CPUE, biological information and size distribution;
*** Identification of data gaps and discussion of improvements to the assessments (stock structure);
Note: the assessment schedule may be changed dependent on the annual review of fishery indicators, or SC and Commission

Working Party on Billfish					
Species	**2019**	**2020**	**2021**	**2022**	**2023**
Black marlin			**Full assessment**		
Blue marlin	**Full assessment**			**Full assessment**	
Striped marlin			**Full assessment**		
Swordfish	**Indicators**	**Full assessment**		**Indicators**	**Full assessment**
Indo-Pacific sailfish	**Full assessment***			**Full assessment***	

*Including data poor stock assessment methods; Note: the assessment schedule may be changed depending on the annual review of fishery indicators, or SC and Commission requests

Working Party on Tropical Tunas					
Species	**2019**	**2020**	**2021**	**2022**	**2023**
Bigeye tuna	**Full assessment**	Indicators	Indicators	**Full assessment**	Indicators
Skipjack tuna	Indicators	**Full assessment**	Indicators	Indicators	**Full assessment**
Yellowfin tuna	Indicators	Indicators	**Full assessment**	Indicators	Indicators

Working Party on Ecosystems and Bycatch					
Species	**2019**	**2020**	**2021**	**2022**	**2023**
Blue shark		Indicators	Full assessment*	Indicators	–
Oceanic whitetip shark	Indicators	Full assessment*	–	Indicators	–
Scalloped hammerhead shark		–	–	Indicators	–
Shortfin mako shark	Indicators	Full assessment*	–	–	Indicators
Silky shark	Full assessment*	-	Indicators;	Full assessment*	–
Bigeye thresher shark	–	–	–	–	Indicators
Pelagic thresher shark	–	–	–	–	Indicators
Porbeagle shark	–	–	–	–	Indicators
Marine turtles		Interactions/Indicators			
Seabirds	–	Review of mitigation measures in Res. 12/04	–	–	Indicators
Marine Mammals	ERA; Review of mitigation measures in Res. 12/06	–	-	Review of mitigation measures in Res. 12/06	–
Ecosystem Based Fisheries Management (EBFM) approaches	Report from the IWC	–	ERA	–	–

*Including data poor stock assessment methods; Note: the assessment schedule may be changed dependent on the annual review of fishery indicators, or SC and Commission requests.

*Working Party on Temperate Tunas**					
Species	**2017**	**2018**	**2019**	**2020**	**2021**
Albacore	–		Data preparatory meeting **and Stock assessment**	–	Data preparatory meeting

* This Working Party did not meet in 2017 or 2018.

APPENDIX III
REFERENCES TO THE INDIVIDUAL IOTC WORKING PARTY PROGRAMS OF WORK

Report number	Report title	Appendix number
IOTC–2018–WPNT08–R	Report of the 8th Session of the Working Party on Neritic Tunas	Appendix VI
IOTC–2018–WPB16–R	Report of the 16th Session of the Working Party on Billfish	Appendix XI
IOTC–2018–WPEB14–R	Report of the 14th Session of the Working Party on Ecosystems and Bycatch	Appendix XIX
IOTC–2018–WPM09–R	Report of the 9th Session of the Working Party on Methods	Appendix IV
IOTC–2018–WPDCS14–R	Report of the 14th Session of the Working Party on Data collection and Statistics	Appendix V
IOTC–2018–WPTT20–R	Report of the 20th Session of the Working Party on Tropical Tunas	Appendix IX

APPENDIX II

TOP THREE PRIORITY PROJECTS FOR EACH IOTC WORKING PARTY

PR	WPTT (2016) Budget (potential source)		WPEB Budget (potential source)		WPNT Budget (potential source)		WPTmT (2016) Budget (potential source)		WPB Budget (potential source)		WPDCS (2017) Budget (potential source)		WPM Budget (potential source)	
1	**2.1.** Biological Sampling	US$?? (TBD)	**2.1** Historical data mining for the key species and IOTC fleets (e.g. as artisanal gillnet and longline coastal fisheries)	US$?? (TBD)	**1.** Collate and characterise operational level data for the main neritic tuna fisheries in the Indian Ocean to investigate their suitability to be used for developing standardised CPUE indices.	CPCs	**2.1.** Age and growth to construct catch at age and growth curves to use in the stock assessments.		**1.2** Tagging research to determine connectivity, movement rates and mortality estimates of billfish(Priority species: swordfish). .	US$400,K	**1.** Artisanal fisheries data collection	$?? (TBD)	**1.1.** Albacore MSE	Funded (EC JRC)
2	**8.1.** To advise the Commission, on Target Reference Points (TRPs) and Limit Reference Points (LRPs).	US$?? (TBD)	**3.4** Ecological Risk Assessment (sharks & rays)	US$?? (TBD)	**2.** Develop standardised CPUE series for the main fisheries for longtail, kawakawa, Indo-Pacific King mackerel and Spanish mackerel in the Indian Ocean, with the aim of developing CPUE series for stock assessment purposes.	CPCs directly	**4.1.** Develop standardized CPUE series for each albacore fishery for the Indian Ocean, with the aim of developing a single CPUE series.		**2.1** Age and growth research	(CPCs: age & growth study = 50,000)	**6.1.1** Support the adoption of the ROS e-Reporting and ROS national database tools by countries not having any existing observer data collection and management system in place 6.2 ROS Regional Database 6.2.1 Incorporate all historical observer data	$?? (TBD) US$20K US$35K	**1.4.** Yellowfin tuna MSE	$75,000 (ABNJ/CSIRO) pending)

											6.2.2 Add import / export capabilities from proprietary data collection 6.2.2 Implement dissemination best-practices for all data	US$20K		
3	**6.4.** Stock assessment priorities – detailed review of the existing data sources, including: i. Size frequency data. ii. Tagging data iii. Organisation of expert group to investigate tagging mortality iv. Re-estimation of M using updated tagging data.	US$?? (TBD)	**1.2.1** Connectivity, movements, and habitat use, including identification of hotspots and investigate associated environmental conditions affecting the sharks distribution, making use of conventional and electronic tagging (PSAT).	Partially funded (153,000€ IOTC + 100.000€ EU/DCF	**3.** Explore alternative assessment approaches and develop improvements where necessary based on the data available to determine stock status for longtail tuna, kawakawa and Spanish mackerel	IOTC Regular budget/EU Grant 305	**1.1.** 2.2.1 Age-at-maturity Quantitative biological studies are necessary for albacore throughout its range to determine key biological parameters including age-at-maturity and fecundity-at-age/length relationships, age-length keys, age and growth, which will be fed into future stock assessments.	1.3 m € (EU)	**2.2.** Reproductive biology study	(CPCs: Maturity study = 30,000)	**5.1** Develop software libraries to simplify access to the new IOTC Remote data services by scientists **5.2** Identify and add descriptive metadata to main IOTC data sets	US$30K (IOC/IRD?)	**1.3.** Bigeye tuna MSE	$75,000 (ABNJ/CSIRO) pending

TABLE 1. Priority topics for obtaining the information necessary to develop stock status indicators for all Working Parties. Numbering (in bold) represents numbers of each specific WP workplan where further details can be found in the WP reports for 2018 (except WPTmT report from 2016).