DRAFT: REPORT OF THE SECRETARIAT – ACTIVITES IN SUPPORT OF THE IOTC SCIENCE PROCESS IN 2017

PREPARED BY: IOTC SECRETARIAT, 9 NOVEMBER 2017

PURPOSE

1. To inform the Scientific Committee (SC) of work undertaken by the IOTC Secretariat in 2017 in support of the IOTC Science process, endorsed by the Commission.

DISCUSSION

Staffing

2. Executive Secretary (Dr Chris O'Brien): started at the IOTC Secretariat in July 2017.

IOTC meetings – Working parties

3. In 2017, six (6) Working Party meetings were organised and facilitated by the IOTC Secretariat (Table 1). The current Chairs and Vice-Chairs for each Committee and Working Party are provided at Appendix I.

4. Appendix II lists the documents produced by the IOTC Secretariat in support of Working Party meetings held in 2017. In addition, the IOTC Secretariat produced revised Executive Summaries for all of the IOTC stocks, as well as for sharks, seabirds and marine turtles in association with various experts, with the addition of a proposal for an Executive Summary on cetaceans, totalling 26 Executive Summaries.

5. The IOTC Secretariat facilitated the participation of invited experts that were selected to attend each of the Working Party meetings in 2017. The names and affiliations of each of the Invited Experts are provided in Table 1.

Table 1. Invited Experts for Working Party meetings in 2017

Working Party	Date and place	Name	Affiliation
Neritic Tunas	10–13 July, Maldives	Dr. Charles Edwards	NIWA, **New Zealand**
Ecosystems and Bycatch	4–8 September, Spain	Dr Felipe Carvalho	NOAA, **USA**
Billfish	10–14 September, Spain	Dr. Toshihide Kitakado	Tokyo University of Marine Science and Technology, **Japan**
Methods	13–15 October, Seychelles	Dr. Rishi Sharma	NOAA, **USA**
Tropical Tunas	17–22 October, Seychelles	Dr Rishi Sharma	NOAA, **USA**
Data Collection and Statistics	26-28 November, Seychelles	Nil	Nil

IOTC meetings – Meeting Participation Fund

6. The IOTC Meeting Participation Fund (MPF) was utilised for the indicated scientific meetings and/or Working Parties indicated in Table 1. Noting that the intention of the MPF was to utilise the funds, as a first priority, to support the participation of scientists from developing Members in scientific meetings of the IOTC, including Working Parties, in 2017, the Secretariat facilitated the participation of 51 individuals from developing Members of the IOTC to the six (6) Working Party meetings held in 2017 as detailed in Table 2.

7. The total level of participation (including the Scientific Committee) by MPF recipients was 64 in 2017 compared with 2016 (67), 2015 (53), 2014 (50), and 2013 (58) (46 in 2012, 33 in 2011 and 19 in 2010) (Table 2).

Table 2. Scientific Meetings held in 2017, prior to the 20th Session of the IOTC Scientific Committee meeting. Numbers in brackets represent numbers for the previous Working Party meetings.

Working Party	Date and place of most recent meeting	No. of participants							Meeting Participation Fund							No. of documents (and for the previous meeting)
		2011	2012	2013	2014	2015	2016	2017	2011	2012	2013	2014	2015	2016	2017	
Neritic Tunas	10–13 July, Maldives	28	35	42	37	31	20	26	9[1]	10	11	13	9	8	8	Total: 28 (28) Working papers: 27 (26) Information papers: 1 (2)
Temperate Tunas	21-24 July 2016, Shanghai, China	16	26	–	27	_	29	-	2	3	–	3	_	4	-	Total : 29 (30) Working papers : 29 (26) Information papers : 0 (4)
Billfish	10–14 September, Spain	27	23	24	21	23	18	25	5	5	10	4	9[2]	6	8	Total: 37 (29) Working papers: 35 (28) Information papers: 2 (1)
Ecosystems and Bycatch	4–8 September, Spain	49	48	32	37	38	37	39	7[3]	7	11	5	8[4]	8	7	Total: 57 (53) Working papers: 43 (42) Information papers: 14 (11)
Methods	13–15 October, Seychelles	–	22	–	34	26	29	27	–	1	–	3[5]	6[6]	9	5	Total: 27 (18) Working papers: 22 (17) Information papers: 5 (1)
Data Collection and Statistics	26-28 November, Seychelles	21	–	23	30	20	32	45	2	–	5	1	4	6	10	Total: 45 (33) Working papers: 40 (28) Information papers: 5 (5)
Tropical Tunas	17–22 October, Seychelles	49	47	46	53	44	47	48	13	8	10	6	6	6	10	Total: 55 (42) Working papers: 51 (39) Information papers: 4 (3)
Scientific Committee	30 November–4 December, Seychelles	50	54	75	62	71	78		10	12	11	15	13	18	13	Working papers: 14 (16) Executive Summaries: 26 (25) Information papers: 8 (7)

[1] Another 7 scientists were supported by IOTC through the Capacity Building funds as they were also attending the capacity building workshop in Chennai, India (WPNT01)
[2] 2 scientists attended both the WPB and WPEB;
[3] 3 scientists attended both the WPTT and WPEB
[4] 2 scientists attended both the WPB and WPEB
[5] 3 scientists attended both the WPM and SC
[6] Funded by the ABNJ tuna project
* Refers to year 2008

Data-related activities – General

8. A large proportion of the IOTC Data Section staff time is devoted to the acquisition and editing of the data required under the IOTC Resolutions. These data are utilised in monitoring compliance or in scientific analyses necessary for the assessment of the status of stocks. The IOTC databases are constantly revised and updated.

9. Integrated IOTC database: the migration of the main IOTC datasets has been completed and the development is now focusing on aspects related to data dissemination (through the IOTC website and through dedicated, remote services for the integration of data extraction and processing within third-party code) as well as the inclusion of additional support for improved stock assessment procedures and further integration with the Regional Observer Database.

10. The regular suite of datasets have been supplied for all scientists engaged in stock assessment activities and reports on status of IOTC databases produced for relevant Working Parties and SC, and for the preparation of the Country Reports of the Compliance Committee. No new information has been incorporated in the RTTP tagging dataset.

Data-related activities – Capacity building and other initiatives

11. The IOTC Secretariat continues to facilitate or provide direct support to developing coastal states using funds from the IOTC capacity building budget or other collaborating agencies. In particular, the Overseas Fishery Cooperation Foundation of Japan (OFCF) has provided resources and advice for the strengthening of data collection systems in more than 20 countries in the region since its inception in 2002. The IOTC Secretariat has also cooperated with COI-SmartFish, the BOBLME Project, the ABNJ Project, the ISSF, and other initiatives in recent years in the coordination and execution of capacity building activities in developing coastal states of the Indian Ocean. In addition, the IOTC Secretariat is also working collaboratively with NOAA, CMS, IOSEA, WWF-Pakistan and WWF-USA on capacity building activities to support the implementation of the Regional Observer Scheme in developing coastal states.

12. Table 3 provides a summary of the main capacity building activities undertaken since the end of SC19[7], which can be broadly categorised into the following activities:

    a) Data compliance and support missions: facilitate improvements in the validation and reporting of core IOTC datasets to the IOTC Secretariat (i.e., nominal catches, catch-and-effort, and size data). In 2017, a number of missions were conducted to CPCs identified as priority by the IOTC Working Parties and the Scientific Committee, including Pakistan and I.R. Iran.

    b) Technical assistance missions: capacity building in data collection, support for the development of (national) fisheries database and statistical systems, or other technical issues. Examples in 2017 include support for Kenya's Catch Assessment Survey, IOTC Sports Fishery Project, development of E-Maris, and continuation of support for Indonesia Pilot Project.

    c) Support for implementation of the Regional Observer Scheme: activities cover a number of components, including the development of the IOTC's Electronic ROS Reporting tool, and scoping missions for development of an Electronic Monitoring Systems pilot project for coastal (e.g., gillnet) fisheries.

13. Below is a non-exhaustive (provisional) list of the capacity building activities planned for 2018[8]:
    a) Support to the implementation of the IOTC Regional Observer Scheme (on-going), and development of the Regional Observer Scheme Pilot Project
    b) Regional Observer Scheme E-monitoring: pilot project (on-going)
    c) Regional Observer Scheme E-Reporting tool: follow-up workshops
    d) Implementation of port sampling program of Albacore (e.g., in Port Louis, Mauritius) (TBC)
    e) Data compliance and support missions (Pakistan; India (TBC); Indonesia (TBC)).

[7] For more information on these activities refer to *IOTC capacity building activities in support of developing coastal IOTC CPCs: 2017 activities*, IOTC–2017–WPDCS13-08, or email: IOTC-secretariat@fao.org.

[8] *Ditto* 5

f) Indonesia pilot project of artisanal fisheries (ad-hoc on-going support).
g) Kenya: continuation of support for the Catch Assessment Survey of artisanal fisheries, support for the finalization of the new integrated fisheries database.

Table 3. Missions of staff from the IOTC Secretariat during 2017 in relation to capacity building activities in the Indian Ocean.

Country	Date	Staff	Description
Kenya	Feb 2017	IOTC Fisheries Statistician	Technical assistance mission: review of Kenya's Catch Assessment Survey methodology, and evaluation of provisional results.
Indonesia	Mar 2017	IOTC Fisheries Statistician, IOTC consultant (plus IOTC-OFCF Project Manager)	Final workshop of the IOTC-OFCF-BOBLME pilot sampling project of artisanal fisheries in Indonesia (evaluation of the pilot sampling results and handover of the project outputs)
Sri Lanka	April 2017	IOTC Fisheries Statistician	i.) Scoping mission to evaluate the feasibility of implementation of Electronic Monitoring Systems on Sri Lankan gillnet/coastal longline vessels (as part of the ROS Pilot Project). ii.) Data compliance and support mission: reporting of catches for coastal fisheries
Pakistan	May 2017	IOTC Fisheries Statistician	i.) Attend the WWF Transparency and Traceabilty of tuna fisheries workshop. ii.) Provide technical support for the collection, and reporting of WWF-Pakistan's crew based observer scheme. iii.) Evaluate the feasibility of implementation of EMS on Pakistani gillnet vessels (as part of the ROS Pilot Project)
Maldives	July 2017	IOTC Fisheries Statistician	Data compliance and support mission: assistance for revision of neritic tuna and tropical tuna catch reconstruction
La Réunion	August 2017	IOTC Data Coordinator	i.) Data compliance and support mission ii.) Assistance for the second phase of the IOTC Sport Fishery project
Mauritius	August 2017	IOTC Data Assistant	i.) Data compliance and support mission ii.) Assistance for the second phase of the IOTC Sport Fishery project
Kenya	September 2017	IOTC Fisheries Statistician	i.) Follow-up to support the evaluation of the Catch Assessment Survey. ii.) Assistance for the second phase of the Sports Fishery project
South Africa	October 2017	IOTC Data Coordinator (plus the IOTC Secretariat Compliance Section)	Consultation and validation workshop on the development of an integrated Electronic Monitoring And Reporting Information System (e-MARIS)
I.R. Iran	November 2017	IOTC Data Coordinator, IOTC Fisheries Statistician	Data compliance and support mission, including implementation of the Regional Observer Scheme.
Kenya	December 2017 (TBD)	IOTC Data Coordinator	i.) Technical assistance mission to evaluate Kenya's new integrated fisheries database statistical system. ii.) Catch Assessment Survey and IOTC Sport Fisheries Project back-stopping.
Sri Lanka	December 2017 (TBD)	IOTC Fisheries Statistician, IOTC Data Assistant	Delivery of a first workshop for the adoption of the Electronic ROS data collection, reporting and management tools

Other data activities (2017)

14. CLAV: The IOTC Secretariat is responsible for the coordination of activities concerning the global Consolidated List of Authorized Vessels (CLAV), a regularly updated list including the authorized vessels of the five t-RFMOs. Collaboration between the IOTC Secretariat and FAO-FIPS continued in 2016. Since 2015, the CLAV has been further enhanced using funds from the FAO Common Oceans/ABNJ Tuna Project. The main objective of the CLAV component of the Project is ensuring that updates of the CLAV occur in as close-to real time as possible in the future.

15. Regional Observer Scheme: In 2016 the SC developed a proposal for a pilot project to support the implementation of the IOTC Regional Observer Scheme. This was subsequently circulated to Members and presented to the 21st Session of the Commission where it was approved. The project has progressed during 2017 and a full update is provided in paper IOTC-2017-SC20-07. In particular, the following components have been developed and are

currently subject to testing and assessment from the involved stakeholders (observers, national focal points and the IOTC Secretariat, respectively):

- Electronic interface for the collection and reporting of observer data (e-Reporting)
- Multiple databases for the storage of collected observer data at country level (National observer databases)
- A centralized database for the storage and dissemination of reported observer data (Regional observer database)

16. Sport fisheries project: The project aims to facilitate the reporting of sports fishery data to the IOTC (i.e., total catches, catch-and-effort, and size data), by targeting a number of countries identified as important for sports fisheries, but who have not reported catches to the IOTC. Four countries were identified for the project: Kenya, La Réunion, Mauritius, and Seychelles. The project was completed in October 2017 and includes, among its main outcomes, the following components:
    - a directory of sport fishing centres in the western Indian Ocean region, (i.e., for the selected countries),
    - development of a national database and accompanying standardized reporting charter logbook forms for sports fishery operators,
    - training material for the circulation among Sports Fishing Centres to improve the reporting of sports fisheries data to the IOTC Secretariat.

Science activities (2017)

17. CITES data mining and indicator development: A data-mining workshop was held in Victoria, Seychelles from 2-4 November 2016, led by a consultant, Dr Joel Rice. This was part of the WPEB Program of Work and funded by CITES. The main objectives of this workshop were to conduct data mining to compile historical data for CITES-listed oceanic whitetip (*Carcharhinus longimanus*) and hammerhead sharks, namely S*phyrna lewini, S. mokarran and S. zygaena* and develop descriptive indicators related to stock status. The final report was completed in March 2017 and was made available to the WPEB13 through paper IOTC-2017-WPEB13-INF01.
18. Neritic tuna stock assessment: In 2017 three data-poor stock assessment methods (an Optimised Catch-Only Method, Catch-MSY and Stochastic Stock Reduction Analysis) were used by the IOTC Secretariat (Dan Fu and Sarah Martin) to assess the status of stocks of Longtail tuna (*Thunnus tonggol*), and narrow-barred Spanish mackerel (*Scomberomorus commerson*).
19. Neritic tuna growth meta-analysis workshop: In July 2017 a workshop was held to improve the estimates of growth for neritic tuna species. Estimates of growth for neritic tuna species in the Indian Ocean are highly variable, based on a number of independent studies that have taken place in particular regions over particular time periods. However, there is likely to be migration of fish across the entire area and so isolated studies may not be appropriate for these populations so the WPNT requested a meta-analysis to take place using the raw age and length data to obtain a combined picture of parameters related to growth in the Indian Ocean. Full details of the data and methods used are provided in IOTC–2017–WPNT07–14.
20. DLMtool training workshop: In May 2017 a training workshop in data-limited stock assessment methods was organised by the IOTC Secretariat. The training course was developed and funded by the FAO-ABNJ Common Oceans Tuna Project, and was tailored specifically for the Indian Ocean tuna fisheries. This was advertised through circular 2019-036 and through the IOTC science mailing list in which an invitation was extended to all interested parties. This provided an introduction to data-limited stock assessment methodologies; introduction to simulation testing concepts such as operational modelling, observation error models, closed-loop testing, performance metrics, trade-offs and value of information analysis; implementation of data-limited assessment methods for real data-limited fisheries, diagnostics, graphing outputs, management procedures selection and an introduction to simulation testing procedures of alternative harvesting options. The workshop was attended by 16 people, and financial support was provided for developing CPCs from ABNJ.
21. Blue shark catch reconstruction: The IOTC Secretariat (Sarah Martin and Fabio Fiorellato) worked with the stock assessment consultant (Dr Joel Rice) to develop statistical approaches for the estimation of historic blue shark catches. The catches derived from GAM estimates were used as the base case model run in the stock assessment.

22. Blue shark stock assessment: A Stock Assessment consultant (Dr. Joel Rice) was hired to conduct a stock assessment for blue shark in 2017. The stock synthesis III model was fitted to alternative catch histories and alternative CPUE series. The major axes of uncertainties identified in the current model are catches and CPUE indices of abundance. The base (reference) model used the GAM-based catch history estimates and the CPUE series from Portugal, EU-France (Reunion) and Japan (late series).

23. Swordfish stock assessment: The IOTC stock assessment scientist (Dan Fu) carried out a stock assessment of swordfish in 2017 using stock synthesis III. The main uncertainties in the model were the catch by Indonesia in the last 2 years and the assumption that the Japanese CPUE is indexing density in each area and that the density is uniform in each area. As there was no explicit evidence of a catch increase by Indonesia in 2014 and 2015, the catch was assumed to be at the level of the 2011 to 2013 average. To relax the constraint of the shared catchability amongst the Japanese CPUE, an alternative regional weighting approach was used derived from unfished spawning biomass estimated using sub-regional models (one for each region and each model included catch and observational data from that region only). The WPB selected this SS3 run *r-NTP* as the base case model.

24. Skipjack stock assessment: The IOTC stock assessment scientist (Dan Fu) carried out a stock assessment of skipjack in 2017 using stock synthesis III. The main uncertainties in the model were the initial tagging mortality assumed for the tag releases and the improvement in technology by the purse seine fleet (CPUE series). Tag mortality was assumed at 15% or 25% and an arbitrary effort creep of 1% per year were assumed by the WPTT for the final grid.

25. IOTC Species ID guides: Work is ongoing to translate, typeset, format and print the IOTC Species ID guides into the priority languages identified by the SC. An update on current progress is available in IOTC-2016-SC19-07.

26. Cetacean ID guides: A consultant has been hired to develop a set of cetacean ID guides for the Indian Ocean and the work is due to commence shortly. The Marine Mammal Commission will be supporting translation of the guides into priority languages identified by the WPEB13 and also covering the printing expenses. The priority languages identified are Japanese, Chinese (Mandarin and Taiwanese), French and Spanish for species names and French, Spanish, Persian, Urdu, Sinhalese and Tamil, Hindi, Bahasa Indonesian, Arabic and Swahili for the entire booklet.

27. IOTC FAD working group: An internal IOTC working group on FADs was held prior to the joint working group as recommended by the SC19. The one-day meeting was co-Chaired by the Chair of the Commission and the Chair of the Scientific Committee and the data received by the Secretariat were reviewed and discussed by the group, particularly in light of the potential for estimating the total number of active FADs. The room for interpretation regarding the categories of FADs was observed by the group, who considered that the WPDCS should play a key role in revising these classifications to ensure that they are mutually exclusive and prevent the possibility of double-counting FADs. One of the main of points of agreement from the group was the need for consistent terminology and definitions when referring to FAD-related activities, such as ‘non-entangling’ and ‘biodegradable’, a consensus that was echoed at the joint tRFMO meeting. A further item noted was the loop-hole within Resolution 15/08 whereby a date for commencing the implementation of non-entangling FADs is provided, however, no date is provided by which they should have been fully implemented.

Joint tRFMO activities

28. Ecosystem Based Fisheries Management: In December 2016 the IOTC Secretariat, with the SC and WPEB Chairpersons, attended a joint meeting of tuna RFMOs on the Implementation of the Ecosystem Approach to Fisheries Management. The current status of the application of EBFM in each tRFMO was discussed and compared in light of the differing underlying RFMO Agreements and Conventions, institutional structures, Member participation and fisheries. Examples of successful implementation of EBFM at the national level were discussed based on case studies presented from Australia and the USA. The challenges to taking similar approaches in international tuna fisheries were discussed and potential solutions to overcome these were reviewed as part of a draft framework. The full report is available online as document: IOTC-2017-WPEB13-INF09.

29. Joint FAO/CITES/RFMO and RFB workshop: In March 2017 the IOTC Secretariat and Chair of the WPEB attended a joint workshop to discuss relevant outcomes of the 17th meeting of the Conference of Parties to CITES (particularly those concerning sharks), evaluate the 2013-2016 CITES project outputs and discuss opportunities for future collaboration. Results of the joint IOTC-CITES 2016 project were presented and discussed.

30. SeaBird Bycatch Assessment Workshop: In early 2017 the IOTC Secretariat attended two regional seabird bycatch assessment workshops which aimed to strengthen the capacity of national scientists and institutions to manage and conduct analyses of seabird bycatch data and the effectiveness of bycatch mitigation measures and

develop harmonised assessment methods to facilitate annual seabird bycatch assessments by RFMOs and/or CPCs and for the global assessment of current bycatch levels.

31. Joint FAD working group: A joint tRFMO meeting was held in Madrid in April 2017 between IOTC, ICCAT and IATTC. This provided an overview of the different stages that each tRFMO has reached in the research and management of FAD fisheries. While a substantial amount of research has taken place in IATTC, the IOTC remains the only tRFMO to have taken the practical step of implementing a limit on the number of active FADs that may be used. A summary table of key priority areas for future work at the level of the CPC, RFMO and across tRFMOs through a Kobe-type process was prepared and agreed on by Members of each tRFMO. EU funding was provided to support the attendance of developing CPCs at this meeting.

Stock assessment consultants

32. Blue shark: A Stock Assessment consultant (Dr. Joel Rice) was hired to conduct the stock assessment of blue shark.

33. Yellowfin and bigeye tuna MSE: A Stock Assessment consultant (Dale Kolody) funded by the joint ABNJ project conducted MSE for yellowfin and big-eye tuna.

34. Collaborative longline CPUE: A follow-up CPUE workshop was arranged to update and develop the collaborative longline CPUE for tropical and temperate tunas, by a stock assessment consultant (Dr. Simon Hoyle), funded by ISSF and the IOTC regular budget, to address contrary signals of abundance noted for the major tropical species between Taiwan,China, Japan, and Rep. of Korea. The consultant worked closely with scientists from the three fleets to understand and resolve the inconsistencies between the fleets; five papers on the results of developments in the collaborative CPUE were presented at WPTT19 and WPM08.

IOTC publications and information products

Documents

35. In 2017, the Secretariat produced 59 (74 in 2016, 59 in 2015, 61 in 2014) papers/reports (Appendix II) in support of the IOTC Science process, not including the reports of the various working parties (6) or the species Executive Summaries (26).

IOTC Website

36. The IOTC website continues to be a portal for communicating science related information to a variety of audiences. The Secretariat completed development of a new website in 2015, as requested by the Commission, which include:
    - **Stock assessment**: Input and output files for yellowfin tuna stock assessments.
    - **Species ID guides:** translated versions are being made available online, as they are produced.

RECOMMENDATION

That the Scientific Committee **NOTE** paper IOTC–2017–SC20–05 which provides the report of the IOTC Secretariat for 2017, including the updates provided on the Recommendations and Requests directed to the IOTC Secretariat for implementation in 2017.

APPENDICES

Appendix I: List of Chairs, Vice-Chairs and their respective terms for IOTC Science meetings.

Appendix II: Papers from the IOTC Secretariat (or co-authorship) submitted to the IOTC Working Parties or Scientific Committee in 2017.

APPENDIX I

List of Chairs, Vice-Chairs and their respective terms for the IOTC Scientific Committee and its subsidiary bodies

Group	Chair/Vice-Chair	Chair	CPC/Affiliation	1st Term commencement date	Term expiration date (End date is until replacement is elected)	Comments
SC	Chair	Dr Hilario Murua	EU,Spain	28–Nov–15	End of SC in 2017	1st term
	Vice-Chair	Dr Shiham Adam	Maldives, Rep. of	28–Nov–15	End of SC in 2017	1st term
WPB	Chair	Dr Rui Coelho	EU,Portugal	14–Sept–17	End of WPB in 2019	1st term
	Vice-Chair	Dr Evgeny Romanov	EU,France	05–Sep–15	End of WPB in 2019	2nd term
WPTmT	Chair	Dr Jiangfeng Zhu	China	21–July–16	End of WPTmT in 2018	1st term
	Vice-Chair	Dr Toshihide Kitakado	Japan	21–July–16	End of WPTmT in 2018	1st term
WPTT	Chair	Dr Shiham Adam	Maldives, Rep. of	19–Nov–14	End of WPTT in 2019	2nd term
	Vice-Chair	Dr Gorka Merino	EU,Spain	19–Nov–14	End of WPTT in 2019	2nd term
WPEB	Chair	Dr Sylvain Bonhommeau	EU,France	08–Sept–17	End of WPEB in 2019	1st term
	Vice-Chair	Dr Reza Shahifar; Dr Ross Wanless	I.R. Iran / South Africa	11–Sept–15	End of WPEB in 2019	2nd term
WPNT	Chair	Dr Farhad Kaymaram	I.R. Iran	29–May–15	End of WPNT in 2019	2nd term
	Vice-Chair	Dr Mathias Igulu	Tanzania	29–May–15	End of WPNT in 2019	2nd term
WPDCS	Chair	Mr Stephen Ndegwa	Kenya	28–Nov–17	End of WPDCS in 2019	1st term
	Vice-Chair	Dr Julien Barde	EU,France	28–Nov–17	End of WPDCS in 2019	1st term
WPM	Chair	Dr Toshihide Kitakado	Japan	21–Oct–15	End of WPM in 2019	2nd term
	Vice-Chair	Dr Iago Mosqueira	EU,Spain	21–Oct–15	End of WPM in 2019	2nd term

APPENDIX II
Papers from the IOTC Secretariat (or co-authorship) submitted to the IOTC Working Parties or Scientific Committee in 2017

Document number	Title
7th Session of the IOTC Working Party on Neritic Tunas	
IOTC–2017–WPNT07–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPNT07–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–WPNT07–05	Review of current Conservation and Management Measures relating to neritic tuna species (IOTC Secretariat)
IOTC–2017–WPNT07–06	Progress made on the recommendations and requests of WPNT06 and SC19 (IOTC Secretariat)
IOTC–2017–WPNT07-07	Review of the statistical data available for the neritic tuna species (IOTC Secretariat)
IOTC–2017–WPNT07–08	Revision of the WPNT Program of Work (2018–2022) (IOTC Secretariat)
IOTC–2017–WPNT07–09	Improving the core IOTC data management processes (IOTC Secretariat)
IOTC–2017–WPNT07–14	A hierarchical Bayesian approach to estimate growth parameters from length data of narrow spread (S.Zhou, S.Martin and D.Fu)
IOTC–2017–WPNT07–15 Rev_1	Assessment of Indian Ocean longtail tuna (*Thunnus tonggol*) using data poor catch-based methods (IOTC Secretariat)
IOTC–2017–WPNT07–17 Rev_1	Assessment of Indian Ocean narrow-barred Spanish mackerel (*Scomberomorus commerson*) using data poor catch-based methods (IOTC Secretariat)
15th Session of the IOTC Working Party on Billfish	
IOTC–2017–WPB15–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPB15–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–WPB15–05	Review of Conservation and Management Measures relevant to billfish (IOTC Secretariat)
IOTC–2017–WPB15–06	Progress made on the recommendations and requests of WPB14 and SC19 (IOTC Secretariat)
IOTC–2017–WPB15–07_Rev1	Review of the statistical data and fishery trends for billfish species (IOTC Secretariat)
IOTC–2017–WPB15–08	Revision of the WPB Program of Work (2018–2022) (IOTC Secretariat)
IOTC–2017–WPB15–20_Rev1	An age-, sex- and spatially-structured stock assessment of the Indian Ocean Swordfish fishery 1950-2015, using stock synthesis (IOTC Secretariat)
13th Session of the Working Party on Ecosystems and Bycatch	
IOTC–2017–WPEB13–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPEB13–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–WPEB13–05	Review of Conservation and Management Measures relevant to ecosystems and bycatch (IOTC Secretariat)
IOTC–2017–WPEB13–06	Progress made on the recommendations and requests of WPEB12 and SC19 (IOTC Secretariat)
IOTC–2017–WPEB13–07	Review of the statistical data and fishery trends for ecosystems and bycatch species (IOTC Secretariat)
IOTC–2017–WPEB13–08	Update on the implementation of the IOTC Regional Observer Scheme (IOTC Secretariat)
IOTC–2017–WPEB13–09	Status of development and implementation of National Plans of Action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (IOTC Secretariat)
IOTC–2017–WPEB13–10 Rev_1	Revision of the WPEB Program of Work (2018–2022) (IOTC Secretariat)
IOTC–2017–WPEB13–23	Approaches to the reconstruction of catches of Indian Ocean blue shark (J.Rice, S.Martin, F.Fiorellato)
IOTC–2017–WPEB13–INF01	Final summary report of the stock status of oceanic whitetip sharks and CITES-listed hammerhead sharks based on the results of the IOTC/CITES Shark Data Mining Workshop (J.Rice)
19th Session of the Working Party on Tropical Tunas	
IOTC–2017–WPTT19–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPTT19–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)

IOTC–2017–WPTT19–05	Review of Conservation and Management Measures relevant to tropical tunas (IOTC Secretariat)
IOTC–2017–WPTT19–06	Progress made on the recommendations of WPTT18 (IOTC Secretariat)
IOTC–2017–WPTT19–07	Review of the statistical data and fishery trends for tropical tunas (IOTC Secretariat)
IOTC–2017–WPTT19–08	Revision of the WPTT Program of Work (2018–2022) (IOTC Secretariat)
IOTC–2017–WPTT19–37	CPUE standardizations of the Seychelles Indian Ocean longline fleet 2004-2015 (Fu D, Lucas J, Assan C, Govinden R)
IOTC–2017–WPTT19–47	Indian Ocean Skipjack tuna stock assessment 1950-2016 (Fu D)
IOTC–2017–WPTT19–INFO2	Report of the 4th IOTC CPUE workshop on longline fisheries (IOTC Secretariat, et al)

8th Working Party on Methods

IOTC–2017–WPM08–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPM08–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–WPM08–05	Review of Conservation and Management Measures relating to methods (IOTC Secretariat)
IOTC–2017–WPM08–06	Progress on the recommendations of WPM07 and SC19 (IOTC Secretariat)
IOTC–2017–WPM08–07	Revision of the WPM Program of Work (2017–2021) (IOTC Secretariat & Chairpersons)
IOTC–2017–WPM08–12 Rev_1	An online tool to easily run stock assessment models, using SS3 and YFT as an example (A.Nieblas, S.Bonhommeau, T.Imzilen, D.Fu, F.Fiorellato, J.Barde)
IOTC-2017-WPM08-INF03	Data as resources: how to enhance data sharing capabilities between the Secretariat and the scientific community (IOTC Secretariat)

13th Working Party on Data Collection and Statistics

IOTC–2017–WPDCS13–03	Outcomes of the 19th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2017–WPDCS13–04	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–WPDCS13–05	Review of current Conservation and Management Measures relating to the WPDCS (IOTC Secretariat)
IOTC–2017–WPDCS13–06	Progress on the recommendations of WPDCS12 (IOTC Secretariat)
IOTC–2017–WPDCS13–07	Report on IOTC Data Collection and Statistics (IOTC Secretariat)
IOTC–2017–WPDCS13–08	IOTC capacity building activities in support of developing coastal IOTC CPCs (IOTC Secretariat)
IOTC–2017–WPDCS13–09	Revision of the WPDCS Program of Work (2018–2022) (IOTC Secretariat, Chairperson & Vice-Chairperson)

20th Session of the Scientific Committee

IOTC–2017–SC20–03	Outcomes of the 21st Session of the Commission (IOTC Secretariat)
IOTC–2017–SC20–04	Previous decisions of the Commission (IOTC Secretariat)
IOTC–2017–SC20–05	Report of the Secretariat – Activities in support of the IOTC science process in 2017 (IOTC Secretariat)
IOTC–2017–SC20–06	Status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (IOTC Secretariat)
IOTC–2017–SC20–07	2017: Update on the implementation of the regional observer scheme (IOTC Secretariat)
IOTC–2017–SC20–08	2017: Update on progress regarding Resolution 09/01 – on the performance review follow–up (IOTC Secretariat)
IOTC–2017–SC20–09	Revision of the program of work (2018–2022) for the IOTC science process (IOTC Secretariat)
IOTC–2017–SC20–10	Proposed schedule of Working Party and Scientific Committee meetings for 2018 and 2018 (IOTC Secretariat)
IOTC–2017–SC20–13	Progress on recommendations from SC19 (IOTC Secretariat)