REPORT OF THE SECRETARIAT – ACTIVITES IN SUPPORT OF THE IOTC SCIENCE PROCESS IN 2023

PREPARED BY: IOTC SECRETARIAT, 2 NOVEMBER 2023

PURPOSE

To inform the Scientific Committee (SC) of work undertaken by the IOTC Secretariat in 2023 in support of the IOTC Science process, endorsed by the Commission.

DISCUSSION

IOTC meetings – Working parties

In 2023, eleven (11) Working Party and Working Group 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 in Appendix I.

Appendix II lists the documents produced by the IOTC Secretariat in support of Working Party meetings held in 2023. In addition, the IOTC Secretariat produced revised Executive Summaries for all of the IOTC stocks, as well as for sharks, seabirds, marine turtles and cetaceans in association with various experts, totalling 26 Executive Summaries.

The IOTC Secretariat facilitated the participation of invited experts that were selected to attend some of the Working Party meetings in 2023. The names and affiliations of each of the Invited Experts are provided in Table 1.

Table 1. Working party and Working Group meetings in 2023

Working Party	Date and place	Invited expert
Ad hoc Working Group on the Development of Electronic Monitoring Programme Standards (WGEMS)	15-17 June, Virtual	
MSE Task Force of the Working Party on Methods Meeting (WPM_MSE)	28-31 March, Virtual	
Working Group on FADs (WGFAD)	29-20 May, Virtual	
Working Party on Tropical tunas (Data preparatory) (WPTT_DP)	31 May – 2 June, Virtual	
Working Party on Neritic Tunas (WPNT)	3–7 July, Seychelles	
Working Party on Billfish (WPB)	6–9 September, Reunion	
Working Party on Ecosystems and Bycatch (Assessment meeting) (WPEB)	11–15 September, Reunion	Dr Cindy Tribuzio (NOAA)
Working Group on FADs (WGFAD)	4-6 October, Virtual	
Working Party on Methods (WPM)	26–28 October, Spain	
Working Party on Tropical Tunas (WPTT)	30 October – 4 November, Spain	
Working Party on Data Collection and Statistics (WPDCS)	28 November – 2 December, India	

IOTC meetings – Meeting Participation Fund

7. 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 2023, the Secretariat facilitated the participation of 42 individuals from developing Members of the IOTC to the Working Party meetings held in 2023 as detailed in Table 2.

The total level of participation (including the Scientific Committee) by MPF recipients was 42 in 2023, compared with 2022(25), 2021(0), 2020(0), 2019(77), 2018(46), 2017(64), 2016 (67) and 2015 (53) (Table 2).

Table 2. Scientific Meetings held in 2023, prior to the 26th 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)
		2017	2018	2019	2020	2021	2022	2023	2017	2018	2019	2020	2021	2022	2023	
Working Groups																
Electronic Monitoring Programme Standards	15-17 June, Virtual	-	-	-	-	79	104	89	-	-	-	-	0	0	0	Total: 9 (15) Working papers: 6 (6) Information papers: 3 (9)
FADs	29-20 May, Virtual	48	-	-	-	93	111	75	NA	-	-	-	0	0	0	Total: 31 (22) Working papers: 28 (21) Information papers: 3 (1)
	4-6 October, Virtual							116								
Working Parties																
Neritic Tunas	3–7 July, Seychelles	26	18	18	43	33	36	35	8	6	6	0	0	0	8	Total: 20 (18) Working papers: 20 (14) Information papers: 0 (4)
Temperate Tunas	No meeting in 2023	-	-	19	-	-	51	-	-	-	1	-	-	0	-	Total: - (30) Working papers: - (29) Information papers: - (1)
				23			42				4			0		
Billfish	6–9 September, Reunion	25	20	25	55	55	51	97	8	5	9	0	0	0	8	Total: 36 (23) Working papers: 30 (20) Information papers: 6 (3)
Ecosystems and Bycatch	11–15 September, Reunion	39	40	41	108	68	103	100	7	7	13	0	0	0	7	Total: 76 (54) Working papers: 35 (30) Information papers: 41 (24)
						93							0			
Methods	28-31 March, Virtual	27	23	37	55	41	46	31	5	2	7	0	0	0	0	Total: 22 (24) Working papers: 22 (22) Information papers: 0 (2)
	26–28 October, Spain					54	60	39					0	0	3	
Tropical Tunas	31 May – 2 June, Virtual	48	57	68	62	80	67	76	10	7	13	0	0	0	0	Total: 51 (48) Working papers: 38 (37) Information papers: 13 (11)
	30 October – 4 November, Spain				111	108	113	91				0	0	0	4	
Data Collection and Statistics	28 November – 2 December, India	45	52	41	76	94	117	TBC	10	7	9	0	0	0	4	Total: TBC (38) Working papers: TBC (34) Information papers: TBC (4)

Scientific Committee	5 – 9 December, Virtual	63	73	43	141	130	129	TBC	13	12	15	0	0	8	TBC	Working papers: TBC (10) Executive Summaries: 26 (26) Information papers: TBC (2)

Data-related activities – General

A large proportion of time from the IOTC Data Section staff is dedicated to the acquisition and processing of the data required under various IOTC Resolutions. These are utilised in support of scientific analyses necessary for the assessment of the status of stocks, and in monitoring the compliance of CPCs with respect to currently standing data reporting requirements. The Data Section of the Secretariat also regularly addresses some data requests from the CPCs as well as from academics and other Regional Fishery Bodies.

The IOTC databases are constantly revised and updated, and the migration towards a fully integrated IOTC data repository continues to be under way to improve several aspects of the IOTC statistical data management workflow, including the proper attribution of metadata to all managed datasets, the addition of new ancillary data sources such as cannery sales data, daily buoy positions, scientific observer, tagging, and biological data, as well as the implementation of a two-way integration process with the e-MARIS platform[1].

Significant effort is also dedicated to improving the range of fisheries indicators currently included in all Secretariat papers on data and statistics presented at the IOTC working parties, as well as the data-specific sections of the IOTC website and the *interactive data browser*, to allow filtering and displaying information of several of the main IOTC data sets.

The standard IOTC statistical datasets have been produced and supplied to all scientists engaged in stock assessment activities and to stakeholders involved in management initiatives; reports on the status of all IOTC databases have been produced for all relevant Working Parties and SC, as well as for the preparation of the Country Reports of the Compliance Committee. A collaboration has been initiated with some research institutes, Universities, and international NGOs to collate satellite tagging data and make them available to the scientists involved in IOTC Working Parties, and the IOTC ROS Regional Database has been updated with new submissions from CPCs.

During 2023 the IOTC Secretariat has continued with its efforts to rationalize and simplify the submission of statistical data by designing and trialling new versions of the IOTC data reporting forms and their accompanying online validators, implementing an online reference data catalogue, and progress with a more systematic definition and identification of the fisheries of relevance to the IOTC.

Data-related activities – Capacity building and other initiatives

The IOTC Secretariat continues with its mandate to provide direct support to and facilitate the work of developing coastal states, mainly through funds from the IOTC capacity building budget and other collaborating agencies.

The European Union and the Overseas Fishery Cooperation Foundation of Japan (OFCF) have provided resources and advice for the strengthening of data collection systems in more than 20 countries in the region over the last years twenty years.

Besides, the IOTC Secretariat cooperates with several other stakeholders that include ECOFISH, the International Seafood Sustainability foundation, the World Bank, CMS and IOSEA, to coordinate and execute capacity building and research activities in developing coastal states of the Indian Ocean.

In addition, the IOTC Secretariat also collaborated with NOAA, WWF-Pakistan, WWF-USA and SIOTI on capacity building activities to specifically support the implementation of the Regional Observer Scheme.

Table 3 provides a summary of the main capacity building activities undertaken since the end of SC25, which can be broadly categorised into the following activities:

a. Data compliance and support missions: these are aimed at facilitating improvements in the validation and reporting of core statistical datasets to the IOTC Secretariat (i.e., retained catches, catch and effort, and size-frequency data), assess current shortcomings concerning the collection and management of fisheries data, and agree on a plan of action required for CPCs to deliver improvements in their levels of reporting.

[1] https://www.iotc.org/documents/emaris-technical-specifications

b. Technical assistance missions: including capacity building in data collection, support for the development of national fisheries databases and statistical systems, or other issues related to fisheries data management.

c. Support for implementation of the Regional Observer Scheme and implementation of the ROS Pilot Project: ROS-related capacity building activities cover several components, including further developments and improvements of the IOTC ROS e-tools, as well as studies on the implementation of electronic monitoring systems (EMS) in small-scale fisheries.

   Work on the ROS electronic tools and ROS regional database is still ongoing, to account (among other things) for the feedback on the tools as reported by end-users and establish direct integration mechanisms between *ObServe* and the ROS regional database (in collaboration with scientists from IRD).

   Following a proposal on Minimum standards for the design and implementation of EMS in Indian Ocean tuna fisheries presented at the SC in 2020, the Secretariat has also supported the delivery of the 3rd ad-hoc Working Group on EMS (March 2023).

Below is a provisional list of the capacity building activities planned for 2024, conditional to the release of travel bans to and from all targeted countries:

a. ROS e-monitoring in Sri Lanka: even though the core part of this activity completed in September 2021, further on-site support is still required to guarantee that EMS data could be properly exchanged with the IOTC Secretariat

b. Regional Observer Scheme e-tools: additional workshops to be scheduled with pilot countries once observer deployment activities re-start

c. Regional workshop(s) on IOTC data reporting, also recommended by the Compliance Committee

d. Data compliance and support missions: priority countries to be confirmed (also on the basis of the PoW agreed by the 19th Working Party on Data Collection and Statistics), but tentatively to include:

   1. Indonesia (to continue discussions regarding the re-estimation of official catches) and India (to improve compliance with IOTC data reporting requirements)

   2. I.R. Iran, Pakistan, Tanzania, and Bangladesh, to assess the recent developments in national data collection systems and ensure reporting of data by IOTC standards

   3. Oman, to better understand the factors driving the recent increases in reported catches from their handline fisheries.

Table 3. Activities of the IOTC Secretariat in relation to science and data-related capacity building activities in the Indian Ocean in 2023

Country / CPC	Dates	Executing agencies / staff	Description of activities
Indonesia (in person, Jakarta) (remote) (remote)	27 Feb-3 Mar. 2023 **COMPLETED** 11-13 Oct. 2023 **COMPLETED** 9 and 14 Nov. 2023 **COMPLETED**	IOTC Data Coordinator IOTC Fisheries statistician Representatives from: 1. Ministry of Marine Affairs and Fisheries of Indonesia 2. National research institutions 3. FAO (Fisheries Statistics Division) International Pole and Line Foundation	Continuation of the previous remote / in person meetings held in 2021 and 2022, to discuss the current state-of-the-art in terms of re-estimation procedures for Indonesia's annual catches. The main activities of the missions were: • Review the progress made since WPDCS 17 (see document IOTC-2022-WPDCS18-27) • Provide technical advice on the current methodology proposed by Indonesia
Tanzania (in person, Zanzibar)	10-14 July 2023 **COMPLETED**	IOTC Fishery Officer (data) IOTC data assistant	• Provide an updated overview of Tanzania's current compliance level with respect to IOTC data reporting requirements • Review and obtain a better understanding of the current data collection and processing methodology in place in Tanzania

			• Further clarify any outstanding aspects of the IOTC data reporting process and propose potential improvements to increase the efficiency of data reporting • Better understanding of the factors explaining the discrepancies in data reported to the IOTC Secretariat for all concerned fisheries
Comoros, Indonesia, I.R. Iran, Madagascar, Malaysia, Maldives, Kenya, Thailand, Seychelles, Tanzania (remote)	20 Oct. 2023 **COMPLETED**	IOTC Fishery Officer (data) IOTC data assistant	Workshop on the characterization of IOTC fisheries using the FAO matrix approach • Reminder on IOTC current categorisation of fishing vessels as artisanal or industrial • Introduction and test of the matrix-based approach developed by FAO to characterize fisheries
All IOTC members (virtual)	June-July 2023 **COMPLETED**	IOTC Fishery Officer (data)	Scoping study on Electronic Data Collection Tools (see IOTC-2023-WPDCS19-27)

Other data activities (2023)

FIRMS Global Tuna Atlas (GTA): The IOTC continues with its contribution to the provision of updated and harmonized geo-referenced monthly catches and total catches of main IOTC species to the GTA. The resulting product (which is now part of the offering of FAO / FIRMS) provides a combined global overview of the extent and magnitude of commercial tuna fisheries across all major oceans, including data sourced from the five tRFMOs and the collated and harmonized dataset it manages has been used to support the work of the Working Party on Tropical Tunas, and IOTC Working Group on FADs, among others.

FAO Coordinating Working Party on Fishery Statistics (CWP): The IOTC, through its Data Coordinator, remains engaged in contributing to the work of the CWP by chairing the main and intersessional meetings, and coordinating the capture fisheries subgroup.

Regional Observer Scheme: An update on progress with the implementation of the ROS Pilot Project is provided in paper IOTC-2023-SC26-07. Key areas of progress this year include:

- The Electronic Monitoring Systems trial project for small-scale fisheries in Sri Lanka has concluded. The equipment was successfully installed onboard four vessels and the final sets of equipment have been delivered but are still pending installation onboard two further vessels by the Sri Lanka Ministry of Fisheries and Aquatic Resources.
- A contract was awarded for the development of training materials and supporting national observer schemes in six IOTC CPCs between 2019 and 2020, later reduced to four due to some CPCs being unable to meet the requirements set out for participating in the pilot project. Activities were further postponed due to travel restrictions resulting from the Covid-19 pandemic and the project finally resumed in Q3 2021, with a package of training manuals and supporting documents presented to the WPDCS17. The project is now completed, and full training has been delivered in all four participating countries. The Secretariat remains engaged with participating countries to start receiving data from deployed observers.

Processing of cannery sales data from ISSF-affiliated companies: since 2010 the IOTC Secretariat has been receiving quarterly summaries of the products offloaded at several canneries associated with the International Seafood Sustainability Foundation (ISSF). The ISSF funded a consultancy to clear, harmonize and compile all tuna factory quarterly reports submitted by the ISSF-participating companies during 2010-2021, upload harmonized reports into a relational database, and proceed to further curate the data to improve its overall quality and traceability. In light of the importance of this complementing source of information, the IOTC Secretariat (under advice from the WPTT) has planned to initiate a more thorough and continuous revision process of all received information for future dissemination to the IOTC scientific working parties.

Socio-economic data: Since 2021 the IOTC Secretariat has collaborated with the Fisheries Development Division of the Pacific Islands Forum Fisheries Agency (FFA) to collate time series of import prices for tuna and crude oil prices and make them available through the IOTC website for supporting the IOTC scientific work. In addition, contacts

have been taken with FAO to develop a procedure of exchange of additional socio-economic data sets (e.g., imports/exports of fish products, contribution of fisheries to the national Gross Domestic Product) which will be instrumental for the new Working Party on Socio-Economics planned to start in 2024 (Res. 23/10).

Science activities (2023)

CPC contributions to the Scientific Work of the IOTC: These contributions, as requested in Para 16 of IOTC-2018-SC21-R are provided in Appendix III. The text below contains links from the individual activities to the grants they are supported by.

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. Funding for translating and delivering ID cards was provided by OFCF. In 2023, ID guides have been produced in: Thai for tuna; Thai, Swahili, Sinhalese and Tamil for billfish; and Sinhalese and Tamil for Sharks and Rays. The current set of identification guides available is provided here: www.iotc.org/science/species-identification-cards.

Yellowfin Tuna Stock Assessment Peer Review Workshop: The IOTC secretariat facilitated and participated in the external Yellowfin Tuna stock assessment peer review workshop. The workshop was requested by the SC in 2021 and endorsed by the Commission in 2022. The workshop was held from 6 – 10 February in Rome, Italy. The objectives were to undertake, in consultation with the stock assessment expert from the IOTC as well as IOTC WPTT, WPM and SC chairs and vice-chairs, a peer review of the 2021 yellowfin stock assessment in the Indian Ocean (IOTC) and based on the review work provide recommendations for improving the assessment, including data inputs, model configuration, biological parameters, modelling approaches and treatment of uncertainty. The report of this workshop was presented to the WPTT in late 2023. Funding was provided via Grants provided by the EU.

Bigeye thresher shark tagging: A consortium has been established to work jointly on a tagging project to evaluate the post-release mortality of bigeye thresher sharks and the effectiveness of the no retention measure in Resolution 12/09. Scientists are working with observers to deploy tags on sharks released according to routine practices from the fleets of Japan, China, Taiwan,China, EU,Portugal, EU,France and South Africa. Fifty-four pop-up archival satellite tags have been purchased and are in the process of being deployed. An update was provided in IOTC-2023-WPEB19-19.

Skipjack tuna stock assessment: The IOTC stock assessment scientist carried out a stock assessment of skipjack tuna (1950-2022) using stock synthesis III. The results indicated that the stock is currently not overfished nor subject to overfishing. The updated skipjack assessment was used to provide input for the skipjack Harvest Control Rule adopted in Res 21/03 to determine the catch limit for 2024-2026.

Swordfish assessment: The IOTC stock assessment scientist carried out a stock assessment of swordfish (1950-2022) using stock synthesis III. The results for the Swordfish assessment indicated that the stock is currently not overfished nor is it subject to overfishing.

Neritic tuna assessment: The IOTC stock assessment scientist carried out stock assessments of three neritic tuna species including longtail tuna, Spanish mackerel, and kawakawa (1950-2022) using several data limited methods. The results for the longtail tuna assessment indicated that the stock is currently overfished and is subject to overfishing; The results for the Spanish mackerel assessment indicated that the stock is currently overfished and is subject to overfishing; The results for the kawakawa assessment indicated that the stock is currently overfished but is not subject to overfishing.

Neritic tuna CPUE Standardisation workshop: The IOTC stock assessment scientist and the SC chair conducted a CPUE training workshop for the WPNT participants (on the first day of the WPNT meeting). The purpose of the workshop was to assist CPCs in building their capacity to undertake CPUE analysis. It also intended to encourage participants to develop abundance indices from their catch effort data that can be incorporated into assessments of neritic tuna.

CAMAM workshop on good practice for tuna assessment: The IOTC stock assessment scientist has attended the CAMAM workshop on good practice for tuna assessment held in Wellington New Zealand in March. The participation was funded by ISSF.

Spatial stock assessment methods workshop: The IOTC stock assessment scientist has participated the spatial stock assessment methods workshop held in Wellington, New Zealand in March and has

collaborated with scientists from AZTI and NOAA to create a spatial assessment model for yellowfin tuna based on simulated data.

Yellowfin and bigeye tuna MSE: A Stock Assessment consultant (CSIRO) funded by a contribution from Australia conducted MSE for yellowfin and bigeye tuna. This voluntary contribution by Australia has provided ongoing funding for this work through 2023.

Skipjack MSE: A Stock Assessment consultant (Charles Edwards) funded by the IOTC regular budget, conducted MSE for skipjack tuna. The consultant is working to update the skipjack harvest control rule and develop a fully specified MP based on the updated stock assessment for the species.

Albacore and Swordfish MSE: A Stock Assessment contract with the University of Wageningen funded by the IOTC regular budget, conducted MSE for albacore tuna. The University is working to update the OM based on the updated stock assessment for albacore as well as develop an OM for Swordfish.

Alternative Monitoring of Catches: A consultant (Sarah Martin) conducted a feasibility study to assess the validity of alternative data collection mechanisms in combination with existing data collection and reporting measures for IOTC small-scale fisheries, with special consideration to pilots being implemented by IOTC CPCs in the Indian Ocean. The results of the study were presented to the WPDCS in 2023.

Tropical Tuna CPUE Standardisation and effort creep: A consultant (Simon Hoyle) conducted a study to provide advice to analysts developing CPUE indices for IOTC stock assessments. The work provided general advice to analysts developing CPUE indices for IOTC tropical tuna stock assessments.

Albacore Biological Parameters: A consultant (Simon Hoyle) conducted a desktop review of the spatiotemporal patterns in growth and reproductive variability of albacore tuna in the Indian Ocean and other oceans, to provide a better understanding of the population structure and dynamics of the species, as well as to pinpoint knowledge gaps and future research needs. The results of this study will be presented to the next meeting of the WPTmT.

CITES shark proposals: The Secretariat participated in a series of workshops to discuss how the CITES and RFMO processes could be better harmonized especially in light of the recent listing of a range of shark species in CITES Appendix II (including blue sharks).

Cetacean Ecological Risk Assessment (ERA): A consultant (Jeremy Kiszka) carried out a review of the information on cetacean bycatch in IOTC fisheries and produced an Ecological Risk Assessment for cetacean species interacting with IOTC fisheries. This included the completion of a Productivity- Susceptibility Analysis (PSA), and other appropriate analyses as part of the ERA. The report was presented to the WPEB. Funding was provided via Grants provided by the EU.

Mainstreaming climate change into international fisheries governance: The IOTC Fishery (Science) Officer participated in a FAO led workshop looking at how Regional Fisheries Bodies can integrate climate change considerations into their science and management with a focus on the Indo-Pacific region. The Fishery Officer presented on IOTC's activities in relation to climate change including current activities and initiatives, lessons learns, potential entry points and opportunities and the gaps and challenges and discussed these topics in relation to other Regional Fisheries Bodies.

Other RFMO activities

IWC Scientific Committee meeting: In 2023 the IOTC Secretariat attended the IWC SC meeting.

IOTC publications and information products

Documents

In 2023, the Secretariat (including consultants) produced 83 (91 in 2022, 77 in 2021, 59 in 2020, 71 in 2019 and 62 in 2018) papers/reports (Appendix II) in support of the IOTC Science process, not including the reports of the various working parties and working groups (12) or the species Executive Summaries (26).

IOTC Website

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.

and is in the process of linking the publicly disseminated executive summaries of all IOTC species with the corresponding entries in the FAO / FIRMS stocks and fisheries map viewer as well as with the FAO / FIRMS Global Record of Stocks and Fisheries (GRSF) to enhance information sharing and standardized access to stock statuses and related resources. In addition, new pages were added to the IOTC webpage in 2020 to provide information on the various projects overseen and coordinated by the IOTC secretariat and a new page was created in 2022 to provide capacity building tools for MSE.

Recommendation

That the Scientific Committee **NOTE** paper IOTC–2023–SC26–05 which provides the report of the IOTC Secretariat for 2023.

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 2022.

Appendix III: IOTC Extra-Budgetary Funded Projects related to science

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 Toshihide Kitakado	Japan	10–Dec–19	End of SC in 2023	2nd term
	Vice-Chair	Vacant	Vacant	NA	NA	NA
WPB	Chair	Dr Jie Cao	China	08–Sep–23	End of WPB in 2025	1st term
	Vice-Chair	Dr Sylvain Bonhommeau	EU,France	08–Sep–23	End of WPB in 2025	1st term
WPTmT	Chair	Dr Toshihide Kitakado	Japan	29–July–22	End of WPTmT in 2028	1st term
	Vice-Chair	Dr Jiangfeng Zhu	China	29–July–22	End of WPTmT in 2028	1st term
WPTT	Chair	Dr Gorka Merino	EU,Spain	03–Nov–23	End of WPTT in 2025	Ext 2nd term
	Vice-Chair	Dr Shiham Adam	IPNLF	03–Nov–23	End of WPTT in 2025	Ext 2nd term
WPEB	Chair	Dr Mariana Tolotti	EU,France	15–Sept–21	End of WPEB in 2025	2nd term
	1st Vice-Chair	Dr Mohamed Koya	India	15–Sept–21	End of WPEB in 2025	2nd term
	2nd Vice-Chair	Dr Charlene da Silva	South Africa	15–Sept–21	End of WPEB in 2025	2nd term
WPNT	Chair	Dr Farhad Kaymaram	I.R. Iran	7–July–23	End of WPNT in 2025	1st term
	Vice-Chair	Mr Bram Setyadji	Indonesia	7–July–23	End of WPNT in 2025	1st term
WPDCS	Chair	Dr Julien Barde	EU,France	3–Dec–21	End of WPDCS in 2023	1st term
	Vice-Chair	Mr Nuwan Gunawardane	Sri Lanka	3–Dec–21	End of WPDCS in 2023	1st term
WPM	Chair	Dr Hilario Murua	ISSF	28–Oct–23	End of WPM in 2025	Ext 2nd term
	Vice-Chair	Dr Ann Preece	Australia	28-Oct-23	End of WPM in 2025	1st term
WGFAD	Co-Chair	Dr Gorka Merino	EU,Spain	06-Oct-21	End of WGFAD in 2024	1st term
	Co-Chair	Mr Avelino Munwane	Mozambique	03-Oct-22	End of WGFAD in 2024	1st term
WGEMS	Chair	Dr Hilario Murua	ISSF	17-Nov-21	End of WGEMS in 2024	1st term
	Vice-Chair	Dr Don Bromhead	Australia	17-Nov-21	End of WGEMS in 2024	1st term

APPENDIX II

Papers from the IOTC Secretariat (or co-authorship) submitted to the IOTC Working Parties or Scientific Committee in 2023

Document number	Title
4th Working Group on FADs	
IOTC-2023-WGFAD04-03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC-2023-WGFAD04-04	Outcomes of the 6th Special Session and 27th Session of the Commission (IOTC Secretariat)
IOTC-2023-WGFAD04-05	Review of the statistical data on FADs (IOTC Secretariat)
5th Working Group on FADs	
IOTC-2023-WGFAD05-03	Review of the statistical data on FADs (IOTC Secretariat)
IOTC-2023-WGFAD05-04	Assessing the response of Indian Ocean yellowfin tuna (Thunnus albacares) stocks to variations in DFAD fishing effort (Tidd A, Capello M, Guillotreau P, Fu D)
14th Working Party on Methods Management Strategy Evaluation Task Force (WPM/MSE)	
IOTC–2023–WPM14(MSE)–03	Initial robustness trial of empirical MPs for Indian Ocean skipjack tuna (Edwards C)
25th Working Party on Tropical Tuna (WPTT): Data preparatory meeting	
IOTC–2023–WPTT25(DP)-03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2023–WPTT25(DP)–04	Outcomes of the 6th Special Session and 26th Session of the Commission (IOTC Secretariat)
IOTC–2023–WPTT25(DP)-05	Review of Conservation and Management Measures relevant to tropical tuna (IOTC Secretariat)
IOTC–2023–WPTT25(DP)-06	Progress made on the recommendations of WPTT24 (IOTC Secretariat)
IOTC–2023–WPTT25(DP)–07.1 IOTC–2023–WPTT25(DP)–07.2	Overview of Indian Ocean tropical tuna fisheries Review of Indian Ocean skipjack tuna statistical data
IOTC–2023–WPTT25(DP)-INF01	Review of Indian Ocean bigeye tuna statistical data (IOTC Secretariat)
IOTC–2023–WPTT25(DP)-INF02	Review of Indian Ocean yellowfin tuna statistical data (IOTC Secretariat)
13th Session of the IOTC Working Party on Neritic Tunas	
IOTC–2023–WPNT13–03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2023–WPNT13–04	Outcomes of the 26th Session of the Commission (IOTC Secretariat)
IOTC–2023–WPNT13–05	Review of current Conservation and Management Measures relating to neritic tuna species (IOTC Secretariat)
IOTC–2023–WPNT13–06	Progress made on the recommendations and requests of WPNT12 and SC25 (IOTC Secretariat)
IOTC–2023–WPNT13-07	Review of the statistical data available for the neritic tuna species (IOTC Secretariat)
IOTC–2023–WPNT13–08	Revision of the WPNT Program of Work (2024–2028) (IOTC Secretariat)
IOTC-2023-WPNT13-14	Assessment of Indian Ocean longtail tuna (*Thunnus tonggol*) using data-limited methods (D. Fu)
IOTC-2023-WPNT13-15	Assessment of Indian Ocean kawakawa (*Euthynnus affinis*) using data-limited methods (D. Fu)
IOTC-2023-WPNT13-16	Assessment of Indian Ocean narrow-barred Spanish mackerel (*Scomberomorus commerson*) using data-limited methods (D. Fu)
19th Working Party on Ecosystems and Bycatch (WPEB)	
IOTC-2023-WPEB19-03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC-2023-WPEB19-04	Outcomes of the 27th Session of the Commission (IOTC Secretariat)
IOTC-2023-WPEB19-05	Review of Conservation and Management Measures relevant to ecosystems and bycatch (IOTC Secretariat)
IOTC-2023-WPEB19-06	Progress made on the recommendations and requests of WPEB18 and SC25 (IOTC Secretariat)
IOTC-2023-WPEB19-07_rev2	Review of the statistical data and fishery trends for ecosystems and bycatch species (IOTC Secretariat)

IOTC-2023-WPEB19-08_rev1	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-2023-WPEB19-09	Revision of the WPEB Program of Work (2024–2028) (IOTC Secretariat & Chairperson)
IOTC-2023-WPEB19-24	Ecological risk assessment of cetaceans to Indian Ocean tuna fisheries (J. Kiszka)
IOTC-2023-WPEB19-INF38	Global governance guard rails for sharks: Progress towards implementing the United Nations international plan of action (E. Gilman, M. Chaloupka, N. Taylor, L. Nelson, K. Friedman and H. Murua)
21st Session of the IOTC Working Party on Billfish	
IOTC-2023-WPB21-03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC-2023-WPB21-04	Outcomes of the 27th Session of the Commission (IOTC Secretariat)
IOTC-2023-WPB21-05	Review of Conservation and Management Measures relevant to billfish (IOTC Secretariat)
IOTC-2023-WPB21-06	Progress made on the recommendations and requests of WPB20 and SC25 (IOTC Secretariat)
IOTC-2023-WPB21-07	Review of the statistical data and fishery trends for billfish species (IOTC Secretariat)
IOTC-2023-WPB21-08	Revision of the WPB Program of Work (2024-2028) (IOTC Secretariat)
IOTC-2023-WPB21-19	Indian Ocean Swordfish Stock Assessment 1950-2021 (Stock Synthesis) (Fu D)
14th Working Party on Methods	
IOTC–2023–WPM14–03	Outcomes of the 25th Session of the Scientific Committee (IOTC Secretariat)
IOTC–2023–WPM14–04	Outcomes of the 27th Session of the Commission (IOTC Secretariat)
IOTC–2023–WPM14–05	Review of Conservation and Management Measures relating to methods (IOTC Secretariat)
IOTC–2023–WPM14–06	Progress made on the recommendations and requests of WPM13 and SC25 (IOTC Secretariat)
IOTC–2023–WPM14–07	Revision of the WPM Program of Work (2024–2028) (IOTC Secretariat & Chairpersons)
IOTC–2023–WPM14–13	Conditioning IOTC Albacore OMs using the ABC approach (Hillary R, Mosqueira I)
IOTC–2023–WPM14–14	IOTC Swordfish Management Strategy Evaluation Update (Brunel T, Mosqueira I)
IOTC–2023–WPM14–15	Effort creep in tuna fishery stock assessments: preliminary investigation (Hoyle S)
IOTC–2023–WPM14–16	Status of the Skipjack OM (Edwards C)
25th Session of the Working Party on Tropical Tunas: Assessment Meeting	
IOTC–2023–WPTT25–04	Outcomes of the 27th Session of the Commission (IOTC Secretariat)
IOTC–2023–WPTT25-05	Revision of the WPTT program of work (IOTC Secretariat)
IOTC–2023–WPTT25–09	Indian ocean skipjack tuna stock assessment 1950-2022 (stock synthesis) (Fu D)
IOTC–2023–WPTT25-12	An investigation of the recruitment dynamics of Indian Ocean yellowfin tuna (Langley A)
IOTC–2023–WPTT25-13	Independent review of recent IOTC yellowfin tuna assessment (Maunder M, Langley A, Howell D, Minte-Vera C)
IOTC–2023–WPTT25-INF05	Review of Indian Ocean bigeye tuna statistical data (IOTC Secretariat)
IOTC–2023–WPTT25-INF06	Review of Indian Ocean yellowfin tuna statistical data (IOTC Secretariat)
19th Working Party on Data Collection and Statistics	
IOTC-2023-WPDCS19-03	Outcomes of the 25th session of the Scientific Committee (IOTC Secretariat)
IOTC-2023-WPDCS19-04	Outcomes of the 27th session of the Commission (IOTC Secretariat)
IOTC-2023-WPDCS19-05	Review of current Conservation and Management Measures relating to the WPDCS (IOTC Secretariat)
IOTC-2023-WPDCS19-06	Progress made on the recommendations of WPDCS18 (IOTC Secretariat)
IOTC-2023-WPDCS19-07	Report on IOTC Data Collection and Statistics (IOTC Secretariat)
IOTC-2023-WPDCS19-08	IOTC capacity building activities in support of developing coastal CPCs (IOTC Secretariat)
IOTC-2023-WPDCS19-09	Revision of the WPDCS Program of Work 2024–2025 (IOTC Secretariat)
IOTC-2023-WPDCS19-10	Updates on the implementation of the IOTC Regional Observer Scheme and its pilot project (IOTC Secretariat)
IOTC-2023-WPDCS19-11	Updated calculations of yellowfin tuna catch limits for 2023 / 2024 (IOTC Secretariat)
IOTC-2023-WPDCS19-12	Summary of updates on data-related requests from other Working Parties (IOTC Secretariat)
IOTC-2023-WPDCS19-13	Alternative methods to improve data collection in IOTC coastal fisheries: progress, pitfalls and priorities (Martin S)
IOTC-2023-WPDCS19-14	Further updates on the IOTC data reporting forms (IOTC Secretariat)
IOTC-2023-WPDCS19-15	Online tools for the validation of data submissions (IOTC Secretariat)

IOTC-2023-WPDCS19-16	Revised IOTC forms for the provision of detailed interactions with drifting floating objects (IOTC Secretariat)
IOTC-2023-WPDCS19-17	A proposal for new IOTC forms for the provision of detailed interactions with anchored floating objects (IOTC Secretariat)
IOTC-2023-WPDCS19-18	Benefits of assigning DOIs to IOTC documents and data (Barde J, IOTC Secretariat)
IOTC-2023-WPDCS19-23	Updated results on the implementation of the FAO matrix approach for the characterization of selected IOTC fisheries (IOTC Secretariat)
IOTC-2023-WPDCS19-28	Updated guidelines for the reporting of fisheries statistics to the IOTC (IOTC Secretariat)
IOTC-2023-WPDCS19-29	Proposal for a technical data workshop to support the reporting of fisheries statistics to the IOTC (IOTC Secretariat)
26th Session of the Scientific Committee	
IOTC–2023–SC26–03	Outcomes of the 27th Session of the Commission (IOTC Secretariat)
IOTC–2023–SC26–04	Previous decisions of the Commission (IOTC Secretariat)
IOTC–2023–SC26–05	Report of the Secretariat – Activities in support of the IOTC science process in 2023 (IOTC Secretariat)
IOTC–2023–SC26–06	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–2023–SC26–07	Update on the implementation of the regional observer scheme (IOTC Secretariat)
IOTC–2023–SC26–08	Revision of the program of work (2024–2028) for the IOTC science process (IOTC Secretariat)
IOTC–2023–SC26–09	Proposed schedule of Working Party and Scientific Committee meetings for 2024 and 2025 (IOTC Secretariat)
IOTC–2023–SC26–10	Progress on SC25 recommendations (IOTC Secretariat)

APPENDIX III
IOTC Extra-Budgetary Funded Projects related to Science

Project No.	Area of Work	Donor	Description	Total Funding Amount US$	Start Date	End date
GCP/INT/1024/EC	Science	EC	Support to the IOTC Scientific and Compliance Committees programmes of work (2023 and 2024)	797,646	01/01/2023	31/12/2024
MPF Extra-budgetary	Meetings	China	Extra funds for meeting participation	18,000	01/01/2023	31/12/2023
Extra-budgetary	Science/Data	UK	Activities related to data improvement and data analysis	60,533	01/04/2023	31/12/2024