Report of the 17th Session of the IOTC Working Party on Methods

Tenerife, 26 - 27 October 2026

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ACRONYMS

ABNJ	Areas Beyond National Jurisdiction
ALB	Albacore
B	Biomass (total)
B_0	Unfished biomass
BET	Bigeye tuna
B_{MSY}	Biomass which produces MSY
CMM	Conservation and Management Measure (of the IOTC; Resolutions and Recommendations)
CPCs	Contracting parties and cooperating non-contracting parties
CPUE	Catch per unit of effort
current	Current period/time, i.e. $F_{current}$ means fishing mortality for the current assessment year.
ETP	Endangered, threatened and protected
F	Fishing mortality
FAD	Fish aggregating device
FOB	Floating Object
F_{MSY}	Fishing mortality at MSY
IOTC	Indian Ocean Tuna Commission
MP	Management Procedure
MPD	Management Procedures Dialogue
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
OM	Operating Model
P	Probability
SC	Scientific Committee, of the IOTC
SB	Spawning biomass (sometimes expressed as SSB)
SB_{MSY}	Spawning stock biomass which produces MSY (sometimes expressed as SSB_{MSY})
SKJ	Skipjack tuna
SWO	Swordfish
TCMP	Technical Committee on Management Procedures
WPM	Working Party on Methods
WPNT	Working Party on Neritic Tunas
WPTT	Working Party on Tropical Tunas of the IOTC
YFT	Yellowfin tuna

GLOSSARY OF TERMS

The WPM decided to utilise the MSE Glossary developed by the Joint Tuna RFMO MSE Working Group in 2018**.**

Average Annual Variation - (in catch/TAC) The absolute value of the proportional TAC change each year, averaged over the projection period.

Biomass - Stock biomass, which may refer to various components of the stock. Often spawning stock biomass (SSB) of females is used, as the greatest conservation concern is to maintain the reproductive component of the resource.

Candidate Management Procedure - An MP (defined below) that has been proposed, but not yet adopted.

Conditioning - The process of fitting an Operating Model (OM) of the resource dynamics to the available data on the basis of some statistical criterion, such as a Maximum Likelihood. The aim of conditioning is to select those OMs consistent with the data and reject OMs that do not fit these data satisfactorily and, as such, are considered implausible.

Error - Differences, primarily reflecting uncertainties in the relationship between the actual dynamics of the resource (described by the OMs) and observations. Four types of error may be distinguished, and simulation trials may take account of one or more of these:

- Estimation error: differences between the actual values of the parameters of the OM and those provided by the estimator when fitting a model to the available data;
- Implementation error: differences between intended management actions (as output by an MP) and those actually achieved (e.g. reflecting over-catch);
- Observation error (or measurement error): differences between the measured value of some resource index and the corresponding value calculated by the OM;
- Process error: natural variations in resource dynamics (e.g., fluctuations about a stock-recruitment curve or variation in fishery or survey selectivity /catchability).

Estimator - The statistical estimation process within a population model (assessment or OM); in a Management Strategy Evaluation (MSE) context, the component that provides information on resource status and productivity from past and generated future resource-monitoring data for input to the Harvest Control Rule (HCR) component of an MP in projections.

Exceptional circumstances - Specifications of circumstances (primarily related to future monitoring data falling outside the range covered by simulation testing) where overriding of the output from a Management Procedure should be considered, together with broad principles to govern the action to take in such an event.

Feedback Control - Rules or algorithms based, directly or indirectly, on trends in observations of resource indices, which adjust the management actions (such as a TAC change) in directions that will change resource abundance towards a level consistent with decision makers' objectives.

Harvest Control Rule - (also Decision Rule) A pre-agreed and well-defined rule or action(s) that describes how management should adjust management measures in response to the state of specified indicator(s) of stock status. This is described by a mathematical formula.

Harvest Strategy - Some combination of monitoring, assessment, harvest control rule and management action designed to meet the stated objectives of a fishery. Sometimes referred to as a Management Strategy (see below). A fully specified harvest strategy that has been simulation tested for performance and adequate robustness to uncertainties is often referred to as a Management Procedure.

Implementation - The practical application of a Harvest Strategy to provide a resource management recommendation.

Kobe Plot - A plot that shows the current stock status, or a trajectory over time for a fished population, with abundance on the horizontal axis and fishing mortality on the vertical axis. These are often shown relative to BMSY and to FMSY, respectively. A Kobe plot is often divided into four quadrants by a vertical line at B=BMSY and a horizontal line at F=FMSY.

Limit Reference Point - A level of biomass below, or fishing mortality above, which an actual value would be considered undesirable, and which management action should seek to avoid.

Management Objectives - The social, economic, biological, ecosystem, and political (or other) goals for a given management unit (i.e. stock). These typically conflict, and include concepts such as maximising catches over time, minimising the chance of unintended stock depletion, and enhancing industry stability through low inter-annual variability in catches. For the purposes of Management Strategy Evaluation (MSE) these objectives need to be quantified in the form of Performance statistics (see below).

Management Plan - In a broad fisheries governance context, a Management Plan is the combination of policies, regulations and management approaches adopted by the management authority to reach established societal

objectives. The management plan generally includes the combination of policy principles and forms of management measures, monitoring and compliance that will be used to regulate the fishery, such as the nature of access rights, allocation of resources to stakeholders, controls on inputs (e.g. fishing capacity, gear regulations), outputs (e.g. quotas, minimum size at landing), and fishing operations restrictions (e.g. closed areas and seasons). Ideally, the Management Plan will also include the Harvest Strategy for the fishery or a set of principles and guidelines for the specification, implementation and review of a formal Management Procedure for target and non-target species.

Management Procedure - A management procedure has the same components as a harvest strategy. The distinction is that each component of a Management Procedure is formally specified, and the combination of monitoring data, analysis method, harvest control rule and management measure has been simulation tested to demonstrate adequately robust performance in the face of plausible uncertainties about stock and fishery dynamics.

Management Strategy - Synonymous with harvest strategy. (But note that this is also used with a broader meaning in a range of other contexts.)

Management Strategy Evaluation - A process whereby the performances of alternative harvest strategies are tested and compared using stochastic simulations of stock and fishery dynamics against a set of performance statistics developed to quantify the attainment of management objectives.

Maximum Economic Yield - The (typically annual) yield that can be taken continuously from a stock sustainably (i.e. without reducing its size) that maximizes the economic yield of a fishery in equilibrium. This yield occurs at the effort level that creates the largest positive difference between total revenues and total costs of fishing (including the cost of labor, capital, management and research etc.), thus maximizing profits.

Maximum Sustainable Yield - The largest (typically annual) yield that can be taken continuously from a stock sustainably (i.e. without reducing its size). In real, and consequently stochastic situations, this is usually estimated as the largest average long-term yield that can be obtained by applying a constant fishing mortality F, where that F is denoted as FMSY.

Observation Model - The component of the OM that generates fishery-dependent and/or fishery-independent resource monitoring data from the underlying true status of the resource provided by the OM, for input to an MP.

Operating Model(s) - A mathematical–statistical model (usually models) used to describe the fishery dynamics in simulation trials, including the specifications for generating simulated resource monitoring data when projecting forward in time. Multiple models will usually be considered to reflect the uncertainties about the dynamics of the resource and fishery.

Performance statistics/measures - A set of statistics used to evaluate the performance of Candidate MPs (CMPs) against specified management objectives, and the robustness of these MPs to important uncertainties in resource and fishery dynamics.

Plausibility (weights) - The likelihood of a scenario considered in simulation trials representing reality, relative to other scenarios also under consideration. Plausibility may be estimated formally based on some statistical approach, or specified based on expert judgement, and can be used to weight performance statistics when integrating over results for different scenarios (OMs).

Precautionary Approach - An approach to resource management in which, where there are threats of serious irreversible environmental damage, lack of full scientific certainty is not used as a reason for postponing cost-effective measures to prevent environmental degradation.

Reference case - (also termed reference scenario or base case) A single, typically central, conditioned OM for evaluating Candidate MPs (CMPs) that provides a pragmatic basis for comparison of performance statistics of the CMPs.

Reference set - (also termed base-case or evaluation scenarios) A limited set of scenarios, with their associated conditioned OMs, which include the most important uncertainties in the model structure, parameters, and data (i.e. alternative scenarios which have both high plausibility and major impacts on performance statistics of Candidate MPs).

Research-conditional option - Temporary application of an MP that does not satisfy conservation performance criteria, accompanied by both a research programme to check the plausibility of the scenarios that gave rise to this poor performance and an agreed subsequent reduction in catches should the research prove unable to demonstrate implausibility.

Robustness tests - Tests to examine the performance of an MP across a full range (i.e. beyond the range of the Reference Set of models alone) of plausible scenarios. While plausible, robustness test OMs are typically considered to be less likely than the reference set OMs, and often focus on particularly challenging circumstances with potentially negative consequences to be avoided.

Scenario- A hypothesis concerning resource status and dynamics or fishery operations, represented mathematically as an OM.

Simulation trial/test - A computer simulation to project stock and fishery dynamics for a particular scenario forward for a specified period, under controls specified by a HS or MP, to ascertain the performance of that HS or MP. Such projections will typically be repeated a large number of times to capture stochasticity.

Spawning Biomass, initial - Initial spawning biomass prior to fishing as estimated from a stock assessment.

Spawning Biomass, current - Spawning biomass (SSB) in the last year(s) of the stock assessment.

Spawning Biomass at MSY - The equilibrium spawning biomass that results from fishing at FMSY. In the presence of recruitment variability, fishing a stock at FMSY will result in a biomass that fluctuates above and below SSBMSY.

Stationarity - The assumption that population parameter values are fixed (at least in expectation), and not varying systematically, over time. This is a standard assumption for many aspects of stock assessments, OMs and management plans.

Stock assessment - The process of estimating stock abundance and the impact of fishing on the stock, similar in many respects to the process of conditioning OMs.

Target Reference Point - The point which corresponds to a state of a fishery and/or resource which is considered desirable and which management aims to achieve.

Trade-offs - A balance, or compromise, achieved between desirable but conflicting objectives when evaluating alternative MPs. Trade-offs arise because of the multiple objectives in fisheries management and the fact that some objectives conflict (e.g. maximizing catch vs minimizing risk of unintended depletion).

Tuning - The process of adjusting values of control parameters of the Harvest Control Rule in a Management Procedure to achieve a single, precisely-defined performance statistic in a specified simulation test. This reduces confounding effects to allow the performance of different candidate MPs to be compared more readily with respect to other management objectives. For example, in the case of evaluating rebuilding plans, all candidate MPs might be tuned to meet the rebuilding objective for a specified simulation trial; then the focus of comparisons among MPs is performance and behaviour with respect to catch and CPUE dimensions.

Weight(s) - Either qualitative (e.g. high, medium, low) or quantitative measures of relative plausibility accorded across a set of scenarios.

Worm plot - Time series plots showing a number of possible realizations of simulated projections of, for example, catch or spawning biomass under the application of an MP for a specific OM or weighted set of OMs.

STANDARDISATION OF IOTC WORKING PARTY AND SCIENTIFIC COMMITTEE REPORT TERMINOLOGY

SC16.07 (para. 23) The SC **ADOPTED** the reporting terminology contained in Appendix IV and **RECOMMENDED** that the Commission considers adopting the standardised IOTC Report terminology, to further improve the clarity of information sharing from, and among its subsidiary bodies.

HOW TO INTERPRET TERMINOLOGY CONTAINED IN THIS REPORT

Level 1: ***From a subsidiary body of the Commission to the next level in the structure of the Commission:***
RECOMMENDED, RECOMMENDATION: Any conclusion or request for an action to be undertaken, from a subsidiary body of the Commission (Committee or Working Party), which is to be formally provided to the next level in the structure of the Commission for its consideration/endorsement (e.g. from a Working Party to the Scientific Committee; from a Committee to the Commission). The intention is that the higher body will consider the recommended action for endorsement under its own mandate, if the subsidiary body does not already have the required mandate. Ideally this should be task specific and contain a timeframe for completion.

Level 2: ***From a subsidiary body of the Commission to a CPC, the IOTC Secretariat, or other body (not the Commission) to carry out a specified task:***
REQUESTED: This term should only be used by a subsidiary body of the Commission if it does not wish to have the request formally adopted/endorsed by the next level in the structure of the Commission. For example, if a Committee wishes to seek additional input from a CPC on a particular topic, but does not wish to formalise the request beyond the mandate of the Committee, it may request that a set action be undertaken. Ideally this should be task specific and contain a timeframe for the completion.

Level 3: ***General terms to be used for consistency:***
AGREED: Any point of discussion from a meeting which the IOTC body considers to be an agreed course of action covered by its mandate, which has not already been dealt with under Level 1 or level 2 above; a general point of agreement among delegations/participants of a meeting which does not need to be considered/adopted by the next level in the Commission's structure.
NOTED/NOTING: Any point of discussion from a meeting which the IOTC body considers to be important enough to record in a meeting report for future reference.

Any other term: Any other term may be used in addition to the Level 3 terms to highlight to the reader of an IOTC report, the importance of the relevant paragraph. However, other terms used are considered for explanatory/informational purposes only and shall have no higher rating within the reporting terminology hierarchy than Level 3, described above (e.g. **CONSIDERED**; **URGED**; **ACKNOWLEDGED**).

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EXECUTIVE SUMMARY

The 17th Session of the Indian Ocean Tuna Commission's (IOTC) Working Party on Methods (WPM) was held in Institute of Oceanography, Tenerife, Spain, 26-27 October 2026. A total of 34 participants (47 in 2025, 42 in 2024, 46 in 2023, 60 in 2022 attended the Session either in person (22) or online (12). The list of participants is provided in Appendix I. The meeting was opened by the Chairperson, Dr Ann Preece (Australia) who welcomed participants.

The following are the recommendations from the WPM17 to the Scientific Committee, and key outcomes of the WPM, which are provided in Appendix V.

Review of intersessional meetings related to the IOTC MSE process

WPM17.01 (Para 12): The WPM **THANKED** the participants of the Working Party on Methods Management Strategy Evaluation Task Force meeting for their informative discussions and input on the technical aspects of MSE and related topics. The WPM **NOTED** that the output of this meeting remains very important to the WPM as it provides an informal forum for the highly technical discussions necessary to advance the MSE process in IOTC for which there is insufficient time during the WPM meeting. The WPM further **RECOMMENDED** that the SC endorse the inclusion of this meeting in the schedule of meetings for 2027.

Skipjack tuna MP (Resolution 24/07)

WPM17.02 (Para 37): The WMP **NOTED** that the reported catch in 2025 was above both the TAC for 2025 and recommended TAC for 2026-2029 and further **NOTED** that robustness testing indicated that MP performance degraded in the presence of overcatch and reduced the probability of meeting management objectives. The WPM **CONSIDERED** this overcatch an exceptional circumstance and **RECOMMENDED** that the Commission take steps to ensure future catches are maintained within the TAC.

Bigeye tuna MP (Resolution 22/03)

WPM17.03 (Para 50): The WPM **NOTED** that catch in 2024 and 2025 exceeded the agreed TAC in resolution 23/04, which may negatively impact the stock. The WPM **NOTED** the uncertainty in catches and changes in catch reporting. The WPM **RECOMMENDED** that the Commission and compliance committee review the catches, enact appropriate mechanisms in resolution 23/04, and ensure total catches are below the TAC.

Swordfish MP (Resolution 24/08)

WPM17.04 (Para 62): The WPM **AGREED** with the WPB conclusions and recommendations (specified in paragraphs 165 and 166 of IOTC–2026–WPB24–R[E]) but provided the following additional advice. The WPM **RECOMMENDED** that the Commission:

- *Consider the recent absence (and possible future absence) of fishing effort by Japanese longline vessels in the Northwest Indian Ocean to represent an Exceptional Circumstance, one which presents a significant risk to the continued future application of the MP.*
- *Note that the WPM, upon reviewing risks to the future use of the MP, agreed on the need to redevelop and test a revised version of the current MP or new candidate MPs for IOTC Swordfish.*
- *Endorse and provide the required support to the development and testing, over the next 2-3 years, of a revised version of the current MP or alternate candidate MPs for IOTC Swordfish.*
- *Note that this issue does not, by itself, affect the current implementation of the Management Procedure, through the adopted TAC for 2027 and 2028 as per Resolution 26/02 (due to those TACs being based on an MP run utilising a Japanese LL CPUE index that did not have missing values for recent years). This conclusion remains subject to the annual review of exceptional circumstances.*

WPM17.05 (Para 63): The WPM further **RECOMMENDED** that the SC:

- *Task the WPM (including MSE Taskforce) to explore and provide advice on whether there are options to run the existing MP in 2027 to generate TAC advice for the 2029-2031 management cycle, noting that it*

is very unlikely that redevelopment, testing and adoption of a revised or a new MP by the Commission will be completed in time to set TACs for that period.

- Consider tasking the WPM to develop alternative options for advising the Commission on TAC levels for swordfish in case the workplan above is delayed or unsuccessful.
- *Prioritize the development of a workplan for revising the adopted MP (for example with an alternate CPUE index) and/or developing and testing alternate candidate MPs. These can include if appropriate both model based and empirical MPs. Candidate MPs using CPUE based HCRs should be based on CPUEs derived from fleets or areas, or combinations thereof, that minimise the risk of missing CPUE time series data points in future.*

Revision of the WPM Program of work (2027–2031)

WPM17.06 (Para 148): The WPM **RECOMMENDED** that the Scientific Committee consider and endorse the WPM Programme of Work (2027–2031), as provided in Appendix IV.

Date and place of the 18th and 19th sessions of the WPM

WPM17.07 (Para 149): The WPM **RECOMMENDED** that the SC consider mid-to-late October 2027 as the preferred period to hold the WPM18. The WPM **AGREED** that the meeting should continue to be held back-to-back with the WPTT. In view of the heavy agenda, in particular the need to cover MSE work for several species and undertake a review of the juvenile tropical tuna abundance indices, the WPM **RECOMMENDED** that the duration of the meeting be extended from two to three days.

WPM17.08 (Para 152): In view of the status of the albacore and blue shark MSE, and the potential progress that may be achieved in the coming months, the WPM **RECOMMENDED** that an extra TCMP meeting in January 2027 is not organized.

Review of the draft, and adoption of the Report of the 17th Session of the WPM

WPM17.09 (Para 153): The WPM **RECOMMENDED** that the Scientific Committee consider the consolidated set of recommendations arising from WPM17, provided in Appendix V

1. OPENING OF THE MEETING

1. The 17th Session of the Indian Ocean Tuna Commission's (IOTC) Working Party on Methods (WPM) was held in Institute of Oceanography, Tenerife, Spain, 26-27 October 2026. A total of 34 participants (47 in 2025, 42 in 2024, 46 in 2023, 60 in 2022 attended the Session either in person (22) or online (12). The list of participants is provided in Appendix I. The meeting was opened by the Chairperson, Ann Preece (Australia) who welcomed participants.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

2. The WPM **ADOPTED** the Agenda provided at Appendix II. The documents presented to the WPM17 are listed in Appendix III.

3. THE IOTC PROCESS: OUTCOMES, UPDATES AND PROGRESS

3.1 Outcomes of the 28th Session of the Scientific Committee

3. The WPM **NOTED** paper IOTC–2026–WPM17–03 which outlined the main outcomes of the 28th Session of the Scientific Committee (SC28), specifically related to the work of the WPM.

4. The WPM **NOTED** that in 2025, the SC made a number of endorsements and recommendations in relation to the WPM16 report. These are provided below for reference:

Report of the 16th Session of the Working Party on Methods (WPM16)

203. The SC **NOTED** the report of the 16th Session of the Working Party on Methods (IOTC–2025–WPM16–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 47 participants (cf. 46 in 2024). Six participants received funding through the MPF funding.

Blue shark MP

204. The SC **NOTED** that the work of blue shark (BSH) MSE process has started, and that initial results suggest that both TAC- and length-based Management Procedures should be tested. The SC **ENDORSED** the plan of work for BSH, with results to be presented first to the MSE Taskforce, followed by the TCMP and then presented to the Commission for consideration.

Bigeye tuna MP (Resolution 22/03)

205. The SC **NOTED** that 2024 catch of bigeye tuna (82,874 t) has exceeded the 2024 TAC (80,583 t), which is an exceptional circumstance, and as such, the SC **RECOMMENDED** that the Commission should ensure that the appropriate provisions (e.g., in paragraphs 4, 5 and 8) of 23/04 are implemented to ensure catches remain inside the TAC, conditional on the allowances and requirements of those provisions

Skipjack tuna MP (Resolution 24/07)

206. The SC **NOTED** the 2025 running of the SKJ MP **NOTING** that the this generated an unconstrained TAC of 528,130 t, which is >10% lower than the TAC set for 2024–2026. By applying the maximum 10% decrease in the TAC as per Resolution 24/07, the SC **RECOMMENDED** the Commission to adopt the TAC for skipjack tuna of 565,745 t. per year for 2027–2029.

Swordfish tuna MP (Resolution 24/08)

207. The SC **RECOMMENDED** that the Commission urgently propose and adopt the TAC for swordfish resulting from the MP (Resolution 24/08, now superseded by 25/07) in 2026.

General MSE issues

208. The SC **NOTED** that there are confidentiality agreements between longline countries and various tuna RFMO Secretariats regarding the use of operational data (such as those in place with the WCPFC and IATTC) and NOTING the provisions to ensure confidentiality of the operational data submitted to the Secretariat in IOTC Resolution 12/02, the SC **RECOMMENDED** that the Commission explore potential arrangements between longline-fleet CPCs and the IOTC Secretariat, under strict confidentiality rules (similar to those outlined in Resolution 12/02), so that the Secretariat can use operational data and

participate in, as well as support, the development of the joint longline CPUE index. The SC further **RECOMMENDED** exploring similar arrangements for other fleets.

5. The WPM **NOTED** that the Joint RFMO Longline CPUE Workshop took place in Yokohama, Japan, on 12–16 October 2026. The WPM **NOTED** that several WPM participants had attended the workshop and could provide feedback on its outcomes (see Section 11).

6. The WPM **NOTED** that the Joint RFMO MSE Workshop was held in Rome, Italy, in late January 2026, and that the workshop report will soon be published by FAO.

3.2 Outcomes of the 30th Session of the Commission

7. The WPM **NOTED** paper IOTC–2026–WPM17–04 which provided the main outcomes of the 30th Session of the Commission specifically related to the work of the WPM

85. The Commission **NOTED** the significant progress made in the adoption of MPs for several IOTC species over recent years and expressed appreciation for all scientists involved in the process. The Commission **AGREED** to continue to develop robust management procedures to support science-based, precautionary, and sustainable fisheries management. **NOTING** that three species are under development, the Commission **AGREED** to support the continued development of these MPs.

142. The Commission NOTED that Maldives is planning to organise, in association with the IOTC Secretariat, another MSE training workshop, focusing on yellowfin tuna, with the aim of facilitating understanding of yellowfin MSE amongst managers at the early stage of MSE development. The Commission NOTED that both PEW and ISSF have pledged to contribute to this workshop.

3.3 Review of Conservation and Management Measures relevant to the WPM

8. The WPM **NOTED** paper IOTC–2026–WPM17–05 which aimed to encourage participants at the WPM17 to review some of the existing Conservation and Management Measures (CMM) relevant to the WPM and as necessary to 1) provide recommendations to the Scientific Committee on whether modifications may be required; and 2) recommend whether other CMMs may be required.

9. Participants in WPM17 were **ENCOURAGED** to familiarise themselves with the previously adopted Resolutions, especially those most relevant to the WPM and **AGREED** to consider how best to provide the Scientific Committee with the information it needs, in order to satisfy the Commission's requests, throughout the course of the current WPM meeting.

3.4 Progress on the recommendations of WPM16

10. The WPM **NOTED** paper IOTC–2026–WPM17–06 which provided an update on the progress made in implementing the recommendations from the previous WPM meeting which were endorsed by the Scientific Committee and **AGREED** to provide alternative recommendations during the WPM17 as appropriate given any progress.

11. The WPM **NOTED** report IOTC-2026-WPM17(MSE)-R which provided the report of the 17th Session of the IOTC Working Party on Methods Management Strategy Evaluation Task Force that took place from 23-25 March 2026.

12. The WPM **THANKED** the participants of the Working Party on Methods Management Strategy Evaluation Task Force meeting for their informative discussions and input on the technical aspects of MSE and related topics. The WPM **NOTED** that the output of this meeting remains very important to the WPM as it provides an informal forum for the highly technical discussions necessary to advance the MSE process in IOTC for which there is insufficient time during the WPM meeting. The WPM further **RECOMMENDED** that the SC endorse the inclusion of this meeting in the schedule of meetings for 2027.

13. The WPM **REQUESTED** that more detailed information be provided on the responses of the SC and the Commission to the recommendations of the WPM, for example whether they have been endorsed by the Commission, and how the Commission decided to address them. The WPM also **REQUESTED** more information on how its requests have been addressed, for example whether progress has been made, and any difficulties or requirements involved in addressing them.

4. ALBACORE MSE: UPDATE

4.1 Discussion and feedback on MSE development

14. The WPM **NOTED** paper IOTC-2026-WPM17-13 which presented an update of the Indian Ocean albacore MSE, with the following summary provided by the author:

> "*This paper describes the continuing work on the Indian Ocean albacore management strategy evaluation (MSE). Earlier phases of this work were focused on conditioning of the operating models (OMs) and some initial exploration of the performance of candidate management procedures (CMPs). This paper describes the continuing work on this MSE, including the development of a flexible MSE framework for this fishery, tuning of a set of candidate management procedures (CMPs) to alternative management objectives, and the evaluation of their performance using closed-loop simulation testing. The aims of this paper are to (i) provide an updated set of CMPs and tuning results for discussion by the Working Party on Methods (WPM), (ii) illustrate the trade-offs between catch and the risk to the stock under alternative management objectives, and (iii) identify the work needed before the CMPs can be compared for adoption. The results demonstrate that both model-based and model-free CMPs can achieve the management objectives for this fishery. However, they also highlight that the choice of the management objectives that are used in the tuning of the CMPs is more important than the structure and design of the CMPs themselves. Additionally, because more recent data are now available, which differ significantly from those data used to condition the OMs, it may be necessary to recondition the OMs before the MSE can be finalized. Feedback is required on the overall structure and design of the MSE framework, and specific decisions need to be made regarding OM reconditioning and the tuning specifications for the CMPs*"

15. The WPM **NOTED** that four types of CMP were tuned to two levels (T1: a probability of at least 0.6 of being in the Kobe green quadrant over the last 15 years of the projection period 2044–2058, and T2: the *T1* constraint plus a requirement of a probability of at least 0.9 that spawning biomass stays above the LRP (0.4 SB_{MSY}) in every year over 2034–2058) for the Base Case OM. The paper sought feedback on the MSE structure and decisions on OM reconditioning and CMP tuning.

16. The WPM **THANKED** the consultant for the work and for its transparency in highlighting problems with the current operating models.

17. The WPM **NOTED** that several issues on which the paper sought advice, such as tuning objectives and acceptable risk levels, are decisions for the Commission through the TCMP. The WPM **AGREED** that a plan is needed setting out the remaining work, which body decides each open question, and a timeline aligned with upcoming meetings.

18. The WPM **NOTED** that the OMs were conditioned on data up to 2020. The revised catch and CPUE series up to 2023 differ from those data, and the recent steep decline in the LL1 index is not reproduced by most simulations.

19. The WPM **ACKNOWLEDGED** that the biological realism of the OMs is critical if the MSE is to inform management.

20. The WPM **NOTED** that 3% of Base Case simulations collapse before the first TAC is set in 2029. These are low-productivity scenarios that cannot sustain recent catches. They affect the performance metrics and tuning but are not attributable to the CMPs, and their plausibility should be examined during reconditioning.

21. The WPM **NOTED** that the ABC model is a simplified model that uses key quantities from the stock assessment as priors. It was **SUGGESTED** that reconditioning use the 2025 assessment estimates as priors, together with the updated data. The consultant also agreed to confirm the steepness values used, noting that OMs for other IOTC species have typically spanned 0.7–0.9.

22. The WPM **NOTED** that robustness OMs were not available for this analysis, and that their specification needs to be agreed.

23. The WPM **AGREED** that the OMs should be reconditioned to the updated data before the MSE results are finalised.

24. The WPM **NOTED** that the choice of tuning objective affected performance more than the choice of CMP. Tuning to a PGK of 60% alone (T1) allowed a substantial proportion of simulations to fall below the LRP. Adding the safety objective (T2) protected against this, at a cost of 8–24% in mean catch. This is partly because the stock is currently well above SBMSY, so a PGK of 60% effectively requires fishing it down.

25. The WPM **REQUESTED** that the consultant quantify how much of the T1–T2 difference is due to the safety objective and how much to the asymmetric TAC change limits used under T2.

26. The WPM **AGREED** that CMPs should continue to be tuned to the objectives previously agreed by the TCMP, with alternative options presented where these perform poorly. The WPM will confirm the agreed values for the consultant, including the agreed tuning period.

27. The WPM **NOTED** that a target at SBMSY carries asymmetric risk, and that the Commission may choose a PGK above 60%. Given current stock status, a PGK of 60% would imply TACs well above current catches.

28. The WPM **SUGGESTED** that the TCMP be made aware that the albacore target and limit reference points correspond to only about 18% and 7% of SB0, much lower than for other species.

29. The WPM **NOTED** that the 90% safety probability is provisional, and that a review of Resolution 15/10 would be an opportunity to give guidance on acceptable levels of risk of breaching limit reference points.

30. The WPM **NOTED** that the time needed to recondition the OMs is not yet known, and that selecting a final MP in 2027 is likely too ambitious. Preliminary results could be reviewed at the WPM MSE task force meeting in late March 2027 and then presented to the TCMP later in 2027.

31. The WPM **REQUESTED** that the consultant scope the time and funding required within the next few weeks. The scoping should cover reconditioning via the ABC approach and conditioning directly in openMSE.

32. The WPM **NOTED** the Secretariat's advice that funding cannot currently be guaranteed and that contracting is lengthy. The work should be described in the SC programme of work so that the Secretariat can seek resources for it.

33. The WPM **AGREED** that the SC and Commission should discuss the resources required, the work remaining, and the priority of this MSE relative to other IOTC MSEs, including swordfish.

4.2 Future workplan

34. The WPM **NOTED** that there is a strong expectation from stakeholders, given the time and resources already invested, that an MP be adopted as soon as possible. However, the issues identified during the discussion justify further work and investigation. An MP must be carefully scrutinised by the MSE task force, the WPM and the WPTmT before the Commission can consider it for adoption, and this process cannot be shortened.

35. The WPM **AGREED** the following proposed schedule, assuming funding is available and the ABC model developer is available and willing to assist the consultant in reconditioning the OM:

- The OMs are reconditioned before the WPM MSE task force meeting in March 2027, and the reconditioned OMs are presented there with initial testing of the CMPs.
- The results are then presented to the TCMP in May 2027, with clear guidance on the decisions needed from managers, so as to make the most of the TCMP's advice and avoid a further iteration.
- The results are revised in light of the TCMP's advice and presented to the WPM in 2027.
- Final results are presented to the TCMP in early 2028 (February), with a view to the Commission adopting an MP in 2028.

5. THE SKIPJACK TUNA MP (RESOLUTION 24/07 & 25/03)

5.1 Review of exceptional circumstances

36. The WPM **NOTED** the presentation IOTC-2026-WPM17-14, which discusses the consideration of exceptional circumstances for the skipjack tuna MP in 2026. The WPM **THANKED** the authors for their work.

37. The WPM **NOTED** that the reported catch in 2025 was above both the TAC for 2025 and recommended TAC for 2027-2029 and further **NOTED** that robustness testing indicated that MP performance degraded in the presence of overcatch and reduced the probability of meeting management objectives. The WPM **CONSIDERED** this overcatch an exceptional circumstance and **RECOMMENDED** that the Commission take steps to ensure future catches are maintained within the TAC.

38. The WPM **NOTED** the recent divergence of the two CPUE indices that are included in both the assessment (in separate models) and the Management Procedure (as an average of the two). Further, the WPM **NOTED** that the recent observations from the Maldives Pole and Line CPUE index are above the 95% confidence intervals from the MP. The WPM **DISCUSSED** this issue, **NOTING** that the CPUE index was trending in a positive direction (e.g. increasing), and the latest observations from the index were suggesting a potential increase in abundance in the stock.

39. The WPM **NOTED** that this represents an Exceptional Circumstance but that it would not require a deviation from the MP TAC advice (as it does not present increased risk to the sustainability objective of the MP), and that the congruence between the two indices would continue to be examined in future applications of the MP and in the stock assessment.

40. The WPM **NOTED** the request from the WPTT that the WPM should examine the other abundance indices for SKJ (ABBI and BAI) as these show strongly different trends whilst theoretically monitoring the same portion of the population.

5.2 Other scientific work requested by the Commission

41. The WPM **NOTED** the Commission request within Resolution 24/07 (paragraph 16) for the SC to monitor and advise the Commission on SKJ productivity and the potential need to bring forward the review of the MP, in the context of the review of exceptional circumstances.

42. The WPM **NOTED** that the adopted SKJ MP was designed with catch stability from one period to the next as a key management objective, as noted in the resolution, and that was not designed to increase TACs during periods where recruitment may have been above long-term averages.

43. The WPM **NOTED** that the final version of the MP was not tested for robustness to above or below average periods of recruitment because it was not shown to be informative in earlier MSE iterations, but that it was tested for overcatch of the TAC and that this substantially reduced performance against management objectives.

44. The WPM **NOTED** that the 2026 SKJ stock assessment does not indicate any changes in long-term productivity of the stock, but that recent (last ten years) estimated recruitment has been higher than average with the extent depending on which CPUE index was included in the model.

45. The WPM **NOTED** that recent estimated recruitment levels, while above average, were similar to levels that have been estimated to occur in the past and did not represent an exceptional circumstance.

46. The WPM **NOTED** that any efforts to design an MP that explicitly responds to above average recruitment/productivity require MSE testing, in particular performance under both overcatch and periods of below average recruitment and management implementation lags. The WPM also **NOTED** that this needs careful communication to the SC and the Commission so that they are aware of the flexibility or non-flexibility of different MPs to short-term changes in productivity or recruitment.

47. In concluding this discussion, the WPM **NOTED** that there were no exceptional circumstances that would require bringing forward the review of the MP.

6. BIGEYE TUNA MP (RESOLUTION 22/03 & 25/04)

6.1 Review of exceptional circumstance

48. The WPM **NOTED** document IOTC-2026-WPM17-15, which considered evidence available in 2026 for exceptional circumstances for the bigeye tuna MP, with the following abstract provided by the author:

    "*As part of the implementation schedule of the Bigeye Tuna Management Procedure (Res 23/04), the Commission adopted an annual review of evidence for exceptional circumstances, i.e., issues that could make the application of the TAC advice risky to the stock or fishery. A three-stage process is followed: (i) examining evidence for exceptional circumstances, (ii) determining severity and impact, and (iii) recommending any management or research action that should be taken. This scientific process for developing appropriate management responses to exceptional circumstances provides transparency in TAC decision making by the Commission. This year, 2 new, and 2 existing, exceptional circumstances were identified*"

49. The WPM **AGREED** with, and re-iterated, the recommendation from the WPTT regarding catch exceeding TAC.

50. The WPM **NOTED** that catch in 2024 and 2025 exceeded the agreed TAC in resolution 23/04, which may negatively impact the stock. The WPM NOTED the uncertainty in catches and changes in catch reporting. The WPM **RECOMMENDED** that the Commission and compliance committee review the catches, enact appropriate mechanisms in resolution 23/04, and ensure total catches are below the TAC.

51. The WPM **NOTED** that robustness tests for the BET MP included scenarios for catch greater than the TAC but noted that these did not make the MP "robust" to over catch. The robustness tests were used to evaluate which candidate MP performed better, to assist the MP selection process.

52. The WPM **NOTED** that changes to biological information used in the 2025 stock assessment did not reflect new information, but a different parameterisation from the form used in the MSE operating models. The WPM **AGREED** that the best available information should be used in stock assessment and, therefore, stock assessments will differ from the MSE operating models in these respects. The WPM **NOTED** that natural mortality and growth parameters used in the 2025 assessment are not used in operation of the MP and TAC is not affected.

53. The WPM **NOTED** that the remaining small differences in the CPUE standardisation were identified in 2025 and should be corrected in the CPUE standardisation planned for running the MP in 2027.

54. The WPM **NOTED** the need to assess the cumulative severity and impact from multiple exceptional circumstances as this could differ from the assessment of the individual items.

7. SWORDFISH MP (RESOLUTION 24/08 & 26/02)

7.1 Review of exceptional circumstances

55. The WPM **NOTED** document IOTC-2026-WPM17-16, which discusses the consideration of exceptional circumstances for the swordfish MP in 2026, with the following abstract provided by the author:

    "*This paper summarises the outcomes from a review of a wide range of information to determine whether there is evidence of exceptional circumstances in 2026. Note that this review paper takes account of new information presented to the WPB24 (9-12 September 2026 – IOTC (2026b)) and the discussions and advice of WPB24*" (see the paper for the full summary)

56. The WPM **THANKED** the authors for the review and **NOTED** the following key issues considered by the review.

57. The WPM **NOTED** that the preliminary estimate of IOTC swordfish catch in 2025 (34202 t - IOTC-DATASETS-2026-08-13-RC-SCI) is significantly higher (+12%) than the agreed TAC for 2027 and 2028 (30527 t) and **AGREED** that it will be important that the Commission ensure total catches do not exceed the recommended level for those years.

58. The WPM **NOTED** that with respect to stock status estimates (F/FMSY and SB/SBMSY) the 95% confidence intervals of the new 2026 stock assessment and the 90% CI's from the OMs overlap across the time series, however the 2026 stock assessment estimates of status are generally more optimistic (i.e. a lower range for F/FMSY and a higher range for SB/SBMSY). The WPM **NOTED** that while technically, this may represent an exceptional circumstance, the impact is low as the more positive assessment status means there are no implications for the ability of the MP to ensure stock sustainability. As such no action by the Commission is required.

59. The WPM **NOTED** new research presented to WPB24 confirmed that a new terminal longline gear, traplines, has been used by at least one IOTC fleet and achieves a significantly higher catch rate of swordfish than traditional longline targeting approaches. This could have implications for the MP if used by the fleet (Japan longline) upon which the MP CPUE is derived, however, there is no evidence for Japanese longline use of this in the IOTC area as yet. The overall extent of its use in IOTC in recent years is uncertain and the WPM **AGREED** that further information is needed to assess its usage and implications for both assessments and MP in future. The WPM **NOTED** that a project for OM development and MSE testing of blue shark MPs has commenced and that it will be important to understand the interaction of blue shark and swordfish, including possible opposing impacts of traplines on each species' catchability, in the longline fisheries.

60. Finally, the WPM **NOTED** the continued decline in Japanese longline fishing effort in the NWIO area (from which the CPUE index used in the MP is derived) and the complete absence of fishing by Japanese vessels in that region in 2024. The WPM **NOTED** that the original decision to choose the NWIO index was based on a) MSE and prediction skill testing of a range of alternate CPUE (which demonstrated that the NWIO index would support suitable MP performance); and b) the relationship of CPUE in that region to recruitment in the assessment. The WPM **NOTED** that missing data had occurred previously in the north west area in 2011 however there has been a progressive trend to less and less fishing in that area by Japan in subsequent years, substantially increasing the risk of years with no fishing effort, and the risk of not being able to run the MP.

61. The WPM **NOTED** that this issue had been extensively discussed by the WPB24 in its recent meeting and **NOTED** the following recommendations from the WPB24:
    - **WPB24.01 (para 165):** *The WPB RECOGNIZED that the absence of fishery observations in the Northwest Indian Ocean raises serious concerns regarding the long-term suitability of the Japanese CPUE series as a monitoring index for the Management Procedure. The WPB AGREED that this situation represents an Exceptional Circumstance with respect to the continued future use of the MP. The WPB RECOMMENDED that the SC also consider this an Exceptional Circumstance with a potential impact on the future application of the MP. The WPB NOTED that the current implementation of the Management Procedure, through the adopted TAC for 2027 and 2028, as per Resolution 26/02, is not affected, as it is based on the agreed CPUE index*
    - **WPB24.01 (para 166):** *The WPB RECOMMENDED that the Scientific Committee prioritize the development of a workplan to investigate alternative CPUE indices, including indices derived from alternative fleets, areas, or combinations of fleets and areas, for potential incorporation into revised candidate harvest control rules and the MSE testing of these within revised candidate Management Procedures, for consideration by the Commission. The WPB NOTED that this work may take a number of years to complete and as such, FURTHER RECOMMENDED that this work commence as a matter of urgency. This is required to mitigate against the scenario whereby the Japanese Northwest Indian Ocean CPUE series no longer provides an adequate monitoring index in future.*

62. The WPM **AGREED** with the WPB conclusions and recommendations (specified in paragraphs 165 and 166 of IOTC–2026–WPB24–R[E]) but provided the following additional advice. The WPM **RECOMMENDED** that the Commission:
    - *Consider the recent absence (and possible future absence) of fishing effort by Japanese longline vessels in the Northwest Indian Ocean to represent an Exceptional Circumstance, one which presents a significant risk to the continued future application of the MP.*

- *Note that the WPM, upon reviewing risks to the future use of the MP, agreed on the need to redevelop and test a revised version of the current MP or new candidate MPs for IOTC Swordfish.*
- *Endorse and provide the required support to the development and testing, over the next 2-3 years, of a revised version of the current MP or alternate candidate MPs for IOTC Swordfish.*
- *Note that this issue does not, by itself, affect the current implementation of the Management Procedure, through the adopted TAC for 2027 and 2028 as per Resolution 26/02 (due to those TACs being based on an MP run utilising a Japanese LL CPUE index that did not have missing values for recent years). This conclusion remains subject to the annual review of exceptional circumstances.*

63. The WPM further **RECOMMENDED** that the SC:
    - *Task the WPM (including MSE Taskforce) to explore and provide advice on whether there are options to run the existing MP in 2027 to generate TAC advice for the 2029-2031 management cycle, noting that it is very unlikely that redevelopment, testing and adoption of a revised or a new MP by the Commission will be completed in time to set TACs for that period.*
    - Consider tasking the WPM to develop alternative options for advising the Commission on TAC levels for swordfish in case the workplan above is delayed or unsuccessful.
    - *Prioritize the development of a workplan for revising the adopted MP (for example with an alternate CPUE index) and/or developing and testing alternate candidate MPs. These can include if appropriate both model based and empirical MPs. Candidate MPs using CPUE based HCRs should be based on CPUEs derived from fleets or areas, or combinations thereof, that minimise the risk of missing CPUE time series data points in future*.

64. In concluding its discussion on the review of exceptional circumstances for swordfish the WPM **NOTED** that it may be possible to interpolate recent CPUE data points for the missing year(s) to allow the SC to run the existing adopted MP in 2027 (to provide TAC advice for the 2029-31 management cycle). The WPM Chair will reach out to Japanese scientists involved in the Swordfish CPUE standardisation and seek further consideration of such an approach at the 2027 MSE Taskforce meeting.

8. YELLOWFIN TUNA MSE: UPDATE

8.1 Discussion and feedback on MSE development

65. The WPM **NOTED** presentation IOTC-2026-WPM17-17, which described conditioning of OMs and evaluation of MPs for Indian Ocean yellowfin, with the following abstract provided by the authors:

    "*This paper describes the development and preliminary evaluation of operating models for the Management Strategy Evaluation (MSE) of Indian Ocean yellowfin tuna. A 12-model uncertainty grid was conditioned in FLBEIA based on the uncertainty structure adopted in the 2025 yellowfin tuna stock assessment, combining alternative assumptions regarding longline CPUE treatment, catchability creep, and stock-recruitment steepness. The analysis evaluates the consistency of the FLBEIA implementation with the original SS3 assessment, estimates FLBEIA-compatible biological reference points, and conducts deterministic projection diagnostics to verify model behaviour under alternative effort scenarios. In addition, SPiCT was tested as a potential stock-status estimator within a model-based management procedure. Results indicate that FLBEIA broadly reproduces the main historical dynamics and reference points obtained from SS3, while projection diagnostics showed coherent responses across the operating-model grid. SPiCT reproduced the principal trends in stock status, although it provided a more conservative relative biomass status estimate than the operating-model median. These results provide an initial basis for the development and testing of candidate management procedures for Indian Ocean yellowfin tuna*"

66. The WPM **NOTED** that the presentation was an update on the ongoing work of the MSE of yellowfin tuna and focused on the development of operating models. The work carried out was based on the decisions taken during the MSE taskforce meeting in 2026. FLBEIA (Garcia 2017) was the chosen modelling framework to carry out the

MSE simulations. The current assessment model was the basis for the operating models presented. As the assessment model is SS3, the model outputs were transformed using the ss3om software coded in R.

67. The WPM **NOTED** that to date, 12 operating models use a range of different input data or parameters, including 3 different steepness values of the recruitment function, 2 CPUE indices and 2 values for technological (effort) creep in the CPUE index. These 12 operating models were used to check for differences in model outputs and changes in stock status between FLBEIA and SS3. The comparisons highlighted differences in estimates of MSY and associated reference points between the FLBEIA and SS3 models. Differences in selectivity and the weighted aggregation of the two SS3 areas were identified as relevant considerations when interpreting these comparisons. A few trial projections were run using the 12 OMs with different fishing regimes: no catches, fishing at status quo and fishing at Fmsy levels and appeared to be operating as expected.

68. The WPM further **NOTED** that in addition to the 12 operating models, a SPiCT model was parameterised as a potential candidate for the estimation model. It was assumed that the stock was at virgin biomass levels in 1950 (beginning of the time series). The results of the SPiCT model runs are similar to the OM range. The treatment of the CPUE series was identified as an important consideration. Splitting the index may result in a loss of information, and testing an MP should therefore consider the full CPUE treatment rather than an isolated component.

69. The WPM **ACKNOWLEDGED** the work of the team behind the MSE and **NOTED** that this is a long process.

70. The WPM **NOTED** that the use of SPiCT can introduce complications when returning outputs to the absolute scale, but also acknowledged that the use of a different model prevents self-checking of the existing assessment model. It was further **NOTED** that SPiCT and SS3 need not reproduce identical reference points or model performance. Comparisons should consider whether the models show consistent trends, with attention to the influence of the priors.

71. The WPM **NOTED** that no additional uncertainties are used in the current simulations and **AGREED** that future work will require guidance as to which sources of uncertainty should be included. It was also **NOTED** that the intention to use recruitment deviations resulting from the model runs is a good starting point. Future testing will consider alternative recruitment trajectories (and use of long term and shorter term recruitment scenarios for estimating MSY as per the 2024 assessment) and climate change scenarios, together with other sources of uncertainty to be discussed at the MSE taskforce meeting.

72. The WPM **AGREED** that the next forum for providing more input on specific aspects of the MSE would be the MSE taskforce meeting. The need for consistency between the SS3 assessment and the FLBEIA operating models was raised, including how this consistency should be evaluated. Acceptance criteria for the simulations should be agreed by the Commission.

73. The WPM **NOTED** that the current application of the MP resulting from the MSE is likely to be restricted to TAC and catch limit calculations, and **AGREED** that any extension to management decisions that result in changes in fleet/gear composition is a matter for the Commission or TCMP.

74. The WPM **AGREED** that any MSE robustness testing of the MPs of tropical tunas in a mixed fisheries setting needs to be addressed by the Commission.

8.2 Future Plan

75. The WPM **NOTED** that the schedule to provide guidance to the modelling team is deemed adequate by them. Performance metrics should be specified as early as possible, drawing on IOTC guidance. Comparable metrics will support the assessment of MP performance across simulations. TCMP input is needed on acceptable levels of risk and on the appropriateness of the performance statistics. The suitability of Resolution 15/10 was raised for discussion. Any need to adapt the methodology should be discussed at the MSE taskforce meeting in 2027.

9. BLUE SHARK MSE: UPDATE

9.1 Discussion and feedback on MSE development

76. The WPM **NOTED** document IOTC-2026-WPM17-18, which provides a summary of the scoping study of MSE work for the Indian Ocean blue shark, with the following extract from the introduction provided by the author:

> "*A TAC-based MP is being considered for the management of blue shark, conditional on a minimum length limit. However, target or limit reference points have not yet been agreed nor has it been agreed whether undersized individuals should be considered as part of the retained catch if they die prior to hauling. Feedback was sought from the group on these points*"

77. The WPM **NOTED** that any potential candidate management procedure for blue shark that sets a TAC conditional on minimum size limits should be tested for robustness to illegal retention of undersized individuals if they are not allowed to be retained, or to overages in catches of undersized individuals if they are able to be retained.

78. The WPM **NOTED** that smaller blue sharks are often considered to be of higher value than larger individuals due to the economic value of fins, and that high-grading is therefore unlikely to be a concern if minimum size limits were to be implemented.

79. The WPM **NOTED** that the paper only considered different levels of haulback mortality for undersized individuals and that considerations of post-release mortality, which is estimated to be around 80%, will be incorporated into OMs in future iterations of work.

80. The WPM **NOTED** that high uncertainty in historical catches of blue shark has led to difficulty estimating population scale and MSY-based reference points, leading to initial analyses using depletion based reference points.

81. The WPM **NOTED** that if an MP for blue shark that includes minimum size limits allows for the retention of dead undersized individuals, a limit would need to be imposed on the number of undersized individuals that a vessel can retain, which must be defined and monitored.

82. The WPM **NOTED** that more information is needed from CPCs on their respective abilities to monitor and enforce minimum size limits to determine the feasibility of an MP that includes size limits.

83. The WPM **NOTED** that for the purpose of future development of candidate MPs that consider both catch and size-based limits, the retention of dead undersized individuals should contribute to the TAC.

84. The WPM **AGREED** that future development of candidate MPs should investigate TAC-only options in addition to options combining catch and minimum size limits.

85. The WPM **AGREED** that advice pertaining to both MSY and depletion-based reference points should be shown when presenting future iterations of results.

86. The WPM **NOTED** document IOTC-2026-WPM17-19, which highlighted the meeting report of the Global Blue Shark Management Strategy Evaluation Workshop, with the following summary provided by the author:

> *"A workshop on developing management strategy evaluations (MSE) for global blue shark stocks took place on October 14-16, 2025, in Rome, Italy. The workshop was attended by leading experts in MSE and blue shark science, representing the four regional fisheries management organizations (RFMOs) that manage fisheries that catch the species: IATTC, WCPFC, ICCAT, and IOTC. The workshop was timely as both ICCAT and IOTC have Commission-level requests to develop MSE-tested management procedures for their respective blue shark stocks. This workshop offered a rare opportunity to bring together experts from across ocean basins to discuss shared knowledge and challenges and brainstorm solutions related to effective blue shark management. The second and third days of the workshop were hands-on technical sessions with the MSE modeling platform openMSE. All products from the workshop were preliminary and hypothetical, as they have not been endorsed by their respective RFMOs. The progress made at this workshop has the potential to progress or inform MSE development efforts for blue shark across all relevant RFMOs."*

87. The WPM **NOTED** that the full FAO meeting report of the Global Blue Shark Management Strategy Evaluation Workshop was provided as background paper IOTC-2026-WPM17-INF01 and is also available through FAO.

9.2 Future Plan

88. The WPM **AGREED** that both TAC- and conditional TAC-based management procedures, as well as both MSY and depletion-based reference points, should be tested in the developing MSE framework, and **REQUESTED** that results be presented to the MSE Taskforce in 2027.

10. GENERAL MSE ISSUES

10.1 Climate change scenarios in MSE

89. The WPM **NOTED** ongoing work being undertaken by Blue Matter Science on the development of the *Climate Test*, a framework designed to evaluate and rank CMP according to their relative robustness to potential climate change impacts on key biological processes (e.g., including natural mortality, recruitment and somatic growth). The WPM **NOTED** that further information on the project and progress to date is available on the Climate Test project webpage.

90. The WPM **NOTED** the importance of considering climate change impacts within MSE frameworks, including potential changes in stock productivity and spatial distribution. The WPM further **NOTED** that climate change scenarios should be incorporated into MSE evaluations, where feasible, to assess the robustness of CMPs to plausible changes in stock dynamics and environmental conditions.

10.2 MSE capacity building

91. The WPM **NOTED** the ongoing efforts to strengthen MSE capacity building among IOTC CPCs. The WPM WAS **INFORMED** about the planned upcoming MSE capacity building workshop to be organized by Maldives, in collaboration with NGO partners in June/July 2027.

92. The WPM further **NOTED** that identifying resource persons and capacity-building activities for the MSE workshop are being considered subject to the availability of funding, and that discussions are ongoing with potential funding partners. The WPM was also **INFORMED** that the workshop will be open to all CPCs and that Maldives is planning to fund at least one participant from Developing Coastal States through World Bank Funded TransFORM project.

93. The **WPM NOTED** the availability of the FAO Common Oceans e-learning course on Management procedures for sustainable tuna fisheries, available in Spanish and English, which provides opportunities to strengthen the understanding of MSE and MPs among scientists, fisheries managers and other stakeholders.

94. The **WPM NOTED** that the FAO Common Oceans project may have funding opportunities to support country-specific MSE capacity-building activities. However, given current budget constraints, the possibility of organising regional workshops involving participants from several interested CPCs is being explored to maximise participation and the efficient use of available resources. The WPM **ENCOURAGED** anyone interested in such a workshop to get in touch with Rebecca Scott at the Ocean Foundation (see participant list).

10.3 Feedback on MSE and MP communication to TCMP

95. The WPM **NOTED** the importance of effective communication between scientists and fisheries managers throughout the MSE process to ensure that the objectives, performance indicators and trade-offs associated with candidate MPs are clearly understood and appropriately reflected in the selection and adoption of MPs.

96. In particular, the WPM **NOTED** that managers may place different priorities on management objectives, including trade-offs between catch stability and the responsiveness of MPs to changes in stock productivity and abundance. The WPM **NOTED** that these preferences should be explicitly discussed during the MSE process and adequately reflected in the design and implementation of MPs and their associated CMMs. The skipjack tuna MP

was highlighted as an example where the balance between catch stability and responsiveness to changes in stock productivity is particularly relevant.

97. The WPM **NOTED** that, although guidance exists for seeking feedback from and communicating MSE results to the TCMP during the iterative MSE process, there would be value in systematically documenting the key decisions, assumptions, management objectives and trade-offs underlying the selection and adoption of MPs.

98. The WPM further **NOTED** that maintaining such documentation, together with the principal MSE results supporting adopted MPs, would facilitate subsequent reviews of MP implementation, including the evaluation of potential exceptional circumstances and the interpretation of MP performance relative to the objectives originally agreed by managers.

11. CPUE STANDARDISATION (CHAIRPERSON)

11.1 Update on the development of the joint CPUE indices for 2027/2028

99. The WPM **NOTED** the outcomes of the recent five-day workshop on CPUE standardisation, the Global Joint Tuna RFMO Longline CPUE Technical Workshop Yokohama Japan, 12–16 October 2026, which included a series of technical presentations and discussions on methodological developments and challenges associated with the estimation of standardised abundance indices for tuna and tuna-like species.

100. The WPM **NOTED** that the workshop addressed several important methodological issues, including the application of spatial and spatiotemporal modelling approaches to improve CPUE standardisation, the use of operational-level fisheries data, simulation studies to evaluate alternative standardisation methods, collaborative CPUE analyses, and the identification and treatment of changes in fishing efficiency over time, including technological developments and effort creep.

101. The WPM **NOTED** the importance of improving access to and the use of operational-level fisheries data to support more robust CPUE standardisation analyses. The WPM further **NOTED** the need to explore appropriate approaches for accessing and analysing these data while addressing potential confidentiality and data-sharing constraints.

102. The WPM **NOTED** that the workshop discussed the potential application of simulation studies to evaluate the performance of alternative CPUE standardisation methods under different assumptions regarding fisheries dynamics, spatial changes in fishing effort, technological developments and changes in catchability.

103. Regarding effort creep, the WPM **NOTED** that the workshop did not identify a single standard approach or universally applicable adjustment that could be recommended across all fisheries and species. Instead, the WPM **NOTED** that the need for, and magnitude of, effort-creep adjustments should be evaluated on a case-by-case basis, taking into account the characteristics of each fishery, available information on technological developments, and the potential effects of changes in fishing efficiency on standardised CPUE trends.

104. The WPM WAS **INFORMED** about a presentation comparing nominal and standardised longline CPUE trends for 20 bigeye and yellowfin tuna CPUE series from the IATTC, IOTC and WCPFC, with the objective of evaluating the relative effects of effort creep in CPUE standardisation. It found that it typically reflected an equivalent catchability increase of 0.8-0.9% per year. The WPM NOTED that, as the effects of effort creep accumulate over time, their influence is greatest in recent years, which are particularly important for estimating current stock status. The WPM therefore **UNDERLINED** the importance of developing a framework to guide the evaluation of whether, and how, effort-creep adjustments should be incorporated into CPUE standardisation analyses.

105. The WPM WAS **INFORMED** that several presentations by scientists from Asian CPCs provided valuable information on technological developments and changes in fishing practices in their respective fleets. These contributions could improve the understanding of historical changes in fishing efficiency and their potential implications for CPUE standardisation. The WPM therefore **AGREED** to invite the scientists concerned to present relevant information at the next WPTT meeting.

106. The WPM **NOTED** the presentation of the potential contribution of Electronic Monitoring (EM) systems to improving the availability and quality of fisheries data used in CPUE standardisation. In particular, the WPM **NOTED** the importance of identifying the data fields and operational information that should be collected through EM systems to support future improvements in CPUE analyses.

107. The WPM **NOTED** that the workshop report and associated presentations will be available online.

11.2 Advice on CPUE standardisation

108. The WPM **NOTED** the WPTT workplan to further evaluate and compare the two acoustic-based abundance indices developed for skipjack tuna, namely the Associative Behaviour Abundance Index (ABBI) and the Buoy-derived Abundance Index (BAI).

109. The **WPM NOTED** that a comparative evaluation of these indices would benefit from methodological discussions within the WPM, particularly regarding their underlying assumptions, standardisation procedures, sources of uncertainty and the interpretation of differences in estimated abundance trends.

110. The **WPM further NOTED** that, given the substantial workload anticipated for the WPTT in 2027 associated with the yellowfin tuna stock assessment, consideration of the methodological aspects of the ABBI and BAI comparison within the WPM could facilitate progress on this work and provide technical advice to the WPTT. The WPM **AGREED** that an additional day be added to the 2027 meeting to accommodate this.

111. The WPM **NOTED** the importance of coordinating the development and updating of joint CPUE indices with the IOTC stock assessment and MP workplans. In particular, the WPM **REQUESTED** the Joint CPUE work group to ensure the timely availability of updated CPUE indices in 2027 to support: (i) the implementation of the bigeye tuna MP and (ii) the scheduled yellowfin tuna stock assessment.

12. STOCK ASSESSMENT AND STOCK STATUS GUIDANCE (CHAIRPERSON)

12.1 Review the approach used to provide stock status and management advice relative to reference points

112. The WPM **NOTED** document IOTC-2026-WPM17-08, which provides a summary of Preliminary study of the age and growth of yellowfin tuna in the Southern Waters of Java, Indonesia, with the following abstract provided by the author:

> "This study evaluated the population parameters, mortality rates, exploitation, and Spawning Potential Ratio (SPR) of yellowfin tuna (*Thunnus albacares*) landed at 13 fishing ports on the Indian Ocean side of Indonesia between 2018 and 2021. A total of 87,928 specimens were measured across seven gear types, with handlines contributing the largest proportion (60.0%), followed by trolling lines (16.5%), purse seines (14.3%), and longlines (8.0%). Mean fork length varied substantially by gear, from 132.9 cm for longlines down to 34.6 cm for purse seines. Von Bertalanffy growth parameters were estimated as asymptotic length ($L\infty$ = 212.70 cm), growth coefficient (K = 0.31 year^{-1}), and theoretical age at zero length (t_0 = 0.82 years). Total mortality (*Z*), natural mortality (*M*), and fishing mortality (*F*) were estimated at 1.65 year^{-1}, 0.49 year^{-1}, and 1.16 year^{-1}, respectively, resulting in a high exploitation rate (*E* = 0.70). Length-based SPR (LB-SPR) modeling revealed that model-estimated SPR (Ests(SPR)) remained stable between 0.30 and 0.33. However, relative fishing mortality (Ests(*F/M*)) remained high (2.38–3.31), while 50% selectivity length (Ests(SL_{50})) dropped from 73.91 cm in 2018 to 54.19 cm in 2021. These findings indicate substantial fishing pressure and the need for gear-specific management"

113. The WPM **WELCOMED** the yellowfin tuna assessment at a local level, as it might give insights into stock structure beyond the official assessment.

114. The WPM **ACKNOWLEDGED** that the data were collected between 2018 and 2021. The WPM further queried if the data collection has continued, which it has not. The WPM **NOTED** that there are current attempts to secure funding to restart the project.

115. The WPM **NOTED** that the fit of the selectivity was not optimal and commented that the use of a dome shaped selectivity could be more appropriate. The WPM suggested the use of an approach such as Fishblicc as an alternative way forward. The WPM also **ACKNOWLEDGED** that the methods applied were only length based, with no aging having taken place.

116. The WPM **NOTED** document IOTC-2026-WPM17-09, which provides a summary of Observed hook depth and catch distribution in the Sri Lankan tuna longline fishery, with the following abstract provided by the author:

> "Hook depth determines the depth range fished by a tuna longline and may influence species composition and catch rates, yet it is usually inferred from gear geometry rather than measured. This study compared catenary-derived hook depths with direct observations from Star-Oddi DST centi-TD temperature-depth recorders (TDRs) on a Sri Lankan tuna longline on a single vessel which gear was typical of about half of 27 surveyed vessels. It also examined how the catch of yellowfin tuna (*Thunnus albacares*), swordfish (*Xiphias gladius*), sailfish (*Istiophorus platypterus*) and other fish species varied with hook depth and hook position. Theoretical depths were calculated with a catenary curve using a sag ratio of 0.85. Across 100 hook-level TDR records from 22 sampling dates and five sensors, mean observed depth was 71.0 m, compared with a mean theoretical depth of 87.1 m. The raw mean difference was -16.1 m, equivalent to 18.5% of the mean theoretical depth. A mixed model estimated a mean bias of -16.7 m (95% CI: -23.2 to -10.2 m), with observed depths shallower than theoretical estimates in 82% of records. Bias did not differ detectably among four hook-position groups ($p = 0.125$), but variation among dates was large (SD 12.2 m). Catch records matched to TDR depths (71 records, 62 with catch, 195 fish) were analysed as species shares among fish caught, using binomial mixed models. Observed depth in meters was not significantly associated with the share of any species after correction for multiple testing. In exploratory analyses, species shares varied along the line: modelled swordfish share rose from 18% at the end hooks to 47% at the central hooks, whereas sailfish share fell from 27% to 4%, and yellowfin share did not differ detectably (22–31%). These hook-position differences were not significant after Holm correction (adjusted $p \geq 0.064$) and should be treated as hypotheses. The catenary calculation overestimated the depth fished by about 17 m on average, so hook depth should be measured rather than assumed when describing fishing effort, catchability and CPUE in tuna longline fisheries"

117. The WPM **ACKNOWLEDGED** the usefulness of fundamental research to improve the basis of the stock assessment. Furthermore, the WPM noted that the data came from one vessel over one season.

118. The WPM **QUERIED** whether different data from fishing grounds were used in the analysis and acknowledged that the fishing grounds are small and limited. The analysis was based on one single fishing ground, although, some data were collected on another, but the data set was too small to feed into the analysis.

119. The WPM **NOTED** that the data were collected by fishers, trained for that purpose. It was further **ACKNOWLEDGED** by the WPM that variables other than line length, presence/absence of weights and hooks influence the fishing depth of longline hooks.

120. The WPM **NOTED** document IOTC-2026-WPM17-10, which provides a summary of Stock assessment and management for longtail tuna in the Andaman Sea, Thailand, with the following abstract provided by the author:

> "The longtail tuna (*Thunnus tonggol*) is a commercially vital neritic tuna species in the Andaman Sea of Thailand, yet maintaining its long-term sustainability requires updated stock assessments and forward-looking management strategies. This study evaluated the historical stock status (2006–2025) and medium-term projections (2026–2035) of longtail tuna relative to Maximum Sustainable Yield (MSY) reference points using a Bayesian state-space surplus production model (JABBA framework). The historical trajectory revealed a robust recovery from localized depletion in the mid-2000s, stabilizing at a healthy biomass level ($B/B_{MSY} > 1.0$). In the 2025 assessment year, the stock remained in a non-overfished and non-overfishing state (Kobe

green quadrant probability of 94.8%), with empirical landings (5,725 tonnes) operating safely below the estimated MSY (7,699 tonnes). However, an upward trend in fishing mortality (F/FMSY) from 2023 to 2025 indicated escalating risk. 10-year forward projections showed that a 20% expansion in fishing effort (120%F) would trigger chronic overfishing starting in 2026 (F/FMSY = 1.21). Conversely, conservation scenarios with a 10%–20% effort reduction (80% -90% F) stabilized fishing rates well within safe biological limits (F/FMSY = 0.70 – 0.80). To prevent stock degradation, management must shift toward proactive input controls, establishing species-specific quotas, adopting a Multispecies/Multigear (MSMG) framework, and expanding Marine Protected Areas (MPAs)"

121. The WPM **THANKED** the author for the introduction of the assessment methods for the pelagic species within Thailand's waters, which may be useful for other CPCs wishing to apply such methods to assess their domestic fisheries.

122. The WPM **NOTED** that catch and catch-per-unit-effort (CPUE) information was not shown, making it difficult to interpret the results.

123. The WPM **SUGGESTED** presenting this study at the Working Party on Neritic Tunas.

124. The WPM **NOTED** that there is genetic evidence that neritic tunas may show several populations in the Indian Ocean, and independent assessments may be needed, as explored in this study.

125. The WPM **SUGGESTED** continuing to develop CPUE indices for localized areas in the Indian Ocean.

126. The WPM **NOTED** document IOTC-2026-WPM17-11, which provides a summary of a methodological framework for integrating heterogeneous fishery-dependent and independent tuna data in India, with the following abstract provided by the author:

"India's tuna fishery is predominantly artisanal and small-scale, with over 238,000 craft operating from 1,537 landing centres. This structure presents a fundamental challenge for meeting the species-wise, georeferenced catch and effort reporting requirements of IOTC, FAO and other fisheries management organisations. Fishing-incident-wise information on species caught, their catch, effort, size and other biological parameters is inherently difficult to collect through landing surveys alone, because landings are dispersed, multi-gear, multi-species and often recorded at coarse spatial and temporal resolution. India has addressed this challenge through a well-established fishery-independent data collection system, in which research and survey vessels of the Fishery Survey of India (FSI) conduct exploratory and experimental fishing across the entire Exclusive Economic Zone (EEZ) and adjoining seas. Data collected during these voyages, including species-wise catch, effort, geo-referenced fishing positions, size composition and biological information, are collated with data from landing centres and fishing harbours to generate the species-wise, georeferenced information required for stock assessment and management. This paper explains the nature of India's artisanal and small-scale tuna fishery, describes the FSI fishery-independent survey system, and proposes a rule-based methodological framework for integrating these heterogeneous sources. The framework follows four steps, preserve, standardise, link and reconcile, designed to maintain the statistical identity of fishery-dependent and fishery-independent datasets while enabling complementary interpretation. The paper clarifies that fishery-independent survey data serve as the primary source of species-wise, georeferenced information, while fishery-dependent landing data provide coverage, magnitude and fleet-level context. No fitted calibration model, combined abundance index or completed validation is presented; the framework is proposed as a national methodology for discussion and refinement"

127. The WPM **THANKED** the author for presenting a summary of the collection program.

128. The WPM **SUGGESTED** presenting this work at the Working Party on Data Collection and Statistics.

129. The WPM **SUGGESTED** coordinating with the IOTC Secretariat to produce CPUE indices and biological parameters from collected data that may be relevant for stock assessments.

130. The WPM **NOTED** document IOTC-2026-WPM17-21, which provided a review of The Fisheries Intelligence and Advisory System Extending Data-Limited Assessment Methods Through AI-Assisted Interpretation:

> "This paper introduces the Fisheries Intelligence and Advisory System (FIAS), a proposed AI-assisted architecture. Its aim is to make existing, accepted data-limited methods accessible to capacity-limited fisheries administrations, and to ensure that those methods can be applied rapidly and efficiently in house" (see the paper for the full abstract).

131. The WPM **NOTED** that this paper introduces the Fisheries Intelligence and Advisory System (FIAS), a proposed AI-assisted architecture. Its aim is to make existing, accepted data-limited methods accessible to capacity-limited fisheries administrations, and to ensure that those methods can be applied rapidly and efficiently in house.

132. The WPM **NOTED** that the initial scope is limited to single-species, single-stock fisheries. Later iterations may extend the architecture once this first implementation has been built, piloted, and reviewed. This paper invites comment on the proposed data-adequacy criteria, pathway-selection criteria, and HCR families.

133. The WPM **NOTED** that the paper invited the WPM to comment on proposed data-adequacy criteria, pathway-selection criteria and families of harvest control rules. The authors also expressed interest in collaborating with IOTC CPCs and the Secretariat on future reviews or pilot implementations.

134. The WPM **NOTED** that limited analytical capacity was not the only constraint on stock assessment, as data availability also limits the number of stocks that can be assessed. The WPM **NOTED** the risks that FIAS would treat existing data as given, and highlighted the need to include procedures to verify their quality. The WPM further **SUGGESTED** that the monitoring component could be useful for identifying data gaps and potentially informing investigations of stock structure.

135. The authors acknowledged the importance of data validation and indicated that the extent to which validation procedures should be incorporated into the monitoring agent remained under consideration. They clarified that stock structure was outside the scope of the initial implementation.

136. Questions were raised about the extent to which AI would be integrated into each of the three system components and whether its behaviour could be reliably constrained to the intended analytical framework. Concern was also expressed that increased reliance on AI-assisted assessments could eventually reduce the capacity of managers to understand and interpret assessment results independently.

137. The authors emphasized that the statistical analyses would be conducted separately from the AI interpretation layer, thereby preventing the AI from directly controlling the underlying analytical process. They acknowledged that the potential erosion of users' capacity to interpret results was a legitimate concern and stressed the importance of appropriate procedures, including the involvement of experts in reviewing the outputs.

138. The WPM **NOTED** that, although the system could make it easier and faster to undertake more stock assessments, the availability of experts to evaluate the resulting assessments might not increase accordingly. In response, the authors pointed out that AI could save considerable time when conducting analyses but cautioned that users without sufficient expertise could encounter problems when relying on AI-assisted outputs. They explained that the system was being designed to produce interpretations of a quality and technical standard comparable to those expected from an experienced analyst.

139. The authors stressed that FIAS remained an experiment intended to evaluate the extent to which AI-assisted interpretation could produce reliable and accurate results. They indicated that they intended to present the results of these experiments to working parties such as the WPM for further evaluation and validation.

140. The WPM **EMPHASIZED** the need for extensive simulation testing in the near term to establish confidence in the system. The discussion highlighted the importance of evaluating the reliability of the proposed approach and ensuring that appropriate safeguards are in place before it is used to support management decisions.

141. The WPM **ASKED** whether the AI agent would be hosted locally or online and, in the latter case, how data privacy would be ensured. The authors explained that the system was still under development and that these implementation details had not yet been fully resolved. They indicated that the eventual configuration could depend partly on the needs of end users, with local deployment being a potential option.

142. The WPM **SUGGESTED** that the tool would also be worth discussing at the Working Party on Neritic Tunas and the Working Party on Ecosystems and Bycatch, given its potential relevance to assessments of other stocks and fisheries, particularly data-limited stocks.

13. WPM Program of Work

13.1 Revision of the timeline of the MSE development

143. The WPM **NOTED** that the most recent timeline for MSE development was provided in the draft WPM Programme of Work (IOTC–2026–WPM17–07) that will need to be updated. The WPM **DISCUSSED** and reviewed the timeline for MSE development and the updated schedule of MSE work is provided in Appendix IV (as part of the WPM Program of Work)

144. The WPM **NOTED** that the updated schedule of MSE work needs to be reviewed and endorsed by the SC in 2026 and the Commission in 2027.

13.2 Revision of the WPM Program of work (2027–2031)

145. The WPM **NOTED** paper IOTC–2026–WPM17–07 presenting the draft WPM Programme of Work (2027–2031).

146. The WPM **RECALLED** that the SC, at its 18th Session, made the following request to its working parties:

> *"The SC REQUESTED that during the 2015 Working Party meetings, each group not only develop a Draft Program of Work for the next five years containing low, medium and high priority projects, but that all High Priority projects are ranked. The intention is that the SC would then be able to review the rankings and develop a consolidated list of the highest priority projects to meet the needs of the Commission. Where possible, budget estimates should be determined, as well as the identification of potential funding sources." (SC17, Para. 178)*

147. The WPM **REQUESTED** that the Chairperson and Vice-Chairperson of the WPM, in consultation with the IOTC Secretariat, develop Terms of Reference (ToR) for each of the projects detailed on the WPM Programme of Work (2027–2031) that are yet to be funded, for circulation to potential funding bodies.

148. The WPM **RECOMMENDED** that the Scientific Committee consider and endorse the WPM Programme of Work (2027–2031), as provided in Appendix IV.

14. Other business

14.1 Date and place of the 18th and 19th sessions of the WPM

149. The WPM **RECOMMENDED** that the SC consider mid-to-late October 2027 as the preferred period to hold the WPM18. The WPM **AGREED** that the meeting should continue to be held back-to-back with the WPTT. In view of the heavy agenda, in particular the need to cover MSE work for several species and undertake a review of the juvenile tropical tuna abundance indices, the WPM **RECOMMENDED** that the duration of the meeting be extended from two to three days.

150. The WPM also **NOTED** the MSE task force meeting to be held in 2027 should continue to take place. Considering the contents and related MSE work, the WPM **AGREED** to hold it from 23-25 March 2027. The WPM **AGREED** that this task force meeting is crucial for providing technical feedback to the TCMP.

151. The WPM **RECALLED** that Resolution 25/10 states that *"...the Scientific Committee at its annual meeting may recommend a change to the date and/or format of the next TCMP..."* (paragraph 4 of Resolution 25/10). The

WPM **NOTED** that the Commission has tentatively scheduled two TCMP meetings in 2026: one online meeting in late January and one in-person meeting in May (to be held back-to-back with the Commission meeting).

152. In view of the status of the albacore and blue shark MSE, and the potential progress that may be achieved in the coming months, the WPM **RECOMMENDED** that an extra TCMP meeting in January 2027 is not organized.

14.2 Review of the draft, and adoption of the Report of the 17th Session of the WPM

153. The WPM **RECOMMENDED** that the Scientific Committee consider the consolidated set of recommendations arising from WPM17, provided in Appendix V.

154. The WPM **THANKED** the Chair for excellent running of the meeting as well as contributions to the intersessional work conducted to expedite the MSE of the Indian Ocean stocks.

155. The Chair **THANKED** all the participants for their dedicated discussion during the session. The Chair also expressed appreciation to the rapporteurs and Secretariat for their hard work. The Chair thanked the hosts of the meeting for their hospitality and technical assistance.

156. The report of the 17th Session of the Working Party on Methods (IOTC–2026–WPM17–R) was **ADOPTED** via correspondence.

APPENDIX I
LIST OF PARTICIPANTS

CHAIRPERSONS					
Title	**First name**	**Last name**	**Organisation**	**E-mail**	**CPC**
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APPENDIX II
AGENDA FOR THE 17TH WORKING PARTY ON METHODS

Date: 26-27 October 2026
Location: Tenerife, Spain
Venue: IEO
Time: 09:00 – 17:00 daily
Chair: Ann Preece (AUS); Vice-chair: Dr Giancarlo Correa (EU.ESP)

1. **OPENING OF THE MEETING** (Chairperson)
2. **ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION** (Chairperson)
3. **THE IOTC PROCESS: OUTCOMES, UPDATES AND PROGRESS**
   - 3.1. Outcomes of the 28th Session of the Scientific Committee (IOTC Secretariat)
   - 3.2. Outcomes of the 10th Session of the Technical Committee on Management Procedures (IOTC Secretariat)
   - 3.3. Outcomes of the 30th Session of the Commission (IOTC Secretariat)
   - 3.4. Review of Conservation and Management Measures relevant to the WPM (IOTC Secretariat)
   - 3.5. Progress on the recommendations of WPM16 (IOTC Secretariat and Chairperson)
4. **ALBACORE MSE: UPDATE** (Developers)
   - 4.1. Discussion and feedback on MSE development
   - 4.2. Future workplan
5. **SKIPJACK TUNA MP** (**Resolutions 24/07 & 25/03**)
   - 5.1. Review of exceptional circumstances
   - 5.2. Other scientific work requested by the Commission
6. **BIGEYE TUNA MP (Resolution 22/03 & 25/04)**
   - 6.1. Review of exceptional circumstances
7. **SWORDFISH MP** (**Resolution 24/08 & 26/02**)
   - 7.1. Review of Exceptional Circumstances
8. **YELLOWFIN TUNA MSE: UPDATE** (Developers)
   - 8.1. Discussion and feedback on MSE development
   - 8.2. Future workplan
9. **BLUE SHARK MSE: UPDATE** (Developers)
   - 9.1. Discussion and feedback on MSE development
   - 9.2. Future workplan
10. **GENERAL MSE ISSUES** (Chairperson and Vice-chairperson)
    - 10.1. Climate change scenarios in MSE
    - 10.2. MSE capacity building
    - 10.3. Feedback on MSE and MP communication to TCMP
11. **CPUE STANDARDISATION (**Chairperson)

11.1. Update on the development of the joint CPUE indices for 2027/2028.
11.2. Advice on CPUE standardisation
11.3. Future workplan

12. STOCK ASSESSMENT and STOCK STATUS GUIDANCE (Chairperson)
12.1. Review the approach used to provide stock status and management advice relative to reference points

13. WPM PROGRAM OF WORK (Chairperson and IOTC Secretariat)
13.1. Revision of the timeline of the MSE development
13.2. Revision of the WPM Program of Work (2027–2031) and research priorities

14. OTHER BUSINESS
14.1. Date and place of the 18th and 19th Sessions of the WPM (Chairperson and IOTC Secretariat)
14.2. Development of priorities for Invited Expert(s) at the next WPM meeting (Chairperson)
14.3. Adoption of the Report of the 17th Session of the WPM (Chairperson)

APPENDIX III
LIST OF DOCUMENTS FOR THE 17TH WORKING PARTY ON METHODS

Document	Title
IOTC-2026-WPM17-01a	Agenda of the 17th Working Party on Methods
IOTC-2026-WPM17-01b	Annotated agenda of the 17th Working Party on Methods
IOTC-2026-WPM17-02	List of documents of the 17th Working Party on Methods
IOTC-2026-WPM17-03	Outcomes of the 28th Session of the Scientific Committee (IOTC Secretariat)
IOTC-2026-WPM17-04	Outcomes of the 30th Session of the Commission (IOTC Secretariat)
IOTC-2026-WPM17-05	Review of Conservation and Management Measures relating to methods (IOTC Secretariat)
IOTC-2026-WPM17-06	Progress made on the recommendations and requests of WPM16 and SC28 (IOTC Secretariat)
IOTC-2026-WPM17-07	Revision of the WPM program of work (2027-2031) (IOTC Secretariat & Chairpersons)
IOTC-2026-WPM17-08	Preliminary study of the age and growth of yellowfin tuna (*Thunnus albacares*) in the Southern Waters of Java, Indonesia (Jatmiko I, Tirtadanu, T, Sadiyah L, Satria F)
IOTC-2026-WPM17-09	Observed Hook Depth and Catch Distribution in the Sri Lankan Tuna Longline Fishery (Gunasekara S, Ambillapitiya L, Ranaweera R)
IOTC-2026-WPM17-10	Stock assessment and management for longtail tuna (Thunnus tonggol) in the Andaman Sea, Thailand (Prasertsook O, Piabpabrattana S)
IOTC-2026-WPM17-11	A methodological framework for integrating heterogeneous fishery-dependent and Independent tuna data in India (Ramachandran S, Varghese S, Sreenath K)
IOTC-2026-WPM17-13	Preliminary Results of the Albacore MSE (Hordyk A)
IOTC-2026-WPM17-14	Consideration of exceptional circumstances for the skipjack tuna management procedure adopted by the IOTC in 2026 (Merino G)
IOTC-2026-WPM17-15	Consideration of exceptional circumstances for the IOTC bigeye tuna management procedure for 2026 (Preece A, Williams A)
IOTC-2026-WPM17-16	Consideration of exceptional circumstances for the IOTC swordfish tuna management procedure for 2026 (Bromhead D, Preece A, Williams A, Brunel T, Mosqueira I)
IOTC-2026-WPM17-17	Management strategy evaluation for Indian ocean yellowfin: development and analyses of operating models (Agurtzane Urtizberea A, Correa G, Merino G)
IOTC-2026-WPM17-18	Considerations for a blue shark TAC in the Indian Ocean (Edward C)
IOTC-2026-WPM17-19	Report from the Global Blue Shark Management Strategy Evaluation Workshop (Scott R)
IOTC-2026-WPM17-21	Extending Data-Limited Assessment Methods Through AI-Assisted Interpretation: The Fisheries Intelligence and Advisory System (Adira K, Dunn A)
IOTC-2026-WPM17-INF01	Global blue shark management strategy evaluation workshop report

APPENDIX IV
WORKING PARTY ON METHODS PROGRAM OF WORK (2027–2031)

The Program of Work consists of the following, noting that a timeline for implementation would be developed by the SC once it has agreed to the priority projects across all of its Working Parties:

Table 1. Priority topics for obtaining the information necessary to deliver the necessary advice to the Commission. Resolution 15/10 elements have been incorporated as required by the Commission.

Topic	Sub-topic and project	2027	2028	2029	2030	2031
1. Management Strategy Evaluation	Continuation of Management Strategy Evaluation for Albacore, Yellowfin, and Blue shark					
MP Implementation	Monitoring the implementation of SKJ, BET and SWO Management Procedures					
	Peer review of SKJ/SWO MSE/MPs as required by MP resolutions					
Future Research Requirements (not in order of priority)						
Management Strategy Evaluation						
1.1 Albacore 1.1.1 Reconditioning of the OM, testing and evaluation of the candidate MPs, and presentation of results at the TCMP						
1.2 Skipjack tuna 1.2.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice						
1.2.2 Presentation of MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of the TAC						

Topic	Sub-topic and project	2027	2028	2029	2030	2031
	1.2.3 Stock assessment to provide information on stock status and review productivity					
	1.2.4 External peer review (2026-2028) and performance review of the MP (2031)					
1.3 Bigeye tuna						
	1.3.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice					
	1.3.2 MP performance review (develop TORs by 2029)					
	1.3.3 Presentation of MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of the TAC					
	1.3.4 Stock assessment to provide information on stock status					
1.4 Yellowfin tuna						
	1.4.1 Update OM & present preliminary MP results to TCMP, WPTT/WPM review of new OM					
	1.4.2 Present revised MP results to TCMP; iteratively update development if required					
1.5 Swordfish						
	1.5.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice					
	1.5.2 Present MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of the TAC					

Topic	Sub-topic and project	2027	2028	2029	2030	2031
	1.5.3 Stock assessment to provide information on stock status					
	1.5.4 Potential development and testing of a revised candidate MP					
1.6 Blue shark	1.6.1 Conditioning of the OM, testing and evaluation of the candidate MPs, and presentation of results at the TCMP					
Stock status guidance and reference points.	Review IOTC stock status characterization against reference points and the framework for the provision of management advice (Resolution 15/10) to address the TORs of ad hoc reference point WG.					
CPUE Standardisation	Continue the development of CPUE series for IOTC Species to be used in stock assessment and in new MSE/MP. Develop mechanism to ensure that CPUE standardization for the MP follows the MP specifications. Consider alternative CPUE (and catch data) to explore alternative plausible time series to address potential uncertainties associated with productivity					
Stock assessment	Exploration and development of next-generation integrated fisheries stock assessment models (e.g., age-structured state-space assessment models) and their application to tuna stocks.					

Topic	Sub-topic and project	2027	2028	2029	2030	2031
CKMR project	Implementation of a CKMR project for Indian Ocean yellowfin tuna to evaluate the logistics and feasibility of sampling, and levels of cross contamination of DNA, and participate in the development of a network of samplers.					
Capacity Building	Ongoing development of tools, materials and courses to continue Capacity Building for increasing participation in the MSE process and develop improved MSE communication to fishery managers.					

*Exceptional circumstances are reviewed every year.

SCHEDULE OF WORK FOR THE DEVELOPMENT OF MANAGEMENT PROCEDURES FOR KEY SPECIES IN THE IOTC AREA

A more detailed explanation of the roles of the Working Parties (WPs), Scientific Committee (SC), Technical Committee on Management Procedures (TCMP) and the Commission is provided below

Year	Albacore	Skipjack	Yellowfin	Bigeye	Swordfish	Blueshark
2027	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP:** Provide advice to the Commission on Catch exceeding the HCR TAC.	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP:** Provide advice to the Commission on exceptional circumstance in relation to catch exceeding TAC.	**TCMP**: Provide advice to the Commission on exceptional circumstance in relation to the CPUE and potential redevelopment of the MP	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.
	Commission: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.	**Commission:** Consider recommendation to keep catch below the TAC	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.	**Commission:** Consider recommendation on exceptional circumstances and need to keep catch less than the TAC	**Commission**: Provide advice to the Commission on exceptional circumstance in relation to the CPUE and potential revisions / redevelopment of the MP	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.
	WPs/SC: Consider recommendations from the Commission	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	**WPs/SC**: Run BET MP and Review Exceptional Circumstances and agree if any corrective action needed. Provide TAC advice to the TCMP and	**WPs/SC**: Run SWO MP and Review Exceptional Circumstances and agree if any corrective action needed. Provide TAC advice to the TCMP and	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.

Year	Albacore	Skipjack	Yellowfin	Bigeye	Swordfish	Blueshark
				Commission for 2029-2031.	Commission for 2029-2031.	
2028	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP**:	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP**: Provide advice to the Commission on BET TAC for 2029-2031.	**TCMP**: Provide advice to the Commission on SWO TAC for 2029-2031.	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.
	Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.	**Commission:**	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs, or adoption of an MP.	**Commission**: Adopt the TAC for 2029-2031.	**Commission**: Adopt the TAC for 2029-2031.	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs or adoption of an MP.
	WPs/SC: Consider recommendations from the Commission	**WPs/SC**: Run SKJ MP and Review Exceptional Circumstances and agree on any corrective action, if needed. Provide TAC advice to the TCMP and Commission for 2030-2032.	**WPs/SC**: Consider recommendations from the Commission	**WPs/SC**: Stock Assessment to monitor MP implementation. Review Exceptional Circumstances.	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission

Year	Albacore	Skipjack	Yellowfin	Bigeye	Swordfish	Blueshark
2029	**TCMP**: Provide advice to Commission on candidate MPs, and any proposed Resolutions for an MP.	**TCMP**: Provide advice to the Commission on SKJ TAC for 2030-2032.	**TCMP**: Provide advice to Commission on candidate MPs, and any proposed Resolutions for an MP.	**TCMP**:	**TCMP**:	**TCMP**: Provide advice to Commission on candidate MPs, and any proposed Resolutions for an MP.
	Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.	**Commission:** Adopt the TAC for 2030-2032.	**Commission**: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.	**Commission**:	**Commission**:	**Commission**: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.
	WPs/SC: Consider recommendations from the Commission	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission

APPENDIX V
CONSOLIDATED RECOMMENDATIONS OF THE 17TH SESSION OF THE WORKING PARTY ON METHODS

EXECUTIVE SUMMARY

The following are the recommendations from the WPM17 to the Scientific Committee, and key outcomes of the WPM, which are provided in Appendix V.

Review of intersessional meetings related to the IOTC MSE process

WPM17.01 (Para 12): The WPM **THANKED** the participants of the Working Party on Methods Management Strategy Evaluation Task Force meeting for their informative discussions and input on the technical aspects of MSE and related topics. The WPM **NOTED** that the output of this meeting remains very important to the WPM as it provides an informal forum for the highly technical discussions necessary to advance the MSE process in IOTC for which there is insufficient time during the WPM meeting. The WPM further **RECOMMENDED** that the SC endorse the inclusion of this meeting in the schedule of meetings for 2027.

Skipjack tuna MP (Resolution 24/07)

WPM17.02 (Para 37): The WMP **NOTED** that the reported catch in 2025 was above both the TAC for 2025 and recommended TAC for 2026-2029 and further **NOTED** that robustness testing indicated that MP performance degraded in the presence of overcatch and reduced the probability of meeting management objectives. The WPM **CONSIDERED** this overcatch an exceptional circumstance and **RECOMMENDED** that the Commission take steps to ensure future catches are maintained within the TAC.

Bigeye tuna MP (Resolution 22/03)

WPM17.03 (Para 50): The WPM **NOTED** that catch in 2024 and 2025 exceeded the agreed TAC in resolution 23/04, which may negatively impact the stock. The WPM **NOTED** the uncertainty in catches and changes in catch reporting. The WPM **RECOMMENDED** that the Commission and compliance committee review the catches, enact appropriate mechanisms in resolution 23/04, and ensure total catches are below the TAC.

Swordfish MP (Resolution 24/08)

WPM17.04 (Para 62): The WPM **AGREED** with the WPB conclusions and recommendations (specified in paragraphs 165 and 166 of IOTC–2026–WPB24–R[E]) but provided the following additional advice. The WPM **RECOMMENDED** that the Commission:

- *Consider the recent absence (and possible future absence) of fishing effort by Japanese longline vessels in the Northwest Indian Ocean to represent an Exceptional Circumstance, one which presents a significant risk to the continued future application of the MP.*
- *Note that the WPM, upon reviewing risks to the future use of the MP, agreed on the need to redevelop and test a revised version of the current MP or new candidate MPs for IOTC Swordfish.*
- *Endorse and provide the required support to the development and testing, over the next 2-3 years, of a revised version of the current MP or alternate candidate MPs for IOTC Swordfish.*
- *Note that this issue does not, by itself, affect the current implementation of the Management Procedure, through the adopted TAC for 2027 and 2028 as per Resolution 26/02 (due to those TACs being based on an MP run utilising a Japanese LL CPUE index that did not have missing values for recent years). This conclusion remains subject to the annual review of exceptional circumstances.*

WPM17.05 (Para 63): The WPM further **RECOMMENDED** that the SC:

- *Task the WPM (including MSE Taskforce) to explore and provide advice on whether there are options to run the existing MP in 2027 to generate TAC advice for the 2029-2031 management cycle, noting that it is very unlikely that redevelopment, testing and adoption of a revised or a new MP by the Commission will be completed in time to set TACs for that period.*
- Consider tasking the WPM to develop alternative options for advising the Commission on TAC levels for swordfish in case the workplan above is delayed or unsuccessful.

- *Prioritize the development of a workplan for revising the adopted MP (for example with an alternate CPUE index) and/or developing and testing alternate candidate MPs. These can include if appropriate both model based and empirical MPs. Candidate MPs using CPUE based HCRs should be based on CPUEs derived from fleets or areas, or combinations thereof, that minimise the risk of missing CPUE time series data points in future.*

Revision of the WPM Program of work (2027–2031)

WPM17.06 (Para 148).: The WPM **RECOMMENDED** that the Scientific Committee consider and endorse the WPM Programme of Work (2027–2031), as provided in Appendix IV.

Date and place of the 18th and 19th sessions of the WPM

WPM17.07 (Para 149): The WPM **RECOMMENDED** that the SC consider mid-to-late October 2027 as the preferred period to hold the WPM18. The WPM **AGREED** that the meeting should continue to be held back-to-back with the WPTT. In view of the heavy agenda, in particular the need to cover MSE work for several species and undertake a review of the juvenile tropical tuna abundance indices, the WPM **RECOMMENDED** that the duration of the meeting be extended from two to three days.

WPM17.08 (Para 152): In view of the status of the albacore and blue shark MSE, and the potential progress that may be achieved in the coming months, the WPM **RECOMMENDED** that an extra TCMP meeting in January 2027 is not organized.

Review of the draft, and adoption of the Report of the 17th Session of the WPM

WPM17.09 (Para 153): The WPM **RECOMMENDED** that the Scientific Committee consider the consolidated set of recommendations arising from WPM17, provided in Appendix V