



## Report of the 5<sup>th</sup> IOTC Technical Committee on Management Procedures

---

Seychelles, 13–14 May 2022

---

**DISTRIBUTION:**

Participants in the Session  
Members of the Commission  
Other interested Nations and International  
Organizations  
FAO Fisheries Department  
FAO Regional Fishery Officers

**BIBLIOGRAPHIC ENTRY**

IOTC–TCMP05 2022. Report of the 5<sup>th</sup> IOTC  
Technical Committee on Management Procedures.  
Held Seychelles 13–14 May 2022. *IOTC–2022–  
TCMP05–R[E]*: 28 pp.

---



The designations employed and the presentation of material in this publication and its lists do not imply the expression of any opinion whatsoever on the part of the Indian Ocean Tuna Commission (IOTC) or the Food and Agriculture Organization (FAO) of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This work is copyright. Fair dealing for study, research, news reporting, criticism or review is permitted. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgment of the source is included. Major extracts or the entire document may not be reproduced by any process without the written permission of the Executive Secretary, IOTC.

The Indian Ocean Tuna Commission has exercised due care and skill in the preparation and compilation of the information and data set out in this publication. Notwithstanding, the Indian Ocean Tuna Commission, employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data set out in this publication to the maximum extent permitted by law.

Contact details:

Indian Ocean Tuna Commission  
Le Chantier Mall  
PO Box 1011  
Victoria, Mahé, Seychelles  
Ph: +248 4225 494  
Fax: +248 4224 364  
Email: [IOTC-secretariat@fao.org](mailto:IOTC-secretariat@fao.org)  
Website: <http://www.iotc.org>

**ACRONYMS**

BET	Bigeye Tuna
BMSY	Biomass that achieves maximum sustainable yield
CMM	Conservation and Management Measure (of the IOTC; Resolutions and Recommendations)
CPCs	Contracting parties and cooperating non-contracting parties
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
IOTC	Indian Ocean Tuna Commission
MP	Management Procedure
MPD	Management Procedures Dialogue
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
SC	Scientific Committee, of the IOTC
SSB	Spawning stock biomass
SPC	Secretariat of the Pacific Community
tRFMO	tuna Regional Fisheries Management Organization
TAC	Total Allowable Catch
TCMP	Technical Committee on Management Procedures
WP	Working Party of the IOTC
WPB	Working Party on Billfish of the IOTC
WPEB	Working Party on Ecosystems and Bycatch of the IOTC
WPM	Working Party on Methods of the IOTC
WPNT	Working Party on Neritic Tunas of the IOTC
WPDCS	Working Party on Data Collection and Statistics of the IOTC
WPTmT	Working Party on Temperate Tunas of the IOTC
WPTT	Working Party on Tropical Tunas of the IOTC
YFT	Yellowfin Tuna

**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 and 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**).

## TABLE OF CONTENTS

1.	OPENING OF THE SESSION AND ARRANGEMENTS .....	7
2.	ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION .....	7
3.	ADMISSION OF OBSERVERS .....	7
4.	DECISIONS OF THE COMMISSION RELATED TO THE WORK OF THE TCMP .....	8
4.1	RESOLUTION 16/09 – TERMS OF REFERENCE.....	8
4.2	OUTCOMES OF THE 4TH SESSION OF TCMP.....	8
4.3	OUTCOMES OF THE 25TH SESSION OF THE COMMISSION.....	8
4.4	OUTCOMES OF THE 24 <sup>TH</sup> SESSION OF THE SCIENTIFIC COMMITTEE .....	9
5.	INTRODUCTION TO MSE .....	10
5.1	MANAGEMENT PROCEDURES AND MSE:.....	10
5.2	DEMONSTRATION OF MSE CAPACITY BUILDING TOOLS.....	10
5.3	SC PROPOSAL FOR THE STANDARD PRESENTATION OF MSE RESULTS .....	11
6.	STATUS OF THE MANAGEMENT PROCEDURE EVALUATION/OPERATING MODELS.....	11
6.1	BIGEYE TUNA.....	11
6.2	ALBACORE TUNA .....	12
6.3	SKIPJACK TUNA .....	13
6.4	YELLOWFIN TUNA.....	14
6.5	SWORDFISH.....	14
7.	DISCUSSION ON THE ACTIONS NEEDED FOR THE ADOPTION OF MANAGEMENT PROCEDURES, INCLUDING BUDGET	14
7.1.	BIGEYE TUNA.....	14
7.2.	ALBACORE TUNA .....	16
7.3.	SKIPJACK TUNA.....	17
7.4.	YELLOWFIN TUNA .....	17
7.5.	SWORDFISH TUNA.....	17
8.	STOCK STATUS GUIDANCE AND REFERENCE POINTS.....	17
9.	FUTURE DIRECTION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES .....	17
	Appendix I List of Participants.....	19
	Appendix II Agenda for 5 <sup>th</sup> IOTC Technical Committee on Management Procedure .....	26
	Appendix III List of documents.....	28

## EXECUTIVE SUMMARY

The Indian Ocean Tuna Commission has established a dedicated Technical Committee of Management Procedures (TCMP) as a formal communication channel between science and management to enhance decision-making response of the commission in relation to Management Procedures (MPs). The fifth Technical Committee on Management Procedures meeting was held on the 13–14 May 2022. Due to the COVID-19 pandemic, the meeting was held in a hybrid format, with two-person delegations present physically in the meeting room, and other participants attending by videoconference. Dr. Toshihide Kitakado, the Chair of the Scientific Committee, opened the meeting and welcomed attendees. Dr. Kitakado emphasized the importance of a formal forum for engaging both scientists and decision makers in the process of developing Management Procedures for key IOTC species. The meeting was co-chaired by Ms Jung-re Riley Kim (chair of the IOTC Commission). The Chairs welcomed 132 delegates from 25 Contracting Parties of the Commission and 9 Observers (including 9 invited experts) to the session. The list of participants is provided in Appendix I.

- (Para. 58) The next technical issue discussed by the TCMP related to the choice of MP. Two distinct MPs were included in the proposal for discussion, namely the Model-based hockey stick (PT-HS, MP1\_Harvest) and the Model-based Catch and CPUE projection (PT-PROJ, MP2\_Target). The TCMP **NOTED** that both MPs have very similar results with subtle differences in the outputs (e.g. catch stability, short term catch levels, population status at the end of the reference years) that require consideration by the Commission and no consensus was reached on which MP was preferable for the TCMP. The TCMP **NOTED** that both candidate MPs for BET, reviewed by the SC, are acceptable and meet the management objectives for the stock. As such the TCMP **RECOMMENDED** that the Commission discuss them both and consider selecting one MP for adoption.
- (Para. 77) The TCMP **NOTED** that CPCs require time to process the outputs of the SC in order to fully explore and understand the advice provided using the MSE process. To facilitate this, the TCMP **RECOMMENDED** that the Commission endorse holding a virtual TCMP meeting early each year with a view to discuss or narrow down the alternative candidate MPs proposed by the SC, providing sufficient time for CPCs to discuss the outputs of the SC and consider developing proposals based on them. The TCMP would then meet again physically prior to the Commission.

## 1. OPENING OF THE SESSION AND ARRANGEMENTS

1. The fifth Technical Committee on Management Procedures meeting was held on the 13–14 May 2022. Due to the COVID-19 pandemic, the meeting was held in a hybrid format, with two-person delegations present physically in the meeting room, and other participants attending by videoconference.
2. Dr. Toshihide Kitakado, the Chair of the Scientific Committee, opened the meeting and welcomed attendees. Dr. Kitakado emphasized the importance of a formal forum for engaging both scientists and decision makers in the process of developing Management Procedures for key IOTC species.
3. The meeting was co-chaired by Ms Jung-re Riley Kim (chair of the IOTC Commission). The Chairs welcomed 132 delegates from 25 Contracting Parties of the Commission and 9 Observers (including 9 invited experts) to the session. The list of participants is provided in [Appendix I](#).

## 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

4. The Scientific Committee Chair **NOTED** that the TCMP was established to enhance the effective communication and mutual understanding between science and management, and to facilitate decision-making response of the commission on matters related to management procedures. To this aim, scientists presented progress in developing and evaluating management procedures for the key tuna stocks in the Indian Ocean, in accordance with the decision framework as prescribed in Resolution 15/10 and associated workplan agreed by the Commission.
5. The adopted agenda for the meeting is presented in [Appendix II](#). The documents presented to the TCMP are listed in [Appendix III](#).

## 3. ADMISSION OF OBSERVERS

6. The TCMP **NOTED** that the applications by new Observers should continue to follow the procedure as outlined in Rule XIV of the IOTC Rules of Procedure (2014).

### ***Non-governmental Organisations (NGO)***

7. In accordance with Rule VI.1 and XIV.5 of the IOTC Rules of Procedure (2014), the TCMP **ADMITTED** the following Non-governmental organisations (NGO) as observers to the 5<sup>th</sup> Session of the TCMP.
  - Global Tuna Alliance
  - International Pole-and-line Foundation
  - International Seafood Sustainability Foundation
  - Pacific Islands Forum Fisheries Agency (FFA)
  - PEW Charitable Trusts
  - Shark Guardian
  - Sharkproject
  - International Sustainable Fisheries and Communities Trust
  - The Ocean Foundation
  - United States of America
  - Western and Central Pacific Fisheries Commission (WCPFC)

- World Wide Fund for Nature (WWF)

#### ***Invited experts***

8. In accordance with Rules VI.1 and XIV.9 of the IOTC Rules of Procedure (2014), the Commission may invite consultants or experts, in their individual capacity, to attend the meetings or participate in the work of the Commission as well as the Scientific Committee and the other subsidiary bodies of the Commission. The TCMP **ADMITTED** the following invited experts as observers to the 5<sup>th</sup> Session of the TCMP.

- Taiwan, Province of China

## **4. DECISIONS OF THE COMMISSION RELATED TO THE WORK OF THE TCMP**

### **4.1 RESOLUTION 16/09 – TERMS OF REFERENCE**

9. The TCMP **NOTED** paper IOTC–2022–TCMP05–06 which outlined the objectives, tasks and priorities of the Technical Committee on Management Procedures as established by the Commission through Resolution 16/09. This Resolution calls for the TCMP to focus on the presentation of results and exchange of information, and to emphasize the aspects of the Management Strategy Evaluation process that require a decision by the Commission, when undertaking the evaluation and discussion of management procedures for the IOTC fisheries.

10. The TCMP **RECALLED** that the Resolution required that the “(Para. 9) *The need for a continuation of the Technical Committee on Management Procedures shall be reviewed no later than at the Annual Session of the Commission in 2019*” and that this had been done and approval for the continuation of the TCMP was given by the Commission at its 23<sup>rd</sup> session.

### **4.2 OUTCOMES OF THE 4TH SESSION OF TCMP**

11. The TCMP **NOTED** paper IOTC–2022–TCMP05–03 which summarised the main outcomes of the 4<sup>th</sup> Technical Committee on Management Procedures. The Report of the 4<sup>th</sup> TCMP provided the recommendations as below:

- (Para. 24) *The TCMP **RECOMMENDED** that the WPM and Ad-hoc Reference Points Working Group continue to have discussions in order to provide advice on the most suitable and robust types of reference points to be used for stock status determination.*
- (Para. 65) *The TCMP **NOTED** the implementation of a lag inherent in the MSE processes. There is often a lag of two to three years between the latest data available and the year for which a TAC is being estimated. In addition, there is a lag between the time the scientific advice is formulated and a possible CMM is formulated and implemented. The TCMP **RECOMMENDED** that the Commission take note of this issue and provide feedback as to whether this is acceptable or to review different options to reduce this lag in data reporting for management advice.*
- (Para. 85) *The TCMP **NOTED** that there have been delays in the MSE development and that this will require a revision to the timetable for the development of management procedures. The TCMP **RECOMMENDED** that the Commission endorse a request that a revised timetable to be developed by CPCs with assistance from the SC and WPM chairs along with the Secretariat and this could be presented to the SC in 2021.*
- (Para. 87) *The TCMP **RECOMMENDED** that the Commission continue to support capacity building initiatives through the TCMP to improve understanding and participation in the MSE process.*

12. The TCMP **NOTED** the outcomes from the previous session of the TCMP.

### **4.3 OUTCOMES OF THE 25TH SESSION OF THE COMMISSION**

13. The TCMP **NOTED** paper IOTC–2022–TCMP05–04 which outlined the main outcomes of previous session of the Commission, specifically related to the work of the TCMP and **AGREED** to consider, throughout the course of the current meeting, how best to provide the Scientific Committee with the information it needs in order to satisfy the Commission’s requests. The Report of the 25<sup>th</sup> Session of the Commission provided the following feedback:



- (Para. 44) The Commission **NOTED** that the report from the 4th meeting of the Technical Committee on Management Procedures (TCMP) had not yet been adopted and will be done so by correspondence. The Commission **NOTED**, however, that several Recommendations had been reviewed and agreed during the meeting and these were presented to the Commission by the SC Chair who co-chaired the meeting. The Recommendations were as follows:
  - That the WPM and ad-hoc reference points working group continue to have discussions in order to provide advice on the most suitable and robust types of reference points to be used for stock status determination.
  - That the Commission take note of this [lag inherent in the MSE processes] issue and provide feedback as to whether this is acceptable or to review different options to reduce this lag in data reporting for management advice.
  - That the Commission endorse a request that a revised timetable to be developed by CPCs with assistance from the SC and WPM chairs along with the Secretariat and this could be presented to the SC in 2021.
  - The Commission continue to support capacity building initiatives through the TCMP to improve understanding and participation in the MSE process.
- (Para. 45) The Commission **NOTED** that further work is required on understanding the determination of stock status relative to Reference Points and endorsed the TCMP request continue the deliberations of the ad-hoc working group to continue to work on this matter intersessionally in preparation for the TCMP in 2022.
- (Para. 46) The Commission **SUPPORTED** the important work conducted by the TCMP and **NOTED** the continued support received from CPCs and the Commission to fund the activities. The Commission further **NOTED** the important platform provided by the TCMP for increasing dialogue between scientists and managers.
- (Para. 47) The Commission **URGED** the TCMP to continue with capacity building initiatives to facilitate understanding of the process and increase participation by all parties to facilitate smooth implementation of the MSE process.
- (Para. 48) India requested the Scientific Committee and TCMP consider including simulations which can differentiate between the stock in Exclusive Economic Zones (EEZs) and those on the High Seas to account for the implications of the MPs on these two components of the stocks.

14. The TCMP **NOTED** the Secretariats presentation on the outcomes of the 25<sup>th</sup> Session of the Commission and **AGREED** that any necessary issues would be discussed during the current session of the TCMP.

#### 4.4 OUTCOMES OF THE 24<sup>TH</sup> SESSION OF THE SCIENTIFIC COMMITTEE

15. The TCMP **NOTED** paper IOTC-2022-TCMP05-05 which outlined the main outcomes of 24<sup>th</sup> Session of the Scientific Committee that specifically related to the work of the TCMP.

16. The TCMP **NOTED** the feedback provided by the SC on MSE issues including the following recommendations:

- (Para 114): The SC **NOTED** the guidelines included as Appendix 6a to this report to deal with exceptional circumstances in the MSE process. The SC further **NOTED** that these guidelines are a living document and revisions may still be required in the future. The SC **RECOMMENDED** that the Commission consider and endorse the guidelines.
- (Para 115): The SC **NOTED** the revised schedule of MSE work included as Appendix 6b to this report to provide the timeframe for the development of management procedures for key IOTC species. The SC **NOTED** that the revised MSE schedule is still ambitious but that the technical work could, in principle, be completed within the proposed timeframes with minor adjustments. The SC **RECOMMENDED** that the Commission consider and endorse the revised timetable.

17. The TCMP **NOTED** that the guidelines for exceptional circumstances need to be discussed further. The TCMP **ACKNOWLEDGED** that the scientific aspects of exceptional circumstances had been taken into account, but the corresponding management options had not been fully elaborated and this would be required to fully account for this issue. The TCMP **NOTED** that this would be further discussed under item 7 below.

## 5. INTRODUCTION TO MSE

### 5.1 MANAGEMENT PROCEDURES AND MSE:

#### 5.1.1 Basic principles, Roles and responsibilities, dialogue tools and feedback mechanism

18. The TCMP **NOTED** a presentation by the SC Chair which provided an introduction to the basic principles of the MSE process and the history of MSE activities in the IOTC. The presentation also highlighted several important aspects of the MSE processes, such as 1) the difference between “projections based on stock assessments” and “projections in an MSE process”; 2) the difference between “management procedure (MP)” and “harvest control rule (HCR)” as this is particularly relevant for the ongoing Skipjack tuna MSE work; and 3) the difference between an “operating model (OM)” and an “assessment model”. The TCMP **THANKED** the SC chair for his clear and informative presentation that was useful for the subsequent discussions held during the TCMP05.
19. The TCMP **NOTED** that several technical terms related to the MSE process are often used interchangeably with different meaning depending on the context which can create some confusion.
20. The TCMP **NOTED** that the tuning process is one of the most important points in the IOTC and that it is important to identify the highest priority tuning criteria. The TCMP further **NOTED** that a strong connection between management objectives and tuning criteria should be established.
21. The TCMP **NOTED** the issue of the time lag between data being used in stock assessments, the application and then final implementation of MPs which can be between 2 and 3 years. The TCMP **NOTED** that it would be helpful for the TCMP or Commission to develop a mechanism to reduce this time lag in order to help to improve the MP performance.
22. The TCMP **NOTED** that indicators such as socio-economic factors should be considered while setting management objectives as there is no other way to take these into consideration in MPs.
23. The TCMP **NOTED** that CPUE indices continue to be the most important inputs into operating models further **NOTING** that improvements to data and CPUE indices will contribute to improvements in the performance of an MP. The TCMP **NOTED** that CPUE series are not yet available for many of the neritic tuna species so it will be difficult to set robust MPs for these species but further **NOTED** that improvements are being made to data so CPUE series should be available for use in MPs for these species in the coming years.
24. The TCMP **NOTED** the recurring OM reconditioning that has been deemed necessary during the MSE process for several species to date. This OM reconditioning has been extremely time consuming due to the amount of work required for reconditioning and for the SC to consider the reconditioned OMs. The TCMP further **NOTED** the need to set conditions under which reconditioning will be considered to be necessary through the development procedures around exceptional circumstances which will be discussed further in Section 7.
25. The TCMP **NOTED** that while implementation errors have not been considered for base case scenarios to date, discussions have been held regarding the validity of catch data and over catches during robustness testing. The TCMP **NOTED** the possibility of the composition of fisheries changing over time due to factors such as changes to catch allocations. The TCMP **NOTED** that currently the total TAC is distributed amongst fisheries based on the knowledge of the current fishery composition and so future changes to the composition of fisheries due to changing allocations and other such factors will affect the selectivity of these fisheries on the populations. The TCMP **NOTED** that complicated topics like this have not yet been considered within the MPs under the current development but could be considered in the future iterations of MP development when the MPs have been finalised.

### 5.2 DEMONSTRATION OF MSE CAPACITY BUILDING TOOLS

26. The TCMP **NOTED** a presentation by consultants funded by an Australian grant that outlined tools for capacity building and promoting increased understanding of the MSE process. The Consultants demonstrated educational materials as well as a Shiny app that will be incorporated into the IOTC website for continued use by interested

parties.

27. The TCMP **NOTED** that these tools are being designed in order to introduce the MSE process to a wider audience. The TCMP **ENCOURAGED** the group to provide feedback on these tools as soon as possible for inclusion in the final product, further **NOTING** that links to the Google docs feedback form and the shiny app webpage are available in the paper [IOTC-2022-TCMP05-INF01\\_Rev2](#).

28. The TCMP **NOTED** that these are potentially very useful resources for building and strengthening MSE capacity in the IOTC and that it may be beneficial to use these in a hands-on exercise (as was done during the TCMP meeting in 2019).

### 5.3 SC PROPOSAL FOR THE STANDARD PRESENTATION OF MSE RESULTS

29. The TCMP **NOTED** a presentation by the Chair on a proposal for presenting MSE results including a sample template. The TCMP **NOTED** that this template was discussed during the WPM who concluded that it is a useful resource for the TCMP and **ENCOURAGED** the provision of feedback in order to refine the template in future iterations.

## 6. STATUS OF THE MANAGEMENT PROCEDURE EVALUATION/OPERATING MODELS

### 6.1 BIGEYE TUNA.

30. The TCMP **NOTED** paper IOTC-2022-TCMP05-07 which provided a Bigeye tuna management procedure for adoption, including the following abstract provided by the authors:

*“This document provides background information to inform the Commission’s decision on the adoption of a Bigeye Tuna Management Procedure (MP), as outlined in the Commission workplan. The final two candidate Management Procedures (MP1\_Harvest and MP2\_Target) have very similar performance and are likely to meet the Commission’s objectives with a high probability. The advantages of MP1\_Harvest are slightly higher average catches and slightly better initial performance in the years after a poor recruitment period (in robustness tests). The advantages of MP2\_Target are a lower probability of an initial catch reduction below recent average levels, a smaller initial catch decrease, lower catch variability, and lower probability of going over or under MSY at the end of the projection period. MP2\_Target also showed a lower probability of SSB falling below the biomass limit reference point (50%SBMSY) and lower probability of exceeding the fishing mortality limit reference point (130%FMSY) (in robustness tests).” – see document for full abstract*

31. The TCMP **NOTED** that bigeye tuna MSE work has been ongoing for many years and significant progress has been made to bring the MSE up to date. The TCMP would like to thank the modelers, the MSE Task Force, and the members involved in the process for their efforts and contributions to the development of bigeye tuna MSE.

32. The TCMP **NOTED** that the MSE operating models were updated up to 2020, and the two candidate MPs were tuned to each of the (two) tuning criteria (i.e., 60% and 70% probability of being in the Kobe green zone by 2034-2038).

33. The TCMP **NOTED** the two candidate MPs are: 1) MP1\_Harvest- A biomass dynamic model and hockey stick HCR, which uses the relative biomass and fishing mortality estimates, from the model, in the HCR to calculate TAC. 2) MP2\_Target - A biomass dynamic model with catch estimation and projection to meet the pre-specified future biomass depletion level.

34. The TCMP **NOTED** that; MP1\_Harvest produces slightly higher average catches but a higher probability of initial catch decrease; MP2\_Target produces a smaller initial catch decrease, lower catch variability, and a lower probability of SSB falling below the biomass limit reference point (50%SBMSY) and lower probability of exceeding the fishing mortality limit.

35. The TCMP further **NOTED** that MP1\_Harvest is more robust against future recruitment reductions, at least in the early years but MP2\_Target performs better in scenarios where there is a positive trend in the longline catchability.

36. The TCMP **NOTED** that the time lag, including those in the population dynamics, CPUE and catch data, SC and committee decision-making processes, has been fully integrated into the MSE system and the same time lag applies to both MPs being evaluated.
37. The TCMP **NOTED** that depletion target used in the MP2\_Target is not the same as target in the management objective (being in the Kobe green). The depletion target is part of the control parameters in the MP which is to be tuned in the tuning process to achieve the tuning criteria. The TCMP agreed that it is important to make a distinction so as to not cause confusion.
38. The TCMP **NOTED** the clarifications on some technical aspect of the MSE: catch variability refers to future catch (TAC) set by the MP, not variability of past catches; OM has taken the same approach as the 2019 bigeye tuna assessment in addressing the uncertainty of reported catch and size data. The TCMP also **NOTED** that the new growth curve is likely to have an impact on stock assessment estimate, particularly biomass related numbers, but the impact can be better evaluated in the assessment itself. The TCMP further **NOTED** other uncertainties such as recruitment shock and catch implementation error have been examined in the robustness trials.

## 6.2 ALBACORE TUNA

39. The TCMP **NOTED** paper IOTC–2022–TCMP05–08 which provided an Albacore Management Strategy Evaluation Update, including the following abstract provided by the authors:

*“• The reference operating model for the Indian Ocean albacore tuna stock was developed over the last two years and has been endorsed by the IOTC scientific committee. The OM was developed based on the 2019 WPTmT SS3 assessment, and covers the dynamics of the stock until the year 2017.*

*• This OM has been updated to the current year by projecting the stock forward based on the reported catches for 2018, 2019 and 2020, and then assuming fishing mortality in 2021 was equal to that of 2020. Model runs in the grid that could not explain the 2018-2020 reported catches, or could only do so with increases in effort of over 50% per year, were eliminated from the OM. Less than 10% of the model runs in the original grid remain in the final OM after the selection procedure.*

*• Further developments to the albacore MSE included the development and application of three types of candidate MPs, one data-based and two model-based, and the tuning of these MPs (i.e. defining the MP parameters that achieve a certain management goal) for a range of management objectives over the next 11 to 16 years. The two model-based MPs differ in the form of the Harvest Control Rule. One employs the standard hockey-stick, while the other responds to trends in estimated depletion. The later is being proposed given the apparent need for a recovery phase in this stock.*

*• Technical difficulties were encountered when running the model based MPs, and the results presented below were obtained from simulation in which a perfect stock assessment is assumed, instead of the outcome of the stock assessment proposed for this stock.*

*• The main feedback priority for the TCMP-05 is to get confirmation on the range of proposed MPs, including the acceptability of new trend-based HCRs, as well as on the current management objectives to be achieved by the tuning procedure”*

40. The TCMP **NOTED** that the albacore tuna OMs are based on the 2019 assessment and covered the fishery dynamics until year 2017. As such, the albacore tuna MSE is experiencing a 3 year time lag (2 year for data and 1 year for the TAC advice).
41. The TCMP **NOTED** the albacore MSE is evaluating a model-based MP, a data-based MP, and a trend-based MP (assuming reliable stock estimates are available without fitting to the data). The data-based MP is driven by the longline CPUE which does not have information on overall catches, whereas the model-based MP uses both CPUE and catch to infer stock status information. The model-based MP tends to keep the stock at higher level and yield

higher catches because it is more responsive and is faster in bringing to stock to the desired level.

42. The TCMP **NOTED** there is a technical issue with the implementation of JABBA used in the model-based MP to inform stock status, thus the OM assumed perfect assessment estimates with some random errors. The TCMP further **NOTED** that this “short-cut” approach applies only to the model-based MP, not the data-based MP.
43. The TCMP **NOTED** that the use of term “recovery phase” when describing the MP performance might be misleading for albacore as the stock assessment suggested the stock is not overfished although there is excessive fishing pressure. The TCMP **NOTED** the OM has expanded the assessment grid to characterise the uncertainty on the stock status and consequently the OM is being relatively more pessimistic than the stock assessment. The TCMP further **NOTED** that the OMs are run on the full grid, not a partial factorial design, but a subset of models have been dropped for not being able to sustain recent reported catches without unrealistically high fishing mortality.
44. The TCMP **NOTED** albacore may be a good candidate for testing the alternative approach of OM conditioning which is not directly built on the assessment model. The TCMP agreed that the details of this approach require a more technical presentation. The TCMP further **NOTED** the alternative OM would implement similar dynamics and use similar data as the stock assessment model, but emphasis is not on replicating the estimates of stock status but to better characterise the uncertainty on future productivity of the stock. The proposed approach is not intended to break away from the stock assessment but will reflect more on the different perspectives of MSE and stock assessment model.
45. The TCMP reiterative the importance and usefulness of using standardised presentation style for the MSE of different stocks to help improve understandings.

### 6.3 SKIPJACK TUNA

46. The TCMP **NOTED** paper IOTC–2022– TCMP05–09 which provided an Presentation of an empirical MP for Indian Ocean skipjack tuna, including the following abstract provided by the author:

*“The primary objective of this work is to develop a Management Procedure (MP) for Indian Ocean Skipjack tuna (SKJ), which includes specification of the data inputs, harvest control rule (HCR) and management outputs, and that has been fully tested using an appropriate simulation framework. Following the presentation of developmental work to the Working Party on Methods (WPM; Edwards, 2020, IOTC, 2020a) and the Technical Committee on Management Procedures (TCMP; Edwards, 2021b, IOTC, 2021c), in which a suitable simulation framework was proposed, evaluations of an empirical MP were presented to the WPM (Edwards, 2021a), and the MSE Task Force (Edwards, 2022). The current work presents a summary of that work and proposes a set of empirical MPs for consideration by the TCMP.”*

47. The TCMP **NOTED** the depletion-based target (40% B<sub>0</sub>) reference lines in Kobe plot and discussed whether the MSY-based reference points should be displayed at the green-zone border instead. The reason is the stock is fluctuating around the 40% B<sub>0</sub>, there is little risk of violating the MSY biomass threshold/target. However, specifying a depletion-based target on the Kobe plot can be misleading as it can be misunderstood as equivalent to B<sub>msy</sub>. The TCMP **RECALLED** that it was agreed that MP should be tuned to the depletion-based target. However, the TCMP **NOTED** there has been ongoing discussion at the WPM and SC on the stock status definition (in the context of defining overfishing or overfished status) for skipjack tuna in relation to different reference points measured/presented (e.g., the depletion-based reference points as per 16/02 and the MSY based reference points as per 15/10).
48. The TCMP **NOTED** that 20%, 30%, and 40% of catch overrun has been examined in the robustness trials and the performance of MP deteriorates with higher implementation error. The TCMP discussed the two strategies proposed to better deal with TAC implementation error: option 1 is to design an MP to be robust to the implementation error (by incorporating the implementation error in the tuning process); option 2 is to determine an acceptable level of reduction in performance (e.g., biomass 20% below expectation) and identify the associated

implementation error. It was noted that option 1 is easier to implement but there is the need to agree on the level of implementation error whereas option 2 is considered to be a more robust approach.

#### 6.4 YELLOWFIN TUNA

49. The TCMP **NOTED** the discussion of an IOTC Yellowfin Tuna Management Procedure Evaluation Update.

50. The TCMP **RECALLED** that the previous OM has some critical issues which are closely related to the issues that occurred in the recent yellowfin stock assessment model. The TCMP **NOTED** that very good progress has been made in the most recent yellowfin assessment although some issues remain. The TCMP **NOTED** the proposed pathway forward for the yellowfin MSE: the modeller is to investigate whether the current assessment model is suitable for OM conditioning. If this is not the case, the modeller will explore an alternative approach for OM conditioning which is not directly based on the assessment model. Results will be discussed at the WPTT, WPM and SC in 2022.

#### 6.5 SWORDFISH

51. The TCMP **NOTED** paper IOTC–2022–TCMP05–10 which provided a Swordfish Management Strategy Evaluation Update, including the following abstract provided by the authors:

*“• The reference operating model for the Indian Ocean swordfish stock was developed over the last two years and has been endorsed by the IOTC scientific committee. The OM was developed based on the 2019 WPB SS3 assessment, and covered the dynamics of the swordfish until the year 2018. This OM was updated to the current year, by projecting the stock forward based on the reported catches for 2019 and 2020. The choices made in 2019 for the construction of the OM by the previous researcher have not been revisited.*

*• Further developments to the swordfish MSE included the development and application of two types of candidate MPs, one model based and one data based, and the tuning of these MPs (i.e. defining the MP parameters that achieve a certain management goal) for a range of management objectives over the next 11 to 15 years.*

*• Technical difficulties were encountered when running the model based MPs, and the results presented below were obtained from simulation in which a perfect stock assessment is assumed, instead of the outcome of the stock assessment proposed for this stock.*

*• The main feedback priority for the TCMP-05 is to get agreement on the range of proposed MPs to be fully tested, as well as on the current management objectives to be achieved for the tuning procedure.”*

52. The TCMP **NOTED** that the data-based MP provides higher average spawning biomass but wider distribution, whereas model-based MP has lower catches with narrower distribution but high inter annual variability. The TCMP also **NOTED** the swordfish MSE is experiencing a similar technical issue (as in the albacore tuna MSE) with the implementation of JABBA used in the model-based MP to inform stock status where in many runs JABBA was unable to obtain a reliable estimate of stock status and the MP assumed that accurate stock estimates were available and the conclusion may change when the actual JABBA is finally run to fit the data in these cases.

### 7. DISCUSSION ON THE ACTIONS NEEDED FOR THE ADOPTION OF MANAGEMENT PROCEDURES, INCLUDING BUDGET

#### 7.1. BIGEYE TUNA

53. The TCMP **NOTED** a proposal tabled by Australia, IOTC–2022–S26–PropG which provided a Draft Resolution on a management procedure for bigeye tuna.

54. The TCMP **THANKED** the proponents for providing this document to the TCMP and facilitating constructive discussions on its components, which will be used to develop a revised proposal for presentation to the Commission.

55. The TCMP **ACKNOWLEDGED** the extensive work conducted on the BET MSE and the collaborative efforts to bring this work to a mature stage. The TCMP **AGREED** that momentum should not be lost and that the work was of a sufficiently advanced stage to be discussed by the Commission for possible adoption as a CMM.

56. The TCMP further **NOTED** several comments on the composition of the proposal. The TCMP **NOTED** that the current

text of the proposal does not include the management objectives for the stock. The TCMP **DISCUSSED** the necessity of including this information as it is the guidance provided by the managers to the Scientists and is part of the dialogue process between Scientists and Managers, a crucial component of the MSE process. In addition, the proposal contained several references to external documents. Some CPCs expressed their preference to have the text from those documents included into the body of the proposal as external documents could be superseded and replaced and this could complicate the understanding of the proposal.

57. The TCMP **NOTED** that there were some key technical components of the proposal that required further discussion. The first related to the tuning criteria proposed for the MP. The current proposal included tuning of 60% and 70% probability of being in the Kobe green quadrant over the reference years. The TCMP **DISCUSSED** that this should be guided by the management objectives and therefore including wording proposing that the probability of being in the green zone should be above 60% would facilitate both tuning criteria and allow the Commission to decide on the desirable level.

58. The next technical issue discussed by the TCMP related to the choice of MP. Two distinct MPs were included in the proposal for discussion, namely the Model-based hockey stick (PT-HS, MP1\_Harvest) and the Model-based Catch and CPUE projection (PT-PROJ, MP2\_Target). The TCMP **NOTED** that both MPs have very similar results with subtle differences in the outputs (e.g. catch stability, short term catch levels, population status at the end of the reference years) that require consideration by the Commission and no consensus was reached on which MP was preferable for the TCMP. The TCMP **NOTED** that both candidate MPs for BET, reviewed by the SC, are acceptable and meet the management objectives for the stock. As such the TCMP **RECOMMENDED** that the Commission discuss them both and consider selecting one MP for adoption.

59. Another key component of the proposal is the schedule of implementation. As such, the TCMP **NOTED** paper IOTC–2022–TCMP05–11 which provided a schedule of activities: meta-rules for MP Implementation, including the following abstract provided by the authors:

*“As identified in the endorsed Schedule of Work for the Development of Management Procedures, the IOTC may select and adopt a Management Procedure (MP) for Bigeye Tuna in 2022, to provide a science-based Total Allowable Catch recommendation to the Commission in 2023. A clear understanding of the timing of aspects of the process and endorsement of the schedule of activities is required for successful implementation of the adopted MP. This document outlines a proposal for the schedule of activities, the timing and responsibility for flow of information in each step, and clarifies the role of the MP, operating models (OMs) and the stock assessment once an MP is adopted. The MSE taskforce agreed that the MP decision making year (when the MP is run to provide a TAC recommendation) should be offset from the year in which an assessment of stock status is conducted, so that these two processes remain distinct. This outline of the process also provides information on the time period (i.e. lag) between data exchange and TAC advice. This schedule of activities, to be adopted with the MP, is called the ‘meta-rules’.*

60. The TCMP **NOTED** the timeline for adoption of the MP and its implementation as provided in the proposal and the document. After substantial discussion on the process and addressing concerns raised by several participants, two revised proposals were summarised by the SC chair, and these are included in Table 1. The TCMP **NOTED** the revised timetables and **ACKNOWLEDGED** the need for further discussion during the Commission meeting.

Table 1: Timetable for MP adoption and implementation as well as assessment schedule based on 3 proposals (SA – Stock Assessment).

Source	Focus	2022	2023	2024	2025	2026	2027
Prop G	MP TAC	BET MP adoption & MP run (TAC 2024-26)			BET MP run (TAC 2027-29)		
	SA		BET			BET	
AUS Revised Proposal	MP TAC	BET MP adoption & MP run (TAC 2024-25)		BET MP run (TAC 2026-28)			
	SA	Prelim BET	Final-BET, SKJ	YFT	BET	SKJ	YFT
EU Revised Proposal	MP TAC	BET MP adoption	BET MP run (TAC 2024-26)			BET MP run (TAC 2027-29)	
	SA	BET	SKJ	YFT	BET	SKJ	YFT

61. The TCMP **REQUESTED** clarification on the Revised Australian proposal to conduct a preliminary stock assessment in 2022 with a final assessment in 2023. It was clarified that the preliminary assessment would review the latest information and conduct the bulk of the work towards the assessment, but in order to offset the assessment year from the MP run year (something considered best practice for MP implementation in order to separate the assessment and MSE processes), the assessment would be updated in 2023 with only the latest years catch data added to the assessment.

62. The TCMP also **NOTED** the need for discussion and agreement on how the TAC is implemented once the MP is run. Some participants felt the Commission should agree to an automated process where the MP is run during the SC in December 2022 and the TAC is adopted by default and applied immediately to the following year (in January) without need for review by the Commission (as is the case for the SKJ HCR). Others however expressed their concern that this did not allow time for the national administrations to advise their fleets of the new catch levels and also did not allow for the incorporation of exceptional circumstances, should these be triggered, in a transparent way.

63. Regarding exceptional circumstances, the TCMP **NOTED** that these would be reviewed annually after adoption of an MP. If the SC determines that the criteria to qualify for exceptional circumstances are met, the SC would recommend to the Commission the severity of the situation and how the scientific advice should be modified (such as a possible revision of the TAC). The TCMP further **NOTED** that the SC discussion on Exceptional Circumstances covered the scientific aspects of this issue, but that further discussion was needed by the Commission to decide on protocols for the actions that should be taken from a management point of view, to account for the revised advice by the SC.

## 7.2. ALBACORE TUNA

64. The TCMP **NOTED** that for the ALB MP implementation, a 2 and 4 year lag had been simulated. The TCMP **ACKNOWLEDGED** that for a long lived species, this time lag was not too critical, but could have implications for shorter lived species such as SKJ.

65. The TCMP **DISCUSSED** the necessity to constrain the TAC changes, between management periods, even if the stock is below BMSY (but not Blim) to ensure stability for the fishery. Different options for TAC changes could be explored, but not exceed 30%. The developer was also **REQUESTED** to explore asymmetric TAC estimations but not be limited



to this option only and continue with symmetric options as well.

66. The developer was also **REQUESTED** to include a minimum catch mechanism, not only to support a bycatch and subsistence harvest, but also to ensure the continued availability of data for scientific monitoring purposes.

### 7.3. SKIPJACK TUNA

67. The TCMP **NOTED** that previously, a request had been made to the developer to remove positive bias in catches and therefore implementation error had been removed from the OM tuning. The TCMP **AGREED** that it is best practice to include implementation error and this option should once again be explored in the tuning. In addition, the tuning should continue to use the three options for being in the green zone of 50, 60 and 70%.

68. The TCMP **NOTED** that the Kobe quadrants for skipjack tuna are currently delineated based on the depletion-based reference points outlined in Resolution 16/02. However, there was a suggestion that the Kobe quadrant should be based on MSY-based reference points, with the stock status in relation to depletion-based target reference points clearly laid out on the Kobe plot. The SC chair clarified that the current Res 16/02 clearly specifies depletion-based reference points for the SKJ stock and so this will continue to be the default presentation of the results, but that the possibility of including MSY based point will be explored also in relation to portraying the green-zone.

69. The TCMP **NOTED** there were technical issues in calculating MSY-related reference points for SKJ in the early assessments for this species, but recent assessments have been able to estimate and report on estimated MSY reference points. However, it is not clear whether these estimated MSY quantities are robust enough to be established as reference points for skipjack tuna. The TCMP **SUGGESTED** this issue be further discussed by the relevant working parties (WPM and WPTT).

### 7.4. YELLOWFIN TUNA

70. The TCMP **NOTED** that discussions were ongoing regarding different methods for conditioning the OM. These options had not been reviewed by the SC and therefore this discussion would continue in 2022 and would be reported back to the TCMP in 2023.

### 7.5. SWORDFISH TUNA

71. The TCMP **NOTED** that the comments related to SWO were similar to those made for ALB and had been presented and discussed together.

## 8. STOCK STATUS GUIDANCE AND REFERENCE POINTS

72. The TCMP **NOTED** a brief presentation by the SC chair on reference points used by the IOTC and in other tuna RFMOs. The SC chair also briefly introduced two papers that are being considered by the SC to guide the discussions on reference points at the IOTC ([IOTC-2021-TCMP04-12](#) and [IOTC-2022-WPM13\(MSE\)-08](#)). The TCMP **NOTED** the SC intention of merging these documents and providing feedback on this issue in 2023.

## 9. FUTURE DIRECTION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES

### 9.1 WORKPLAN

#### 9.1.1 New timelines

73. The TCMP **NOTED** that no major changes were proposed to the timetable for MP development. The only potential revisions would be a modification to the BET timetable based on whether the proposed CMM on an MP for this species is adopted by the Commission.

#### 9.1.2 Budget and resources needed for technical developments

74. The TCMP **ACKNOWLEDGED** the importance of extra-budgetary contributions from the European Union and Australia in accelerating the MSE work since 2016.

#### 9.1.3 External review

75. The TCMP **NOTED** a very brief presentation by the Secretariat on document [IOTC-2021-SC24-INF06](#) which provided

---

the Terms of Reference for the Bigeye Tuna Peer review process. The TCMP **NOTED** these terms of reference that were endorsed by the SC and **ENCOURAGED** the SC to proceed with this process.

### 9.2 PRIORITIES

76. The TCMP **NOTED** that simultaneous work is being conducted on several species and that prioritising one species over another is difficult. The TCMP **ACKNOWLEDGED** that an MP for bigeye tuna is ready for consideration by the Commission and the skipjack MP is close to completion and consideration by the SC, TCMP and Commission. There is a great deal of interest in the completion of the yellowfin tuna and swordfish MSE as well. The TCMP **NOTED** that further work is required to advance the albacore MSE and that resources should also be dedicated to this species.

### 9.3 PROCESS AND FUTURE MEETINGS OF TCMP

77. The TCMP **NOTED** that CPCs require time to process the outputs of the SC in order to fully explore and understand the advice provided using the MSE process. To facilitate this, the TCMP **RECOMMENDED** that the Commission endorse holding a virtual TCMP meeting early each year with a view to discuss or narrow down the alternative candidate MPs proposed by the SC, providing sufficient time for CPCs to discuss the outputs of the SC and consider developing proposals based on them. The TCMP would then meet again physically prior to the Commission.

78. The Meeting was closed by the chair who informed the participants that the report would be adopted by correspondence.

**APPENDIX I**  
**LIST OF PARTICIPANTS**

**CHAIRPERSONS**

Ms Jung-re Riley Kim  
[Riley1126@korea.kr](mailto:Riley1126@korea.kr)

Mr Toshihide Kitakado  
[kitakado@kaiyodai.ac.jp](mailto:kitakado@kaiyodai.ac.jp)

**AUSTRALIA****Head Of Delegation**

Mr George Day  
Department of Agriculture,  
Water and the Environment  
[george.day@awe.gov.au](mailto:george.day@awe.gov.au)

**Alternate**

Mr Patrick Sachs  
Department of Agriculture,  
Water and the Environment  
[patrick.sachs@awe.gov.au](mailto:patrick.sachs@awe.gov.au)

**Advisor(s)**

Mr Neil Hughes  
Department of Agriculture,  
Water and the Environment  
[Neil.hughes@awe.gov.au](mailto:Neil.hughes@awe.gov.au)

Mr Nazmul Alam  
Department of Agriculture,  
Water and the Environment  
[nazmul.alam@agriculture.gov.au](mailto:nazmul.alam@agriculture.gov.au)

Ms Fiona Hill  
Australian Fisheries  
Management Authority  
[fiona.hill@afma.gov.au](mailto:fiona.hill@afma.gov.au)

Mr Don Bromhead  
Department of Agriculture,  
Water and the Environment  
[don.bromhead@awe.gov.au](mailto:don.bromhead@awe.gov.au)

Mr Ashley Williams

Commonwealth Scientific  
and Industrial Research  
Organisation  
[ashley.williams@csiro.au](mailto:ashley.williams@csiro.au)

Ms Ann Preece  
Commonwealth Scientific  
and Industrial Research  
Organisation  
[ann.preece@csiro.au](mailto:ann.preece@csiro.au)

Mr Richard Hillary  
Commonwealth Scientific  
and Industrial Research  
Organisation  
[rich.hillary@csiro.au](mailto:rich.hillary@csiro.au)

Mr Terry Romaro  
Ship Agencies Australia  
[terry@saa.com.au](mailto:terry@saa.com.au)

**BANGLADESH****HEAD OF DELEGATION**

Mr A.N.M Nazim  
Department of Fisheries  
[nazim22m@gmail.com](mailto:nazim22m@gmail.com)

**Alternate**

Mr Atiar Rahman  
Department of Fisheries  
[atiar\\_dof@yahoo.com](mailto:atiar_dof@yahoo.com)

**CHINA****Head Of Delegation**

Mr Jiangfeng Zhu  
Bureau of Fisheries  
[bofdwf@126.com](mailto:bofdwf@126.com)

**Alternate**

Mr Xiaobing Liu  
Shanghai Ocean University  
[xiaobing.liu@hotmail.com](mailto:xiaobing.liu@hotmail.com)

Ms Mengjie Xiao  
China Overseas Fisheries  
Association

[xiaomengjie@cofa.net.cn](mailto:xiaomengjie@cofa.net.cn)

Mr Yan Li  
China Overseas Fisheries  
Association  
[liyan@cofa.net.cn](mailto:liyan@cofa.net.cn)

Ms Qiuning Li  
China Overseas Fisheries  
Association  
[liqiuning@cofa.net.cn](mailto:liqiuning@cofa.net.cn)

Ms Shiyu Yang  
Shanghai Ocean University  
[yangshiyu\\_shou@163.com](mailto:yangshiyu_shou@163.com)

**COMOROS****Head Of Delegation**

Mr Said Boina  
Direction de la Pêche  
dalaili@live.fr

**Alternate**

Mr Kamal Thabiti  
Direction de la Pêche  
[thabitik@yahoo.fr](mailto:thabitik@yahoo.fr)

**Advisor(s)**

Mr Abdou Ali Maaloumi  
Direction de la Pêche  
[cmaaloumi@yahoo.fr](mailto:cmaaloumi@yahoo.fr)

Mr Kamal Mohamed  
Direction de la Pêche  
[kamalmohamed4@gmail.com](mailto:kamalmohamed4@gmail.com)

**EUROPEAN UNION****Head Of Delegation**

Mr Marco Valletta  
European Union  
[marco.valletta@ec.europa.eu](mailto:marco.valletta@ec.europa.eu)

**Alternate**

Mr Franco Biagi  
European Union

[franco.biagi@ec.europa.eu](mailto:franco.biagi@ec.europa.eu)

Ms Laura Marot  
European Union

[laura.marot@ec.europa.eu](mailto:laura.marot@ec.europa.eu)

Mr Benoit Marcoux  
European Union

[benoit.marcoux@ec.europa.eu](mailto:benoit.marcoux@ec.europa.eu)

Mr Paulien Depickere  
European Union

[paulien.depickere@ec.europa.eu](mailto:paulien.depickere@ec.europa.eu)

Mr Gorka Merino  
European Union

[gmerino@azti.es](mailto:gmerino@azti.es)

Ms Gloria Del Cerro  
European Union

[gcerro@mapa.es](mailto:gcerro@mapa.es)

Mr José Luis Jauregui  
European Union

[jljauregui@echebstar.com](mailto:jljauregui@echebstar.com)

**FRANCE(OT)**  
**Head Of Delegation**

Ms Anais Melard  
Ministère de la Mer

[anais.melard@agriculture.gouv.fr](mailto:anais.melard@agriculture.gouv.fr)

**Alternate**

Ms Juliette Haziza  
Ministère de la Mer

[juliette.haziza@agriculture.gouv.fr](mailto:juliette.haziza@agriculture.gouv.fr)

Ms Alice Boiffin  
Ministère de la Mer

[alice.boiffin@agriculture.gouv.fr](mailto:alice.boiffin@agriculture.gouv.fr)

Mr Francis Marsac

Institut de Recherche pour  
le Développement

[francis.marsac@ird.fr](mailto:francis.marsac@ird.fr)

**INDIA**

**Head Of Delegation**

Mr R. Jeyabaskaran  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[dg@fsi.gov.in](mailto:dg@fsi.gov.in)

**Alternate**

Mr. I. A. Siddiqui  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[ia.siddiqui@gov.in](mailto:ia.siddiqui@gov.in)

Ms Prathibha Rohit  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[prathibharohit@gmail.com](mailto:prathibharohit@gmail.com)

Mr E.M. Abdussamad  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[emasamadg@gmail.com](mailto:emasamadg@gmail.com)

Mr J. Jayasankar  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[jisankar@gmail.com](mailto:jisankar@gmail.com)

Mr. A. Tiburtius  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[tibufsi@yahoo.co.in](mailto:tibufsi@yahoo.co.in)

Mr. Ashok S. Kadam  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying

[ashoka\\_fsi@rediffmail.com](mailto:ashoka_fsi@rediffmail.com)

Mr K. Silambarsan  
Ministry for Fisheries,  
Animal Husbandry &  
Dairying  
[silambuplankton@hotmail.com](mailto:silambuplankton@hotmail.com)

**INDONESIA**

**Head of delegation**

Mr Ridwan Mulyana  
Ministry of Marine Affairs  
and Fisheries

[ridwan.mulyana@kkp.go.id](mailto:ridwan.mulyana@kkp.go.id)

**Alternate**

Ms Putuh Suadela  
Ministry of Marine Affairs  
and Fisheries

[putuhsuadela@gmail.com](mailto:putuhsuadela@gmail.com)

**Advisor(s)**

Mr Wudianto  
Ministry of Marine Affairs  
and Fisheries

[wudianto59@gmail.com](mailto:wudianto59@gmail.com)

Ms Lilis Sadiyah  
Ministry of Marine Affairs  
and Fisheries

[sadiyah.lilis2@gmail.com](mailto:sadiyah.lilis2@gmail.com)

Mr Bram Setyadji  
Ministry of Marine Affairs  
and Fisheries

[bramsetyadji@kkp.go.id](mailto:bramsetyadji@kkp.go.id)

Mr Ririk Kartika  
Sulitstyaningsih  
Ministry of Marine Affairs  
and Fisheries

[rk.sulistyaningsih11@gmail.com](mailto:rk.sulistyaningsih11@gmail.com)

Mr Hary Christijanto  
Ministry of Marine Affairs  
and Fisheries

[hchristijanto@yahoo.com](mailto:hchristijanto@yahoo.com)

Mr Yayan Hernuryadin  
Ministry of Marine Affairs  
and Fisheries  
[yhernuryadin@gmail.com](mailto:yhernuryadin@gmail.com)

Ms Riana Handayani  
Ministry of Marine Affairs  
and Fisheries  
[daya139@yahoo.co.id](mailto:daya139@yahoo.co.id)

Ms Mumpuni Cyntia Pratiwi  
Ministry of Marine Affairs  
and Fisheries  
[mumpuni.cpratiwi@gmail.com](mailto:mumpuni.cpratiwi@gmail.com)

Ms Sri Patmiarsih  
Ministry of Marine Affairs  
and Fisheries  
[sripatmiarsih@gmail.com](mailto:sripatmiarsih@gmail.com)

Mr Panca Berkah Susila  
Putra  
Ministry of Marine Affairs  
and Fisheries  
[pancazz37@gmail.com](mailto:pancazz37@gmail.com)

Ms Saraswati  
Ministry of Marine Affairs  
and Fisheries  
[cacasaras@gmail.com](mailto:cacasaras@gmail.com)

Mr Dwi Agus Siswa Putra  
Indonesian Longline Tuna  
Association  
[atli.bali@gmail.com](mailto:atli.bali@gmail.com)

Mr Richi Richado  
Indonesian Longline Tuna  
Association  
[long\\_way31184@hotmail.com](mailto:long_way31184@hotmail.com)

Mr Muhammad Febrianoer  
[mfebrianoer@gmail.com](mailto:mfebrianoer@gmail.com)

Mr Ahmad Almaududy Amri  
Ministry of Foreign Affairs  
[ahmad.almaududy@kemlu.go.id](mailto:ahmad.almaududy@kemlu.go.id)

**IRAN**  
**Absent**

**JAPAN**  
**Head Of Delegation**  
Mr Hiroyuki Morita  
International Affairs  
Division  
[hiroyuki\\_morita970@maff.go.jp](mailto:hiroyuki_morita970@maff.go.jp)

**Alternate**  
Ms Maiko Nakasu  
International Affairs  
Division  
[maiko\\_nakasu100@maff.go.jp](mailto:maiko_nakasu100@maff.go.jp)

Mr Nishida Tsutomu  
Fisheries Resources  
Institute  
[aco20320@par.odn.ne.jp](mailto:aco20320@par.odn.ne.jp)

Mr Matsumoto Takayuki  
Fisheries Resources  
Institute  
[matumot@affrc.go.jp](mailto:matumot@affrc.go.jp)

Mr Nozomu Miura  
Japan Tuna Fisheries Co-  
operative Association  
[miura@japantuna.or.jp](mailto:miura@japantuna.or.jp)

Mr Tokimura Muneharu  
Overseas Fishery  
Cooperation Foundation of  
Japan  
[tokimura@ofcf.or.jp](mailto:tokimura@ofcf.or.jp)

Mr Shunji Fujiwara  
Overseas Fishery  
Cooperation Foundation of  
Japan  
[roku.pacific@gmail.com](mailto:roku.pacific@gmail.com)

**KENYA**  
**Head of Delegation**

Mr Daniel Mungai  
State Department for  
Fisheries, Aquaculture and  
The Blue Economy  
[karemeri@gmail.com](mailto:karemeri@gmail.com)

**Alternate**  
Ms Lucy Obungu  
State Department for  
Fisheries, Aquaculture and  
The Blue Economy  
[lucy.ayugi@gmail.com](mailto:lucy.ayugi@gmail.com)

**Advisor(s)**  
Mr Stephen Ndegwa  
State Department for  
Fisheries, Aquaculture and  
The Blue Economy  
[ndegwafish@yahoo.com](mailto:ndegwafish@yahoo.com)

Mr Benedict Kiilu  
State Department for  
Fisheries, Aquaculture and  
The Blue Economy  
[bkiilu@yahoo.com](mailto:bkiilu@yahoo.com)

**KOREA**  
**Head of Delegation**

Ms Soobin Shim  
Ministry of Oceans and  
Fisheries  
[sbin8shim@korea.kr](mailto:sbin8shim@korea.kr)

**Alternate**  
Ms Soo Min Kim  
Korea Overseas Fisheries  
Cooperation Center  
[soominkim@kofci.org](mailto:soominkim@kofci.org)

**MADAGASCAR****Head Of Delegation**

Mr Mahefa Randriamiarisoa  
Ministère de la Pêche et de  
l'Economie Bleu  
[ranmahefa@yahoo.fr](mailto:ranmahefa@yahoo.fr)

**Alternate**

Mr Antoine Marolova  
Rasolomampionona  
Ministère de la Pêche et de  
l'Economie Bleu  
[lovastat.mrhp@gmail.com](mailto:lovastat.mrhp@gmail.com)

**MALAYSIA****Head Of Delegation**

Mr Arthur Besther Sujang  
Department of Fisheries  
Malaysia  
[arthur@dof.gov.my](mailto:arthur@dof.gov.my)

**Alternate**

Ms Nor Azlin binti Mokhtar  
Department of Fisheries  
Malaysia  
[nor\\_azlin@dof.gov.my](mailto:nor_azlin@dof.gov.my)

Ms Effarina binti Mohd  
Faizal Abdullah  
Department of Fisheries  
Malaysia  
[effarina@dof.gov.my](mailto:effarina@dof.gov.my)

**MALDIVES****Head Of Delegation**

Mr Adam Ziyad  
Ministry of Fisheries,  
Marine Resources and  
Agriculture  
[adam.ziyad@fishagri.gov.mv](mailto:adam.ziyad@fishagri.gov.mv)

**Alternate**

Ms Maleeha Haleem  
Ministry of Fisheries,  
Marine Resources and  
Agriculture  
[maleeha.haleem@fishagri.gov.mv](mailto:maleeha.haleem@fishagri.gov.mv)

**Advisor(s)**

Mr Hussain Sinan  
Ministry of Fisheries,  
Marine Resources and  
Agriculture  
[hsinan@gmail.com](mailto:hsinan@gmail.com)

Mr Mohamed Shimal  
Ministry of Fisheries,  
Marine Resources and  
Agriculture  
[mohamed.shimal@mmri.gov.mv](mailto:mohamed.shimal@mmri.gov.mv)

Mr Mohamed Ahusan  
Maldives Marine Research  
Institute  
[mohamed.ahusan@mmri.gov.mv](mailto:mohamed.ahusan@mmri.gov.mv)

**MAURITIUS****Head Of Delegation**

Mr Raj Kishore Bunjun  
Ministry of Blue Economy,  
Marine Resources, Fisheries  
and Shipping  
[rbunjun@govmu.org](mailto:rbunjun@govmu.org)

**Alternate**

Mr Jagdish Koonjul  
Permanent Representative  
of Mauritius to the UN  
[jkoonjul@gmail.com](mailto:jkoonjul@gmail.com)

**Advisor(s)**

Ms Meera Sathishchandra  
Koonjul  
Ministry of Blue Economy,  
Marine Resources, Fisheries  
and Shipping  
[mkoonjul@govmu.org](mailto:mkoonjul@govmu.org)

Ms Prema Appadu  
Ministry of Foreign Affairs,  
Regional Integration and  
International Trade  
[pappadu@govmu.org](mailto:pappadu@govmu.org)

Ms Clivy Lim Shung  
Ministry of Blue Economy,  
Marine Resources, Fisheries  
and Shipping  
[clim-shung@govmu.org](mailto:clim-shung@govmu.org)

Ms Veronique Garrioch  
IBL Seafood and Marine  
Operations  
[vero.garrioch@gmail.com](mailto:vero.garrioch@gmail.com)

**MOZAMBIQUE****Alternate**

Mr Cassamo Junior  
Ministry of the Sea, Inland  
Waters and Fisheries  
[cassamo.hassane@gmail.com](mailto:cassamo.hassane@gmail.com)

**Advisor (s)**

Mr Avelino Munwane  
Ministry of the Sea, Inland  
Waters and Fisheries  
[avelinomunwane@gmail.com](mailto:avelinomunwane@gmail.com)

**OMAN****Alternate**

Mr Al Muatasim Hamood Al  
Habsi  
Ministry of Agricultural,  
Fisheries Wealth and Water  
Resources  
[muatasim4@hotmail.com](mailto:muatasim4@hotmail.com)

**Advisor(s)**

Tariq Darwish Alalawi  
Ministry of Agricultural,  
Fisheries Wealth and Water  
Resources  
[ta\\_alalawi\\_211@hotmail.com](mailto:ta_alalawi_211@hotmail.com)

**PAKISTAN****Alternate**

Mr Farhan Khan  
Ministry of Maritime Affairs  
[farhankhan704@gmail.com](mailto:farhankhan704@gmail.com)

**PHILIPPINES****Head Of Delegation**

Mr Sammy Malvas  
Bureau of Fisheries and  
Aquatic Resources  
[rdsambfar4a@gmail.com](mailto:rdsambfar4a@gmail.com)

**Alternate**

Mr Rafael V. Ramiscal  
Bureau of Fisheries and  
Aquatic Resources  
[rv\\_ram55@yahoo.com](mailto:rv_ram55@yahoo.com)

Ms Jennifer Viron  
Bureau of Fisheries and  
Aquatic Resources  
[jennyviron@gmail.com](mailto:jennyviron@gmail.com)

Mr Isidoro Tanangonan  
Bureau of Fisheries and  
Aquatic Resources  
[sidtango.bfar@gmail.com](mailto:sidtango.bfar@gmail.com)

Mr Benjamin Tabios  
Bureau of Fisheries and  
Aquatic Resources  
[benjotabios@gmail.com](mailto:benjotabios@gmail.com)

**SEYCHELLES****Head Of Delegation**

Mr Rodney Govinden  
Seychelles Fishing Authority  
[rgovinden@sfa.sc](mailto:rgovinden@sfa.sc)

**Alternate**

Mr Ameer Ebrahim  
Seychelles Fishing Authority  
[aebrahim@sfa.sc](mailto:aebrahim@sfa.sc)

**Advisor (s)**

Mr Roy Clarisse  
Ministry of Fisheries and  
Blue Economy  
[rclarisse@gov.sc](mailto:rclarisse@gov.sc)

**SOMALIA****Head Of Delegation**

Mr Mohamoud Sh.  
Abdullahi  
Ministry of Fisheries and  
Marine Resources  
[dg@mfmr.gov.so](mailto:dg@mfmr.gov.so)

Mr Abdirahim Ibrahim  
Shekh Heile  
Ministry of Fisheries and  
Marine Resources  
[sgunrahim@yahoo.com](mailto:sgunrahim@yahoo.com)

**SRI LANKA****Head Of Delegation**

Ms Kalyani Hewapathirana  
Department of Fisheries &  
Aquatic Resources  
[hewakal2012@gmail.com](mailto:hewakal2012@gmail.com)

**Alternate**

Mr M.M Ariyaratne  
Department of Fisheries &  
Aquatic Resources  
[mma\\_fi@yahoo.com](mailto:mma_fi@yahoo.com)

**SOUTH AFRICA**

Absent

**SUDAN**

Absent

**TANZANIA****Alternate**

Mr Zahor M. El Kharousy  
Deep Sea Fishing Authority  
[zahor1m@hotmail.com](mailto:zahor1m@hotmail.com)

**Advisor (s)**

Mr. Emmanuel A. Sweke  
Deep Sea Fishing Authority  
[emmanuel.sweke@dsfa.go.tz](mailto:emmanuel.sweke@dsfa.go.tz)

**THAILAND****Head Of Delegation**

Ms Prulai Nootmorn  
Department of Fisheries  
[nootmorn@yahoo.com](mailto:nootmorn@yahoo.com)

**Alternate**

Mr Pavarot  
Noranarttragoon  
Department of Fisheries  
[pavarotn@gmail.com](mailto:pavarotn@gmail.com)

**UNITED KINGDOM****Head Of Delegation**

Ms Kathryn Holdsworth  
Department for  
Environment, Food & Rural  
Affairs  
[kathryn.holdsworth@defra.gov.uk](mailto:kathryn.holdsworth@defra.gov.uk)

**Alternate**

Mr Marc Owen  
Department for  
Environment, Food & Rural  
Affairs  
[marc.owen@defra.gov.uk](mailto:marc.owen@defra.gov.uk)

Ms Charlotte Wicker  
Department for  
Environment, Food & Rural  
Affairs  
[charlotte.wicker@defra.gov.uk](mailto:charlotte.wicker@defra.gov.uk)

Mr Thomas King

Department for  
Environment, Food & Rural  
Affairs  
[thomas.king@defra.gov.uk](mailto:thomas.king@defra.gov.uk)

Mr Matthew Pace  
Department for  
Environment, Food & Rural  
Affairs

[matthew.pace@cefas.co.uk](mailto:matthew.pace@cefas.co.uk)  
**YEMEN**  
Absent

**United States of America**  
Absent

**FORUM FISHERIES AGENCY**  
Mr Wetjens Dimlich  
[wetjens@ffa.int](mailto:wetjens@ffa.int)

**INTERNATIONAL SEAFOOD  
SUSTAINABILITY  
FOUNDATION**  
Mr Hilario Murua  
[hmurua@iss-foundation.org](mailto:hmurua@iss-foundation.org)

**INTERNATIONAL POLE AND  
LINE FOUNDATION**  
Mr Shiham Adam  
[shiham.adam@ipnlf.org](mailto:shiham.adam@ipnlf.org)

**The PEW Charitable Trusts**  
Mr Glen Holmes  
[gholmes@pewtrusts.org](mailto:gholmes@pewtrusts.org)

Mr Christopher O'Brien  
[chris.obrien@fao.org](mailto:chris.obrien@fao.org)

Mr Paul de Bruyn  
[paul.debruyn@fao.org](mailto:paul.debruyn@fao.org)

Mr Dan Fu  
[dan.fu@fao.org](mailto:dan.fu@fao.org)

Mr Howard Whalley  
[howard.whalley@fao.org](mailto:howard.whalley@fao.org)

Ms Lauren Nelson  
[Lauren.nelson@fao.org](mailto:Lauren.nelson@fao.org)

Ms Cynthia Fernandez Diaz

**OBSERVERS**  
**SUSTAINABLE FISHERIES  
AND COMMUNITIES TRUST**  
Ms Beatrice Kinyua  
[beatrice.kinyua@sfact.org](mailto:beatrice.kinyua@sfact.org)

**THE OCEAN FOUNDATION**  
Ms Shana Miller  
[smiller@oceanfdn.org](mailto:smiller@oceanfdn.org)

**Western and Central Pacific  
Fisheries Commission**  
Mr Tim Jones  
[tim.jones@wcpfc.int](mailto:tim.jones@wcpfc.int)

**WORLDWIDE FUND FOR  
NATURE**  
Mr Dresy Lavosoa  
[ldresy@wwf.org](mailto:ldresy@wwf.org)

**INVITED EXPERTS**  
Ms I-Lu Lai  
[ilu@ms1.fao.gov.tw](mailto:ilu@ms1.fao.gov.tw)

**IOTC SECRETARIAT**  
[cynthia.fernandezdiaz@fao.org](mailto:cynthia.fernandezdiaz@fao.org)

Ms Lucia Pierre  
[lucia.pierre@fao.org](mailto:lucia.pierre@fao.org)

Ms Hendreika Monthy  
[hendreika.monthy@fao.org](mailto:hendreika.monthy@fao.org)

Ms Claudette Matombe  
[claudette.matombe@fao.org](mailto:claudette.matombe@fao.org)

Ms Mirose Govinden  
[mirose.govinden@fao.org](mailto:mirose.govinden@fao.org)

Mr Chia-Chun Wu  
[jiachun@ms1.fao.gov.tw](mailto:jiachun@ms1.fao.gov.tw)

Mr Shih-Ming Kao  
[kaosm@udel.edu](mailto:kaosm@udel.edu)

Mr Sheng-Ping Wang  
[wsp@mail.ntou.edu.tw](mailto:wsp@mail.ntou.edu.tw)

Mr Wen-Pei Tsai  
[ptsai@nkust.edu.tw](mailto:ptsai@nkust.edu.tw)

Ms Shu-Ting Chang  
[lisa@ofdc.org.tw](mailto:lisa@ofdc.org.tw)

Mr. Zhen-Yu Ni  
[zhenyu@ofdc.org.tw](mailto:zhenyu@ofdc.org.tw)

Mr Ken Chien-Nan Lin  
[chiennan@ms1.fao.gov.tw](mailto:chiennan@ms1.fao.gov.tw)

Mr Kuan-Ting Lee  
[simon@tuna.org.tw](mailto:simon@tuna.org.tw)

**IOTC SECRETARIAT  
CONSULTANTS**  
Mr Olivier Roux  
[olivier@otolithe.com](mailto:olivier@otolithe.com)  
  
Mr Charles Edwards  
[cescapecs@gmail.com](mailto:cescapecs@gmail.com)  
  
Mr Iago Mosqueira  
[iago.mosqueira@wur.nl](mailto:iago.mosqueira@wur.nl)  
  
Ms Jana Kleineberg  
[jkleineberg@gmail.com](mailto:jkleineberg@gmail.com)  
  
Ms Polina Levontin  
[levontin@hotmail.com](mailto:levontin@hotmail.com)  
Mr Thomas Brunel



[thomas.brunel@wur.nl](mailto:thomas.brunel@wur.nl)

Ms Sylvia Amisi  
[s.amisi@aiic.org](mailto:s.amisi@aiic.org)

Ms Pascale Sutherland  
[pascalesutherland@hotmail.com](mailto:pascalesutherland@hotmail.com)

**INTERPRETERS**

Mr Guillaume Fleury  
[g.fleury@aiic.net](mailto:g.fleury@aiic.net)

Ms Suzanne Kobine-Roy  
[s.kobine@aiic.net](mailto:s.kobine@aiic.net)

[vandana.kawlra@gmail.com](mailto:vandana.kawlra@gmail.com)

Ms Annie Trottier  
[a.trottier@aiic.net](mailto:a.trottier@aiic.net)

Ms Vandana Kawlra

**APPENDIX II**  
**AGENDA FOR 5<sup>TH</sup> IOTC TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURE**

**Date: 13-14 May 2022**

**Location: Hybrid (Seychelles/Zoom)**

**Co-Chairs: Ms. Riley Kim Jung-re (Commission Chair) and Dr. Toshihide Kitakado (SC Chair)**

**1. OPENING OF THE SESSION AND ARRANGEMENTS (Co-Chairs)**

**2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION (Co-Chairs)**

**3. ADMISSION OF OBSERVERS (Co-Chairs)**

**4. DECISIONS OF THE COMMISSION RELATED TO THE WORK OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES (IOTC Secretariat)**

- 4.1 Resolution 16/09 – Terms of Reference
- 4.2 Outcomes of the 4<sup>th</sup> Session of TCMP
- 4.3 Outcomes of the 25<sup>th</sup> Session of the Commission
- 4.4 Outcomes of the 24<sup>th</sup> Session of the Scientific Committee

**5. INTRODUCTION TO MSE**

- 5.1 Brief introduction of Management Procedures and MSE (SC Chair)
  - 5.1.1 Basic principles
  - 5.1.2 Roles and responsibilities and feedback mechanism
- 5.2 Demonstration of MSE capacity building tools (Contract developer)
- 5.3 SC proposal for the standard presentation of MSE results (SC Chair)

**6 STATUS OF THE MANAGEMENT STRATEGY EVALUATION/OPERATING MODELS (Developers)**

- 6.1 Bigeye tuna (Rich Hilary)
- 6.2 Albacore tuna (Iago Mosqueira)
- 6.3 Skipjack tuna (Charlie Edwards)
- 6.4 Yellowfin tunas (Rich Hilary)
- 6.5 Swordfish (Thomas Brunel)

**7 DISCUSSION ON THE ACTIONS NEEDED FOR THE ADOPTION OF MANAGEMENT PROCEDURES, INCLUDING BUDGET (Co-Chairs and Secretariat)**

- 7.1 Bigeye tuna
- 7.2 Albacore tuna
- 7.3 Skipjack tuna
- 7.4 Yellowfin tuna
- 7.5 Swordfish
- 7.6 General issues
  - 7.6.1 Exceptional circumstances
  - 7.6.2 MP implementation, actions and regular implementation review

**8 STOCK STATUS GUIDANCE AND REFERENCE POINTS (SC Chair and WPM Chair)**

**9 FUTURE DIRECTION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES (Co-Chairs)**

- 9.1 Workplan

9.1.1 New timelines

9.1.2 budget and resources needed for technical developments

9.1.3 External review

9.2 Priorities

9.3 Process and future meetings of TCMP

**10 ADOPTION OF REPORT (Co-Chairs)**

**APPENDIX III**  
**LIST OF DOCUMENTS**

<b>Document</b>	<b>Title</b>
IOTC-2022- TCMP05-01a	Draft: Agenda of the 5 <sup>th</sup> Technical Committee on Management Procedure Meeting
IOTC-2022- TCMP05-01b	Draft: Annotated agenda of the 5 <sup>th</sup> Technical Committee on Management Procedure Meeting
IOTC-2022- TCMP05-02	Draft: List of documents of the 5 <sup>th</sup> Technical Committee on Management Procedure (TCMP05)
IOTC-2022- TCMP05-03	Outcomes of the 4 <sup>th</sup> Technical Committee On Management Procedure
IOTC-2022- TCMP05-04	Outcomes of the 25 <sup>th</sup> Session of the Commission
IOTC-2022- TCMP05-05	Outcomes of the 24 <sup>th</sup> Session of the Scientific Committee
IOTC-2022- TCMP05-06	Resolution 16/09 ON ESTABLISHING A TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES
IOTC-2022- TCMP05-07	Bigeye tuna management procedure for adoption (Hillary, R. M., Preece, A. L., Williams, A. and Jumppanen, P.)
IOTC-2022- TCMP05-08	Albacore Management Strategy Evaluation Update (Mosqueira, I. and Brunel, T.)
IOTC-2022- TCMP05-09	Presentation of an empirical MP for Indian Ocean skipjack tuna (Edwards, C. T. T.)
IOTC-2022- TCMP05-10	Swordfish Management Strategy Evaluation Update (Brunel, T. and Mosqueira, I.)
IOTC-2022- TCMP05-11	MP Implementation – schedule of activities: meta-rules (Preece, A., Williams, A. and Hillary, R.)
<b>Reference documents</b>	
IOTC-2022-S26-PropG	Draft Resolution on a management procedure for bigeye tuna (Australia)