



Report of the 7th IOTC Technical Committee on Management Procedures

Virtual, 19–20 February 2024

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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	7
4.1	OUTCOMES OF THE 6TH SESSION OF TCMP	7
4.2	OUTCOMES OF THE 26TH SESSION OF THE COMMISSION.....	9
4.3	OUTCOMES OF THE 26 TH SESSION OF THE SCIENTIFIC COMMITTEE	9
5.	FEEDBACK FROM THE SMALL WORKING GROUP ON MSE PRESENTATION	10
6.	STATUS OF THE MANAGEMENT STRATEGY EVALUATION/OPERATING MODELS AND ACTIONS NEEDED FOR ADOPTION	10
6.1	SKIPJACK TUNA.	10
6.2	SWORDFISH	12
7.	PREPARATION FOR THE 8TH SESSION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES.....	13
7.1	ADVICE ON SUITABILITY FOR ADOPTION OF MPS	13
7.1.1	Skipjack.....	13
7.1.2	Swordfish.....	14
8.	ADOPTION OF REPORT	14
Appendix I	List of Participants.....	15
Appendix II	Agenda for 7 th IOTC Technical Committee on Management Procedure	19
Appendix III	List of documents.....	20

EXECUTIVE SUMMARY

(Para. 1) The seventh Technical Committee on Management Procedures meeting was held on the 19–20 February 2024. The meeting was held in a virtual format, using Zoom.

(Para. 2) Ms Jung-re Riley Kim (chair of the IOTC) opened the meeting and welcomed attendees. Ms. Kim emphasized the importance of this forum for engaging both scientists and decision makers in the process of developing Management Procedures for key IOTC species. Ms Kim highlighted the Commission request in 2023 to the MSE developers to communicate the results of their analyses in a less technical manner and facilitate involvement by all participants in the MSE processes.

(Para. 3) The meeting was co-chaired by Dr Toshihide Kitakado (chair of the IOTC Scientific Committee). The Chairs welcomed 57 delegates from 15 Contracting Parties of the Commission and 7 Observers (including the invited experts) to the session. The list of participants is provided in Appendix I.

1. OPENING OF THE SESSION AND ARRANGEMENTS

1. The seventh Technical Committee on Management Procedures meeting was held on the 19–20 February 2024. The meeting was held in a virtual format, using Zoom.
2. Ms Jung-re Riley Kim (chair of the IOTC) opened the meeting and welcomed attendees. Ms. Kim emphasized the importance of this forum for engaging both scientists and decision makers in the process of developing Management Procedures for key IOTC species. Ms Kim highlighted the Commission request in 2023 to the MSE developers to communicate the results of their analyses in a less technical manner and facilitate involvement by all participants in the MSE processes.
3. The meeting was co-chaired by Dr Toshihide Kitakado (chair of the IOTC Scientific Committee). The Chairs welcomed 57 delegates from 15 Contracting Parties of the Commission and 7 Observers (including the 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 Co-Chairs **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 (2023).

Non-governmental Organisations (NGO)

7. In accordance with Rule VI.1 and XIV.5 of the IOTC Rules of Procedure (2023), the TCMP **ADMITTED** the following Non-governmental organisations (NGO) as observers to the 7th Session of the TCMP.

- International Seafood Sustainability Foundation
- Marine Stewardship Council
- PEW Charitable Trusts
- Sustainable Fisheries and Communities Trust

Invited experts

8. In accordance with Rules VI.1 and XIV.9 of the IOTC Rules of Procedure (2023), 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 7th Session of the TCMP.

- Taiwan, Province of China

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

4.1 OUTCOMES OF THE 6TH SESSION OF TCMP

9. The TCMP **NOTED** paper [IOTC-2024-TCMP07-03](#) which summarised the main outcomes of the 6th Technical

Committee on Management Procedures. The Report of the 6th TCMP provided the recommendation as below:

- (Para. 79) The TCMP **NOTED** the recommendation by the SC that it is advisable to have focused dialogue with managers on those MSEs which are more advanced such as that for SKJ and SWO. The TCMP therefore **RECOMMENDED** that a virtual TCMP is convened early in 2024 with a special focus on the MSEs for SKJ and SWO and that it be held back-to-back with the WPM(MSE) meeting.

10. The TCMP **NOTED** that important issues were discussed by the TCMP and included in the paragraphs below:

- (Para. 39) The TCMP **NOTED** that the MP testing (for skipjack) included a maximum change of 15% in TAC setting, and further **NOTED** that it would be useful to consult with CPCs when discussing what is the appropriate level of the TAC change in light of that the catch for skipjack is quite variable. The TCMP **AGREED** to consider four scenarios for the maximum TAC change: (1) a symmetric 15% (2) a symmetric 25% (3) asymmetric 25% (upward) and 15% (downward) (4) asymmetric 15% (upward) and 10% (downward). The TCMP also **AGREED** to consider stability clauses that are disabled when biomass falls below certain safety values (e.g. Blim).
- (Para. 47) The TCMP suggested the following maximum change in TAC setting (for swordfish) be included in the MP testing for swordfish (1) symmetric 15% change (2) symmetric 10% change (3) asymmetric change of 15% (upward) and 10% (downward). The TCMP again **REQUESTED** to consider stability clauses that are disabled when biomass falls below certain safety values (e.g. Blim).
- (Para. 48) The TCMP **NOTED** that the data-based MP considered for skipjack and swordfish MSE are considerably different. The slope-based data MP for swordfish has a long history in IOTC whereas the hockey-stick data MP tested for skipjack is a novelty. The TCMP **AGREED** that using similar MP or a common approach will help the managers to better understand the MSE process. However, the consideration of MP should also take into account the differences in biological characteristics of species resulting in different approaches being more appropriate for some species. TCMP suggested that consistency would be preferable in MP design, but it may also be species specific when appropriate.
- (Para. 52) The TCMP discussed and **AGREED** that there was no need to continuously recondition an operating model, unless the most recent stock assessment showed that the stock currently falls outside the range of plausible scenarios estimated within the MSE.
- (Para. 54) The TCMP **NOTED** that there were significantly differing scientific views on the use of MSY and depletion-based reference points and approaches in MSE testing and MP development (in general across species) and noted some of the technical challenges and uncertainties associated with estimating MSY. The TCMP **REQUESTED** that the WPM(MSE) continue to discuss and consider this issue in the further progression of its work. The TCMP also noted CPCs views both for and against the idea of seeking that future MSE testing of MPs for each species should explore utilization of multiple operating models approaches.
- (Para. 55) However, the TCMP **NOTED** that using two different sets of reference points across different MPs could lead to confusion for managers and the TCMP were not able to agree on which would be most suitable, so the TCMP **REQUESTED** that the WPM(MSE) continue to discuss the use of the two reference points for the outputs of the MPs for all species.
- (Para. 60) The TCMP **NOTED** that the guidelines for the provision of exceptional circumstances for IOTC species MPs are available from Appendix 6A of IOTC-2021-SC24-R_Rev1 and **AGREED** to continue with this approach for future MP development and implementation. The management actions by the Commission have yet to be specified.
- (Para. 71) The TCMP **NOTED** that the current timeline agreed for MP development only runs until 2024. In addition, there have been delays in the development of MPs for YFT and ALB and advancement in that for SWO. As such the TCMP **AGREED** that a revision of the current timeline is required.
- (Para. 77) The TCMP **REQUESTED** that the developers should reduce the technical details in their presentations to the TCMP and limit these details to the appropriate forums such as the WPM(MSE).

- (Para. 78) The TCMP **REQUESTED** that the Commission, at S27, consider ways to further improve the TCMP functioning.

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

4.2 OUTCOMES OF THE 27TH SESSION OF THE COMMISSION

12. The TCMP **NOTED** paper [IOTC-2024-TCMP07-04](#) 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 27th Session of the Commission provided the following feedback:

- (Para. 76) The Commission **NOTED** the report of the 6th meeting of the Technical Committee on Management Procedures (TCMP) (IOTC-2023-TCMP06-R) and **ENDORSED** the following TCMP recommendation:
 - The TCMP **NOTED** the recommendation by the SC that it is advisable to have focused dialogue with managers on those MSEs which are more advanced such as that for SKJ and SWO. The TCMP therefore **RECOMMENDED** that a virtual TCMP is convened early in 2024 with a special focus on the MSEs for SKJ and SWO, and that it be held back-to-back with the WPM(MSE) meeting.
- (Para. 77) The Commission **SUPPORTED** the work conducted by the TCMP and its role in providing science-based advice for management. However, the Commission **AGREED** that the dialogue in the TCMP has become too technical and has limited the involvement of managers in recent years, as most of the discussions take place among the technical experts.
- (Para. 78) The Commission **URGED** the TCMP to continue with capacity building initiatives to facilitate understanding of the process and increase participation by all parties with the aim of managers being better able to contribute to the implementation of the MSE process. The Commission **ACKNOWLEDGED** that an MSE capacity building workshop is planned to be held in September 2023.
- (Para. 79) The Commission **REQUESTED** the MSE developers to communicate the results of their analyses in a less technical manner and **ENDORSED** the creation of a small working group to discuss and agree on ways to improve communication between the scientists and the managers. This could include modifying the existing templates for presentation of MSE outputs to increase understanding and better meet the needs of the managers.

13. The TCMP **NOTED** the outcomes from the previous session of the Commission.

4.3 OUTCOMES OF THE 26TH SESSION OF THE SCIENTIFIC COMMITTEE

14. The TCMP **NOTED** paper [IOTC-2024-TCMP07-05](#) which outlined the main outcomes of 26th Session of the Scientific Committee that specifically related to the work of the TCMP.

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

- (Para. 129) The SC **NOTED** that there is a need to ensure that any code and input files used for developing MPs is housed internally on an accessible platform, so it is available to other users and not lost when developers move on to other tasks. The SC **NOTED** that ICES uses a Transparency and Assessment Framework (TAF) which is a useful frontend to direct users to the locations of relevant documents and code (e.g. Github repositories) that enable users to re-run assessments and other analyses, but that a much smaller system would be needed for the IOTC. The SC **NOTED** that most important information to be curated would be the input files, executables, and control files (not the large volume of output files) and **RECOMMENDED** that the Commission ensure that the IOTC Secretariat is provided with the necessary resources to manage the curation of this information.

16. The TCMP **NOTED** the Secretariats presentation on the outcomes of the 26th Session of the Scientific Committee and **AGREED** that these issues would be discussed during the current session of the TCMP.

5. FEEDBACK FROM THE SMALL WORKING GROUP ON MSE PRESENTATION

17. The TCMP **NOTED** a very brief presentation by the SC Chair which provided an overview of the basic principles of the MSE process. The SC Chair noted that due to the shortened nature of the meeting, the usual capacity building presentations would not be provided, but rather a refresher of some of the concepts and terminology that would be used during the meeting.
18. The TCMP **NOTED** a further presentation by the SC Chair on the outcomes of the virtual meeting of the Small Working Group on MSE presentation that took place on 1 February 2024. The SC Chair reminded the TCMP that in 2023 the Commission endorsed the creation of this small working group to discuss and agree on ways to improve communication between scientists and managers. The small working group was comprised of scientists and managers from a variety of member countries.
19. The TCMP **NOTED** that the group discussions focused on streamlining presentations, improving engagement, and finding effective ways to enhance managers' understanding of MSE processes. This included how to develop presentations & documents on species MSE outcomes to facilitate communication and decision-making by:
- Simplifying the presentations and using familiar terms for managers
 - Adopting a standardized format for written summaries with clear decision points
 - A specific table format for comparing MPs
 - Main MP results in main body of document, and detailed figures attached as appendices (for TCMP08)
20. The TCMP **NOTED** that the small working group identified the need to:
- clarify the importance of MSE by explaining the advantages of an MP in addition to the assessment
 - clarify the uncertainty of future projections when explaining the results
 - explain the difference between the most recent TAC in the simulation and the TAC derived immediately after the MP is conducted.
21. The TCMP were **INFORMED** that the small working group also discussed capacity building possibilities. The small working group noted the concern expressed by the managers that capacity building sessions that take place during the TCMP meeting immediately prior to the Commission meeting is not optimal as managers are often distracted by upcoming Commission issues and can't focus on the capacity building information.
22. The small working group suggested alternate options for capacity building including hands on demonstrations, informal "ambassador" capacity building sessions arranged around other existing meetings as well as leveraging online tools. The TCMP **NOTED** that these options would be discussed at the next TCMP meeting.

6. STATUS OF THE MANAGEMENT STRATEGY EVALUATION/OPERATING MODELS AND ACTIONS NEEDED FOR ADOPTION

6.1 SKIPJACK TUNA.

23. The TCMP **NOTED** paper [IOTC-2024-TCMP07-06](#) which provided an update on the progress of Indian Ocean skipjack tuna MSE. The work, which has been on going since early 2019, seeks to design an MP, fully tested using a Management Strategy Evaluation framework, **NOTING** that the current HCR of SKJ (Res 16/02) is not a full MP, which only works if a well estimated biomass is available via an external stock assessment.
24. The TCMP **NOTED** that the work has been undertaken to revisit the possibility of using a model-based MP based on the updated CPUE indices. However, that evidence presented at the WPTT25 in October 2023 showed that a model-based approach was not viable.
25. The TCMP **NOTED** that the proposed MP is an empirical, data-based MP based on standardised catch rates, which defines CPUE as indicator of biomass and uses it as an input to an HCR to calculate catch limit. The work aimed to

propose a set of candidate Management Procedures to the TCMP08 (2024) for potential adoption by the Commission.

26. The TCMP **NOTED** that:

- MPs were tuned using the probability that $SB_Y > SB_{40\%}$ and $E_Y < E_{40\%}$ when averaged across projection years; the terminology “Target quadrant” is used to distinguish from the Kobe quadrants that are defined using BMSY and FMSY. Three tuning criteria were used, corresponding to the probability of being in the Target quadrant of 50%, 60% and 70%.
- For each turning criteria, two MPs were tested, type A ($a_T = -0.5$ and $a_X = -1.2$), and type B ($a_T = -0.3$ and $a_X = -1.0$). The input parameters a_T and a_X , are the catch rates (in log scale) corresponding the control parameters where minimum catch and maximum catch are set, respectively. Compared to type A MP, Type B is shifting towards high catch rates as well as higher maximum catch (plateau), thus representing a more aggressive MP in terms of setting TAC.

27. The TCMP **NOTED** that the depletion-based management target for turning the MPs is more conservative than the MSY-based target. It was suggested also plotting the MP's result against the MSY-based target, or the Kobe plot, which might be helpful for managers. However, the skipjack tuna stock status is established using the depletion-based target in line with resolution 21/03. It was previously agreed that presenting graphs based on both the Kobe quadrat and the target quadrat would be confusing. The TCMP **NOTED** that a summary of MP's performance in relation to the MSY is given in Table 7 of [IOTC-2024-TCMP07-06](#).

28. The TCMP **NOTED** that the more aggressive type B MP achieved a greater maximum catch but had a lower probability of remaining on the plateau, while Type A MP achieved a lower maximum catch but was more stable. This suggested that there is a trade-off between the frequency of setting TAC at lower levels and achieving larger maximum catches. The TCMP further **NOTED** that more conservative MPs (i.e., 70% likelihood in the Target quadrant) resulted in a lower maximum catch, but the TAC is more stable (and more likely to stay on plateau). Tuning to more aggressive objectives does not necessarily result in higher catches as the TAC has become more unstable.

29. The TCMP **NOTED** that, the resulting stock biomass (SB) is quite similar between type A and type B MP, and the tuning objectives accounted for the majority of the variation. The same is true for catch rates, which are correlated with stock biomass (calculated in the model based on SB and catchability specific to each fishery). The TCMP further **NOTED** that, the minimum catch constraint in the HCR will ensure a positive TAC always in place even when CPUE falls to extremely low levels.

30. TCMP **NOTED** the instability in catches associated with more aggressive tuning targets. It was proposed to exclude the 50% turning, **NOTING** that a similar decision had been made for the MSE for bigeye tuna and swordfish. However, TCMP **NOTED** that MPs need still be evaluated using the full assessment model grid (currently only half models are included in the OM) and the MP performance may also change if TAC stabilizers are introduced. TCMP **AGREED** to postpone the decision to the TCMP08 meeting in May, pending full results, to allow MP options to be further narrowing down. Furthermore, the TCMP noted that the MP tuned for 50% of probability of reaching the target was preliminarily evaluated to have achieved a probability of being in the green Kobe quadrant ($B > B_{MSY}$ and $F < F_{MSY}$) of 83% and 85% for Type A MP and Type B MP, respectively.

31. The TCMP found that the qualitative comparisons of multiple MPs against different management objectives (e.g., Type-A, 60% tuning is preferred against the maximum average catch; Type-B, 50% tuning is preferred against the maximum possible catch) in the skipjack MSE are very informative, and **REQUESTED** that the developers produce such qualitative comparisons (with an emphasis on whether the difference is significant) to summarize MP performance in order to assist managers in making MP selection decisions.

32. The TCMP discussed on the need of further evaluating a "Type C" MP, in which the input parameters a_T and a_X ,

are set to values corresponding to a %10SB0 and %40SB0, respectively. The TCMP **NOTED** that an MP like that would be more familiar to managers as it resembles the traditional 40-10 hockey-stick HCR, although it was unclear such an MP would be advantageous when comparing to the Type A and B MPs that have been tested. It was also pointed out that the relationship between CPUE and stock depletion is highly variable, so these input values won't exactly match the %10SB0 and %40SB0 reference points.

33. The TCMP **NOTED** that the mean change of TAC is between 4% and 20% across MPs, as such it is not considered useful to evaluate TAC change exceeding 20%. The TCMP proposed the following two scenarios of maximum TAC change (TAC stabilizer): (1) a symmetric 15% (2) asymmetric 15% (upward) and 10% (downward), so that the two types of catch constrain suggested by the TCMP (asymmetric and symmetric) can be addressed.

34. The TCMP **NOTED** that the implementation lag in the MP testing includes a two-year data lag (MP in year 2023 uses CPUE data up to 2021), and a one-year advice lag (MP in 2023 sets the TAC for 2024). The TCMP **NOTED** that a one-year data lag would be more suitable within the context of the IOTC. Nevertheless, an assessment of a longer advice lag could be beneficial— for instance, if the commission wants to deliberate further on TAC implementation in absence of an allocation scheme. Therefore, the TCMP proposed evaluating total implementation lag of both two and three years.

6.2 SWORDFISH

35. The TCMP **NOTED** paper [IOTC-2024-TCMP07-07](#) which provided information on an Indian Ocean Swordfish Management Procedure. The MSE investigated multiple types of MP, tuning criteria, and TAC stabilizers, with a total of 18 MPs tested. The TCMP **NOTED** that:

- MPs were tuned against two tuning criteria, corresponding to the probability of being in the Kobe green quadrant of 60% and 70%.
- For each tuning criteria, three types MPs were tested, a model based MP incorporating a classic 40-10 Hockey-stick HCR, and two versions of data based HCR, corresponding to either slow ($k_a = 0.1$ and $k_b = 0.3$) or fast ($k_a = 2.1$ and $k_b = 1.2$) reaction to standardised CPUE index (k_a and k_b are reactivity parameters, namely the slope and distance (to target) factors, are what largely determine how the data-based MP behaves).
- For each MP, 3 options for the TAC stabilizer, including a symmetric 15% (15-15), a symmetric 10% (10-10), and asymmetric 15% upward and 10% downward (15-10).

36. The TCMP **NOTED** that the MSE thoroughly assessed each MP's performance and trade-off in terms of stability, catch, and stock biomass. The TCMP **NOTED** that while there is little variation in stock biomass overall, there are differences in catch performance due to MP type: model-based MP typically produced lower catches but higher stability in TAC. The TCMP also **NOTED** that catch variability is very close between slow and fast data-based MP; however, this could vary depending on the stock trend and the type of TAC stabiliser that is in place.

37. The TCMP **NOTED** that the estimator in the Model-based MP is based on a standard Schaefer surplus production model, which assumes MSY occurs at 50% SB0. The TCMP further **NOTED** that this assumption does not align with the underlying 40-10 Hockey stick harvest control rule, as management actions may not be triggered when the stock falls below B_{MSY} . It was pointed out that the discrepancy might not be important since the estimator serves to provide inputs to the HCR and it is subject to testing. Nevertheless, the TCMP suggested examining the effects of an estimator more in tune with the HCR, one that corresponds to an MSY occurring at 40% SB0, to determine its influence on MP performance. The TCMP **AGREED** that this warrants a technical discussion at the upcoming MSE April task force meeting.

38. Based on the observed performance of MPs, the TCMP discussed options to refine MP selections for further consideration at the TCMP meeting in May. The TCMP **NOTED** that the performance was quite similar among various TAC stabilizers and **AGREED** to eliminate both the 15-15 and 10-10 options while retaining the 15-10 option. Additionally, the TCMP **AGREED** to maintaining all types of MPs (although model-based MPs typically yield lower

catches they offer greater stability)

7. PREPARATION FOR THE 8TH SESSION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES

39. The TCMP **NOTED** a presentation by the SC Chair on a possible template for presenting MSE results to the Commission. The template was submitted to the MSE Task force meeting in 2022 (IOTC-2022-WPM13MSE-03). The SC Chair briefly noted the benefits of the approach as well as the clarity of the information provided. The SC chair also noted the Australian proposal for the Bigeye tuna MP provided in 2022 (IOTC-2022-S26-PropG) for the way in which the complex information is presented in a digestible and clear format.

40. The TCMP **RECALLED** that the deadline for submission of full documents for the TCMP in May falls on 10 April (30 days prior to the start of the TCMP meeting). The TCMP **NOTED** that this deadline falls before the completion of the MSE Task Force meeting, which takes place from the 10 – 13 April. As such, any discussions that take place during that meeting would not be able to be incorporated into the documents submitted for the TCMP. As such, the TCMP **AGREED** that the deadline for submission of documents for the TCMP should be extended until the 19th of April on an exceptional basis in 2024.

7.1 ADVICE ON SUITABILITY FOR ADOPTION OF MPS

7.1.1 Skipjack

41. The TCMP **NOTED** the summary of further revisions and analyses to be conducted for the skipjack MSE. The MSE task force will examine the results of new analyses during its meeting in April, with the final results to be presented to the TCMP08 in May.

- OM – to include full assessment model grids (36 runs)
- MP – to include
 - 3 tuning objectives (50%, 60%, 70%),
 - 3 HCR types A, B, C (corresponding to the classic 40-10 rule)
 - Implementation lag of 2 and 3 years
 - Catch change constraints (symmetric 15%, and asymmetric 15% (upward) and 10% (downward))
- Robustness testing – to include
 - temporal correlation in recruitment.
 - reproduce sustained drop in recruitment timeseries for 5 – 10 years at the minimum estimated recruitment value;
 - evaluate consequences of overcatch (constant values of 20% and 30% overcatch)

42. The TCMP **NOTED** the additional requests on the presentation and summary of output made by the EU:

- When reporting HCR tuning parameters, the values of a_T and a_X are now in logarithmic scale and should also be reported in their approximated depletion values.
- The tables with the results (Tables 5 to 7 in IOTC-2024-TCMP07-06) should also include the following metrics for each one of the CMPs:
 - Probability of being at or above the adopted target reference point of 40%SB0.
 - Probability of being above Bmsy.
 - Probability of the catch limit being different to Cmax (lower).

In this regard, we appreciate the qualitative evaluation of CMPs but, what really helps to understand the trade-offs between the management objectives and conservation would be one full table with all results for all CMPs, for example, having the CMPs in rows and the performance metrics in columns or vice versa.

Consider showing only central tendency and not confidence intervals to make it possible,

- Addition of one figure to show the outcome of the CMPs: The outcome of the evaluations of the CMP is

shown as a contour plot against the target and limit reference points (both indicated with dashed vertical (x-axis 40%SB0 and 20%SB0) and horizontal (E40%SB0) without any color in the background, in other words, with all white (this figure is not shown in the working document but similar to what presented in the slides as “Tuning target simulation results”).

7.1.2 Swordfish

43. The TCMP **NOTED** the summary of further revisions and analyses to be conducted for the swordfish MSE. The MSE task force will examine the results of new analyses during its meeting in April, with the final results to be presented to the TCMP08 in May,

- OM – to project current OM to the start of 2024 (using latest available catch estimates)
- MP – to include
 - 2 tuning objectives (60%, 70%)
 - Model based MP, data-based MP (fast), data-based MP (slow)
 - asymmetric 15% upward and 10% downward (15-10)
- Robustness testing – to include
 - A maximum implementation error of 15% for a single management cycle, or three years
 - An implementation error of 10% over a longer period of time

44. The TCMP **NOTED** that when presenting the parameters of the MP, sufficient decimal places should be provided to facilitate replication of the TAC estimations.

8. ADOPTION OF REPORT

45. The Meeting was closed by the co-chairs who informed the participants that the report would be adopted by correspondence.

APPENDIX I
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APPENDIX II
AGENDA FOR 7TH IOTC TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURE

Date: 19-20 February 2024

Location: Virtual, 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 Outcomes of the 6th Session of the TCMP
 - 4.2 Outcomes of the 27th Session of the Commission
 - 4.3 Outcomes of the 26th Session of the Scientific Committee
- 5 FEEDBACK FROM THE SMALL WORKING GROUP ON MSE PRESENTATION** (SC Chair)
- 6 STATUS OF THE MANAGEMENT STRATEGY EVALUATION/OPERATING MODELS AND ACTIONS NEEDED FOR ADOPTION** (Developers)
 - 6.1 Skipjack tuna (Charlie Edwards)
 - 6.2 Swordfish (Thomas Brunel)
- 7 PREPERATION FOR THE 8TH SESSION OF THE TECHNICAL COMMITTEE ON MANAGEMENT PROCEDURES** (Co-Chairs)
 - 7.1 Advice on suitability for adoption of MPs
 - 7.1.1 Skipjack
 - 7.1.2 Swordfish
- 5. ADOPTION OF REPORT** (Co-chairs)

APPENDIX III
LIST OF DOCUMENTS

Document	Title
IOTC-2024- TCMP07-01a	Draft: Agenda of the 7 th Technical Committee on Management Procedure Meeting
IOTC-2024- TCMP07-01b	Draft: Annotated agenda of the 7 th Technical Committee on Management Procedure Meeting
IOTC-2024- TCMP07-02	Draft: List of documents of the 7 th Technical Committee on Management Procedure Meeting
IOTC-2024- TCMP07-03	Outcomes of the 6 th Technical Committee On Management Procedure
IOTC-2024- TCMP07-04	Outcomes of the 27 th Session of the Commission
IOTC-2024- TCMP07-05	Outcomes of the 26 th Session of the Scientific Committee
IOTC-2024- TCMP07-06	Updated candidate MPs for Indian Ocean skipjack tuna (Edwards C)
IOTC-2024- TCMP07-07	IOTC Swordfish: Management Strategy Evaluation Update (Brunel T, Mosqueira I)