



9th Meeting of the Parties (MoP9)

Reunion Island, 4–8 July 2022

MOP-09-INFO-10

Progress of SC advice on SIOFA CMMs

SIOFA SC Chair

Submitted 15.06.2022

Document type	administrative paper <input type="checkbox"/> working paper <input type="checkbox"/> information paper <input checked="" type="checkbox"/>
Distribution	Public <input checked="" type="checkbox"/> Restricted ¹ <input type="checkbox"/> Confidential ² <input type="checkbox"/>
Abstract	
<p>This paper provides the SIOFA MoP an update on progress from the Scientific Committee on its advice to the MoP as required by SIOFA CMMs.</p>	

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Background

SIOFA Conservation and Management Measures (CMMs) define and prescribe the management of fisheries in the SIOFA Agreement Area. They recognize provisions laid out in Articles 6(1)(d) and (e) of the [SIOFA Agreement](#) which provides that the CMMs should ensure the long-term sustainability of fishery resources, taking into account the need to protect marine biodiversity, based on the best scientific evidence and adopt generally recommended international minimum standards for the responsible conduct of fishing operations.

As directed by the Meeting of the Parties (MoP), the SIOFA Scientific Committee (SC) provides advice using the best available scientific evidence to advise the MoP as required under the CMMs. For example, [CMM2020/01](#) prescribes that:

9. Upon receipt of advice and recommendations from the Scientific Committee on the matters listed in paragraphs 5 to 7, the Meeting of the Parties shall act on the Scientific Committee's advice and recommendations at its next ordinary meeting. This may include, when the Meeting of the Parties considers it appropriate, to authorise any document or other output arising from the advice or recommendations, and amendments thereto.

In 2021, the Scientific Committee chair (SC Chair) issued [SC Circular 2021-10](#) (Updated work plan of the Scientific Committee). That Circular detailed how the SC progressed on the advice requested by the MoP, which included but was not limited to the advice relevant to the CMMs.

Aims

This paper provides the SIOFA MoP an update on progress from the Scientific Committee on its advice to the MoP as required by SIOFA CMMs.

Progress of SC advice on SIOFA CMMs

This paper summarises the areas where the SIOFA Scientific Committee (SC) has been requested to provide advice to the Meeting of the Parties (MoP) within the SIOFA CMMs. A summary is provided where progress has been made in recent years.

[CMM 2020/01 – Conservation and Management Measure for the Interim Management of Bottom Fishing in the Agreement Area \(interim management of bottom fishing\)](#)

[CMM 2020/01](#) prescribes that the SIOFA Scientific Committee (SC) should provide scientific advice to the Meeting of Parties (MoP) to inform on the management of bottom fisheries, mainly through paragraphs 5 to 9. The timeline set out in these paragraphs is for advice to be provided no later than the close of the ordinary meeting of the Scientific Committee in 2020.

[CMM 2020/01](#) prescribes that:

5. The Scientific Committee shall, by no later than the close of the ordinary meeting of the Scientific Committee in 2020, and thereafter whenever a substantial change to the fishery has occurred or new data has otherwise been provided to the Scientific Committee warranting changes, develop and provide advice and recommendations to the Meeting of the Parties on:

- a. a SIOFA Bottom Fishing Impact Assessment Standard (BFIAS) which takes account of the latest scientific information available;*
- b. maps of where VMEs are known to occur, or likely to occur, in the Agreement Area;*
- c. guidelines for evaluating and approving electronic observer programs for scientific data collection for consideration by the Meeting of the Parties; and*
- d. a standard protocol for future protected areas designation (areas in which special management rules apply, that may include, inter alia, fishing closures for specific gears or all gears).*

As regards paragraph 5 of [CMM 2020/01](#), the SC provided the following advice:

- a. SIOFA BFIAS: A BFIAS was provided at the 2nd meeting of the Scientific Committee and is published on the SIOFA website ([here](#))
- b. Maps of VMEs: There have been no encounters with VMEs reported under CMM 2020/01. Predictive mapping of VMEs is being undertaken as the EU funded project PAE2020-02, which should be completed by the end of 2022 (methods and preliminary results were presented to the 4th meeting of the Protected Areas and Ecosystems Working Group, [PAEWG4](#))
- c. Guidelines for electronic observer programs: In 2021, the SIOFA Scientific Committee undertook an intersessional workshop on the harmonisation of scientific observer standards and the evaluation process for CCPs scientific observer programmes. In addition, at this workshop, discussions on observer e-monitoring schemes were also considered. The current SIOFA SC workplan does not include a specific task on e-monitoring observer programmes and is likely to be considered following development of the harmonisation of observer programmes funded under the EU funded SIOFA SEAs project (scheduled to start later in 2022).
- d. Protocol for future protected areas designation: An interim protocol was adopted at MoP5 ([Annex K of the report](#), see also paragraph 6d).

[CMM 2020/01](#) prescribes that:

6. *The Scientific Committee shall, by no later than the close of the ordinary meeting of the Scientific Committee in 2020, and thereafter whenever a substantial change to the fishery has occurred or new data has otherwise been provided to the Scientific Committee warranting changes, develop and provide advice and recommendations to the Meeting of the Parties on:*

- a. *the status of stocks of principal deep-sea fishery resources targeted, and, to the extent possible, taken as bycatch and caught incidentally in these deep-sea fisheries, including straddling fishery resources;*
- b. *criteria for what constitutes evidence of an encounter with a VME, in particular threshold levels and indicator species for all gears;*
- c. *the most appropriate response to a VME encounter, including inter alia closing particular areas to a particular gear type or types;*
- d. *the interim SIOFA Standard Protocol for Future Protected Areas Designation adopted by the Meeting of the Parties in 2018; and*
- e. *research and management plans, to be adopted at MoP6, for each of the protected areas listed in Annex 3. Such plans shall include, inter alia, conservation and management objectives taking socio-economic considerations into account where possible, appropriate measures to implement these objectives and timeframes for evaluation and review.*

As regards paragraph 6 of [CMM 2020/01](#), the SC provided the following advice:

- a. Status of stocks of principal deep-sea resources: the status of orange roughy and alfonsino stocks have been recently assessed and advice has been provided to MoP by the SC. Preliminary work on toothfish to develop indices of abundance and distribution (CPUE and tag data) is ongoing but has not yet resulted in advice on stock status. Advice on the stock status of hapuka and oilfish has not been developed.
- b. Criteria of what constitutes evidence of a VME: SC has provided advice to the MoP on thresholds and indicator taxa (see [CMM 2020/01](#)). The MoP endorsed the recommendation in paragraph 89 of the [SC6 report](#) that the draft VME taxa list ([PAEWG3 Report](#), Annex D) be distributed to the fishing authorities and on-board bottom fishing vessels for improving VME taxa identification (published on the [SIOFA website](#)). Further work on VME indicator taxa and their thresholds is included in the updated SC work plan under Projects PAE2021-01 and PAE2021-03, and under workshop meetings to further develop these topics.
- c. Appropriate response to VME encounters: a response associated with encounters is included in [CMM2020/01](#), and some CCPs have taken a more precautionary approach than what defined in the CMM. However, no advice on this has been provided by the SC to the MoP and no work is currently planned. Similar work to scientifically resolve these issues in other Regional Fisheries Management Organisations has proven to be extremely challenging.
- d. Interim SIOFA Standard Protocol for Future Protected Areas Designation adopted by the Meeting of the Parties in 2018: the interim protocol was adopted at MoP5 ([Annex K of the report](#)).
- e. Research and management plans for protected areas: The development of research and monitoring plans for protected areas is scheduled for the 2022/23 SC workplan.

[CMM 2020/01](#) prescribes that:

7. *The Scientific Committee shall, by no later than the close of the ordinary meeting of the Scientific Committee in 2020, and thereafter whenever a substantial change to the fishery has occurred or new data has otherwise been provided to the Scientific Committee warranting changes, develop and provide advice and recommendations to the Meeting of the Parties on:*

- a. *an appropriate SIOFA bottom fishing footprint based on the data provided by CCPs to the Secretariat under paragraph 20; and*
- b. *a SIOFA Bottom Fishing Impact Assessment (SIOFA BFIA). The SIOFA BFIA shall take into account the activities of all fishing vessels to which this CMM applies that, at the time the SIOFA BFIA is prepared, are engaged in, or intending to engage in, bottom fishing within the agreed SIOFA bottom fishing footprint;*

As regards paragraph 7 of [CMM 2020/01](#), the SC provided the following advice:

- a. SIOFA bottom fishing footprint: A bottom fishing footprint was presented at [PAEWG4](#), as an outcome of project PAE2021-04, and the 7th meeting of the SC ([SC7 report](#)). A working paper (MOP-09-12 SIOFA bottom fisheries footprint) has been submitted for the 9th Meeting of the Parties (MoP9) for its consideration.
- b. SIOFA BFIA: A BFIA (Mormede 2022) was considered at [PAEWG4](#) and [SC7](#). The [SC7 report](#) contained recommendations (paragraph 199) to the MoP on details of this BFIA and how to reconcile the cumulative BFIA with the BFIA from CCPs,

[CMM 2020/01](#) prescribes that:

8. The Scientific Committee shall also periodically review all benthic taxa bycatch data to inform its consideration of the location of potential VMEs and potential impacts thereon.

As regards paragraph 8 of [CMM 2020/01](#), the SC workplan contains a standing item to review the benthic taxa bycatch data to inform its consideration of the location of potential VMEs and potential impacts thereon. No VME encounters have been notified under CMM2020/01. Predictive mapping of VMEs is being undertaken as the EU funded project PAE2020-02, which should be completed by the end of 2022 (methods and preliminary results were presented to the 4th meeting of the Protected Areas and Ecosystems Working Group, [PAEWG4](#))

[CMM 2021/02](#) – Conservation and Management Measure for the Collection, Reporting, Verification and Exchange of Data relating to fishing activities in the Agreement Area (Data Standards)

[CMM 2021/02](#) prescribes that CCPs should submit their annual national reports to the SC, and they take into account the guidelines prepared by the Scientific Committee for the preparation of such reports (paragraph 9c). The [SC7](#) has tasked the Secretariat with developing standardised templates for the annual reports.

[CMM 2021/02](#) prescribes that:

16. By 2023, the Scientific Committee shall develop and adopt a template for the observer reports, and a template for an observer data collection form that may be used by observers in subsequent years.

The requirements for observer data collection and reports are summarised in CMM2021/02. A project to develop the harmonisation of observer programmes has been funded under the EU funded SIOFA SEAs project (scheduled to start later in 2022).

A standard template for the submission of National reports, which contains an overview of observer coverage and templates for reporting on observed bycatch and biological measurements, have been

considered by the SC. The template has been periodically updated and revised, following recommendations by CCPs to SC. At SC7, the SC recommended that the MoP task the Secretariat with developing an updated template for annual national reports in consultation with CCPs to enhance the utility of annual reports, including the possible inclusion of finer-scale data and related data confidentiality issues.

[CMM 2021/02](#) prescribes that:

17. By 2023, the Meeting of the Parties, based on recommendations from the Scientific Committee and the Compliance Committee shall adopt a SIOFA framework for scientific observation clarifying all the aspects related to the role.

In 2021, the SC held a workshop on observer harmonisation. Recommendations from the workshop were presented to the SC and SC Chair and the Secretariat have been tasked with undertaking intersessional discussions with CCPs on a potential code of conduct that specifies Scientific Observer, CCPs, and vessel responsibilities under a SIOFA Code of Conduct, including requirements for independence, managing conflicts of interest, and health and safety considerations for Scientific Observers.

A project to develop the harmonisation of observer programmes has been funded under the EU funded SIOFA SEAs project (scheduled to start later in 2022).

[CMM 2016/03 – Conservation and Management Measure for Data Confidentiality and Procedures for access and use of data \(Data Confidentiality\)](#)

This CMM has no specific requirements specified for the Scientific Committee

The SC has worked on matters related to transparency and data confidentiality related to [CMM 2016/03](#), although these are not specifically prescribed by the CMM.

The results of this work have been described in a working paper (MoP-09-10 – Transparency and distribution of documents) submitted by the SC Chairs and the Secretariat for the consideration of the MoP9.

[CMM 2016/04 – Conservation and Management Measure on Vessels without Nationality \(Vessels without Nationality\)](#)

This CMM has no specific requirements specified for the Scientific Committee

[CMM 2016/05 – Conservation and Management Measure regarding the use of large-scale pelagic driftnets and deepwater gillnets in the Southern Indian Ocean Fisheries Agreement Area \(Pelagic Driftnets and Deepwater Gillnets\)](#)

The CMM has no specific requirements specified for the Scientific Committee

CMM 2018/06 – Conservation and Management Measure on the Listing of IUU Vessels (IUU Vessel List)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2019/07 – Conservation and Management Measure for Vessel Authorisation and Notification to Fish (Vessel Authorisation)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2020/08 – Conservation and Management Measure establishing a Port Inspection Scheme (Port Inspection)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2018/09 – Conservation and Management Measure for Control of fishing activities in the Agreement Area (Control)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2019/10 – Conservation and Management Measure for the Monitoring of Fisheries in the Agreement Area (Monitoring)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2020/11 – Conservation and Management Measure for the Establishment of a Southern Indian Ocean Fisheries Agreement (SIOFA) Compliance Monitoring Scheme (Compliance Monitoring Scheme)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2019/12 – Conservation and Management Measure for Sharks (Sharks)

[CMM 2021/12](#) prescribes that:

2. CCPs shall ensure that fishing vessels flying their flag do not target any deep-sea shark species listed in Annex 1 within the Agreement Area, until the Scientific Committee defines and the Meeting of the Parties agrees on possible appropriate fishing mortality and harvest levels for any of these species.

4. By 2020 the Scientific Committee shall advise the Meeting of the Parties on the need to adopt any appropriate by-catch limits for relevant SIOFA deep sea shark species and fleets, including on scientific and data needs for underpinning the elaboration of such advice.

7. This CMM shall be reviewed every second year by the Scientific Committee and the Compliance Committee, unless the Meeting of the Parties decides otherwise.

No advice has been presented to the MoP on possible appropriate fishing mortality and harvest levels for any of these species. 4. No advice has been presented to the MoP on appropriate by-catch limits for relevant SIOFA deep sea shark species and fleets.

CMM 2019/13 – Conservation and Management Measure on mitigation of seabirds bycatch in demersal longlines and other demersal fishing gears fisheries (Mitigation of Seabirds Bycatch)

[CMM 2021/13](#) prescribes that:

3. Until such time that the SIOFA Scientific Committee has developed advice for the Meeting of the Parties on the most appropriate response to mitigate and minimise incidental bycatch of seabirds by demersal fishing gears deployed in the Agreement [continues with specific mitigation measures...]

6. The Scientific Committee and the Compliance Committee will review this CMM every four years, unless the Meeting of the Parties decides otherwise.

The SC provided the following advice to the MoP requesting it note that the SC recommended that further discussions of data reporting related to seabird bycatch mitigation measures be held at the proposed seabird data collection and bycatch mitigation measures workshop.

The SC has recommended to the MoP that pelagic longliners operating in the SIOFA Area follow IOTC Resolution 12/06 on reducing the incidental bycatch of seabirds in longline fisheries (see paper MOP-09-19). In 2022/23, the SC proposes to hold a workshop with scientists, managers, industry representatives and observers to consider how seabird mitigation measures may be progressed further.

CMM2 2021/14 – Conservation and Management Measure for High Seas Boarding and Inspection Procedures for the Southern Indian Ocean Fisheries Agreement (High Seas Boarding and Inspection Procedures)

This CMM has no specific requirements specified for the Scientific Committee

CMM 2021/15 – Conservation and Management Measure for the Management of Demersal Stocks in the Agreement Area (Management of Demersal Stocks)

[CMM 2021/15](#) prescribes that:

Status of Stocks

3. The Scientific Committee shall provide annual reports, based on the best available science, on the status of the demersal fisheries resources targeted in the Agreement Area, relative to available and/or relevant reference points. The reports shall include, where possible, projections of stock status over a period no less than 20 years, with 5 years steps, relative to a range of fishing mortality. In addition to the annual report on stock status, the Scientific Committee will provide management advice relative to available and/or relevant reference points.

Orange Roughy

5. Stock assessment: The orange roughy stocks shall be the subject of a full stock assessment to be assessed every three to five years. In the interim period available information on ORY stocks shall be presented annually.

6. The SC shall provide a summary of future data needs to improve assessment accuracy, as well as provide a summary to MoP-7 on progress against the ORY work plan.

Toothfish

9. The Scientific Committee shall, by no later than the close of its 7th ordinary meeting in 2022, provide advice and recommendations on:

*a. a biologically appropriate catch limit for the populations of *D. eleginoides* occurring in the SIOFA portion of Williams Ridge and Del Cano Rise;*

b. appropriate bycatch mitigation measures, including for benthic bycatch and seabirds; and

*c. any other matter that the Scientific Committee determines as relevant or necessary for the sustainable management of the *D. eleginoides* populations.*

10. In formulating its advice and recommendations to the Meeting of the Parties in respect of this CMM, the SIOFA Scientific Committee shall take full account of relevant CCAMLR Scientific Committee material.

27. In 2020 the SC shall make recommendations in order to build an area wide habitat model, a spatial and temporal CPUE analysis, an estimate and map of local abundancies and a local population assessment. It shall further advise on any necessary improvements to data collection in order to reduce future assessment uncertainty.

28. The SC shall also address the issues related to depredation

*29. At its ordinary meeting in 2020 the Scientific Committee will advise on the appropriate limits for relevant species caught as bycatch in *Dissostichus* spp. fisheries.*

*30. The provisions above shall be reviewed annually until a collaborative approach involving SIOFA and CCAMLR is established. This shall include sharing of relevant data, undertaking collaboratively the stock assessments and agreeing in coherent, fair and scientifically sound conservation and management measures for the *Dissostichus* spp that are shared by the two organisations.*

Alfonsino

52. The MoP requests that the SC assess the *Beryx splendens* stocks in 2022 at the ordinary meeting of the Scientific Committee (if the SC, in 2021, determines that suitable data exist to undertake that assessment). In addition, the SC is requested to provide advice on a regular assessment schedule for future years

53. The Scientific Committee shall provide clear advice and guidance on any necessary changes to data collection in order to reduce future assessment uncertainty.

The SC has progressed work related to [CMM 2021/15](#) as requested by MoP8, by

3. Updating and revising the overview of fisheries report (paper MoP-09-15) and proposing the development of fisheries and ecosystem summary reports (see SC7, MoP-09-INFO-08)
5. Updating its advice resulting from an assessment of orange roughy (SC7, MoP-09-INFO-08)
6. Proposing a review of information requirements to be included on its agenda for SC8 to address data and knowledge gaps)
9. (a) No advice has been made on biologically appropriate catch limits for the populations of *D. eleginoides* occurring in the SIOFA portion of Williams Ridge and Del Cano Rise;
(b) No advice has been made on appropriate bycatch mitigation measures, including for benthic bycatch and seabirds
(c) A toothfish tagging protocol (MoP-09-INFO-09) and a proposal for the exchange of tag data between SIOFA and CCAMLR (MoP-09-13) have been presented to MoP9.
10. CCAMLR advice has been included in the provision of the tagging protocol and the exchange of tag data with CCAMLR
27. Provision for a wide-area habitat model is included within the SC workplan
28. On issues of depredation, SC7 recommended that the MoP adopt the protocol specified in SERAWG-03-06 for documenting all interactions with marine mammals and for collecting photo-identification data for all vessels.
29. Scientific Committee has not provided advice on the appropriate limits for relevant species caught as bycatch in *Dissostichus* spp. fisheries.
30. The provisions of the CMM are considered annually at SC, and specific advice on items addressed by SC has been provided to the MoP.
52. Advice on the status of the *Beryx splendens* stocks, based on an age structured production model, has been provided at MoP7
53. Advice and guidance on any necessary changes to data collection in order to reduce future assessment uncertainty was provided at MoP7.

References

Mormede, S. 2022. Calculating bottom fishing impact for trawl and longline gears in SIOFA. Pages 1–