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7th Meeting of the Parties of the South Indian Ocean Fisheries Agreement (MoP7)

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Report of the Chairperson of the Scientific Committee to the 7th Meeting of Parties

Relates to agenda item: 5 Working paper ☐ Info paper ☒

Alistair Dunn, Chairperson of the Scientific Committee

Abstract

Report of the Chairperson of the Scientific Committee to the 7th Meeting of Parties

Recommendations *(working papers only)*

The MoP adopts the report of the Fifth Meeting of the Scientific Committee (SC5) and considers the recommendations and requests from the Scientific Committee summarised under Agenda Item 13 of the SC5 report.

Introduction

1. I am pleased to present the report of the Fifth Meeting of the Scientific Committee (SC5) of the Southern Indian Ocean Fisheries Agreement (SIOFA) to the MoP. Despite the unpredictable impact of the global pandemic, the Secretariat, science working groups, and Scientific Committee have worked online and by email correspondence over the past months to progress the scientific work of SIOFA. I thank the Secretariat for their efforts in enabling the online forums and video conferencing systems that allowed this work to continue.

2. The Fifth Meeting of the Scientific Committee (SC5) of the Southern Indian Ocean Fisheries Agreement (SIOFA) was held via Online Forum and WebEx Videoconferences on 7–31 July 2020, and included items on its agenda from the 2nd Protected Areas and Ecosystems Working Group (PAEWG2) and the 2nd Stock and Ecological Risk Assessment Working Group (SERAWG2). The Scientific Committee report was adopted according to the rules of procedure on 31 July 2020.

3. The Scientific Committee report is given in paper MOP-07-18. This summarises the discussions at Scientific Committee, and records the requests and recommendations to the MOP, the Secretariat, and the scientific working groups. Consolidated advice to the MoP is summarised in Agenda item 13 of the SC5 report and later in this report.

4. Due to the reduced format of the Scientific Committee meetings some items on its agenda were not discussed and have been postponed until 2021.

5. The Scientific Committee noted that the 12-month extension had ended for the Scientific Committee Chair (Dr Ilona Stobutzki) and Vice Chair (Dr Tsutomu Nishida) and that neither can serve any additional terms. The Scientific Committee thanked the Chair for her guidance, leadership and professionalism, and recognised and commended the commitment and hard work of the Scientific Committee Chair and Vice Chair.

6. During the intersessional period, the MoP appointed Alistair Dunn to the position of Scientific Committee Chair from November 2020. The appointment is up until the conclusion of the 8th ordinary Meeting of the Parties in 2021 with the possibility of renewal if, at that time, there is no candidate available from a Contacting Party and the Chairperson receives a positive review of the first term from the MoP.

7. I note that the position of Vice-Chair is still vacant and request Scientific Committee Members to submit nominations for the position by email to the Chair of the Scientific Committee for consideration by the Scientific Committee.

8. The Scientific Committee report included on its agenda the following items:
   - Overview of SIOFA fisheries
   - Historical catch and effort data
   - Scientific data standards
   - Vulnerable marine ecosystems (VMEs)
   - Stock assessment and ecological risk assessment
   - Impacts of fishing on associated and dependent species
   - Proposals to bottom fish in the Agreement Area in a manner at variance with established measures

- Cooperation with other RFMOs and international bodies
- Review and development of CMMs
- Scientific Committee work plan and research activity budget
- Cooperation with other RFMOs and international bodies
- Future meeting arrangements

Consolidated advice to the Meeting of Parties

9. In relation to SC5 Agenda item 4.1 Spatial Extent of Historic Catch Data, Bottom Fishing Footprint: The Scientific Committee **requested** that the MoP provide clarification on the intended use of the SIOFA bottom fishing footprint so the Scientific Committee can provide methods for developing footprints for that purpose (SC5, Paragraph 49).

10. In relation to SC5 Agenda item 7.3 Alfonsino: The Scientific Committee **recommended** that the MoP, in light of the uncertainties around the stock assessment should take a cautious approach when applying the results (SC5, Paragraph 119).

11. In relation to SC5 Agenda item 7.4 Patagonian toothfish: The Scientific Committee **recommended** the MoP:
    a. request CCPs adopt a protocol for documenting all interactions with marine mammals for all longliner vessels operating in the SIOFA Area.
    b. encourage CCPs to adopt operational actions to mitigate such interactions and report on the results of those actions at SC6 (SC5, Paragraph 134).

12. Regarding CMM 2019/12 (Sharks), paragraph 4, the Scientific Committee **requested** the MoP to urgently consider additional precautionary measures to mitigate bycatch of deepwater chondrichthyans. The Scientific Committee noted the absence of any attempts or methods to inform the setting of SIOFA-specific bycatch limits and discussed potentially useful bycatch mitigation measures such as:
    a. Longline gear modifications, such as the use of nylon snoods instead of wire snoods, noting [SC5] paragraphs 86 and 87 that discuss potential trade-offs with such an approach
    b. Prohibition on the retention of deepwater chondrichthyans
    c. Live release, where possible, of all shark bycatch (see, for example, CCAMLR conservation measure (CM) 32-18)
    d. Move-on rules such as those used by CCAMLR (for example, as per CCAMLR CM 33-03), whereby vessels are required to move-on if bycatch of certain species (including deepwater sharks) exceeds a percentage of the catch limit for that fishery, or exceeds a particular weight/number threshold per fishing operation (e.g. set or tow).

13. In relation to SC5 Agenda item 7.8 Other teleosts: The Scientific Committee **recommended** that the MoP note the ongoing issues around data provision to the Secretariat that had delayed or constrained Scientific Committee work, including the ERA on other teleosts (SC5, paragraph 170); and **recommended** the MoP request CCPs facilitate timely provision of data to the Secretariat and Scientific Committee so that the Scientific Committee can undertake its work (SC5, paragraph 170).

14. In relation to SC5 Agenda item 11.1 Draft CMM on fishing research and exploratory fisheries: The Scientific Committee **requested** that the MoP provide clarification on the intended purpose of the framework for scientific research to facilitate its further development (SC5, Paragraph 181)

15. In relation to SC5 Agenda item 15 Future meeting arrangements: The Scientific Committee recommends that 2.5 days be allocated for the PAEWG3 meeting, 2.5 days for the SERAWG3 meeting and 5 days for the SC6 meeting; and requested the Secretariat develop a plan for the Scientific Committee and associated working groups, in the event that face-to-face meetings are not possible.

Overview of SIOFA fisheries

16. Annual National reports were submitted by Australia, China, Comoros, Cook Islands, European Union, France (Territories), Japan, Korea, Seychelles, Chinese Taipei and Thailand. An annual report was not submitted by Mauritius. The annual reports were consolidated to produce an overview of SIOFA fisheries (see SC5, Annex F). A summary of the main fisheries, total catch, fishing vessels, and fishing effort is given in Table 1 and 2, and in Figure 1.

Table 1: Main fisheries (target species, gear, participants, and the SIOFA sub-area)

Key species	Gear	Participants (reported in national reports between 2000 and 2019) *	SIOFA sub-area
Patagonian toothfish	Demersal longline, and traps	EU-Spain, France (Territories), Japan, Korea	3b, 7
Orange roughy	Demersal trawl	Australia, Cook Islands, China (2000–2002)	Associated with seafloor features
Alfonsino	Midwater trawl	Australia, Cook Islands, Japan, Korea	Associated with seafloor features
Sauries and scads	Demersal trawl, and traps	Thailand	8, Saya de Malha Bank
Shallow-water (<200m) snappers, emperors and groupers	Demersal longline, hook and line, and demersal trawl	EU-France, Thailand, Comoros	8, Saya de Malha Bank
Deeper water snappers, lutjanids, Hapuku	Demersal longline, and dropline	Australia, China, EU	
Deepwater sharks, Portuguese dogfish	Demersal longline	EU (Spain)	
Mackerel and Brama spp.	Purse seine with lights	China	
Oilfish	Longline	Chinese Taipei	

** A national report from Mauritius was not available for 2019 (source: SIOFA Secretariat).*

Table 2: Summary of SIOFA vessels and fishing effort for 2019 and 2013–2019.

Gear	Number of vessels 2019 *	Number of vessels 2013–2019 *	Fishing effort 2013–2019
Trawl	3	3–6	1 644–9 084 shots and 856–3 250 hours
Multipurpose (trawl/line)	3	0–61	
Longline	44	2–47	634 k–26 840 k hooks
Hand line	1	1–2	
Pot/trap	0	0–2	0–50
Gillnet	0	0–1	0–5 442 km
Seine net	0	0–8	0–10 000 hours

** A national report from Mauritius was not available for 2019 (source: SIOFA Secretariat).*

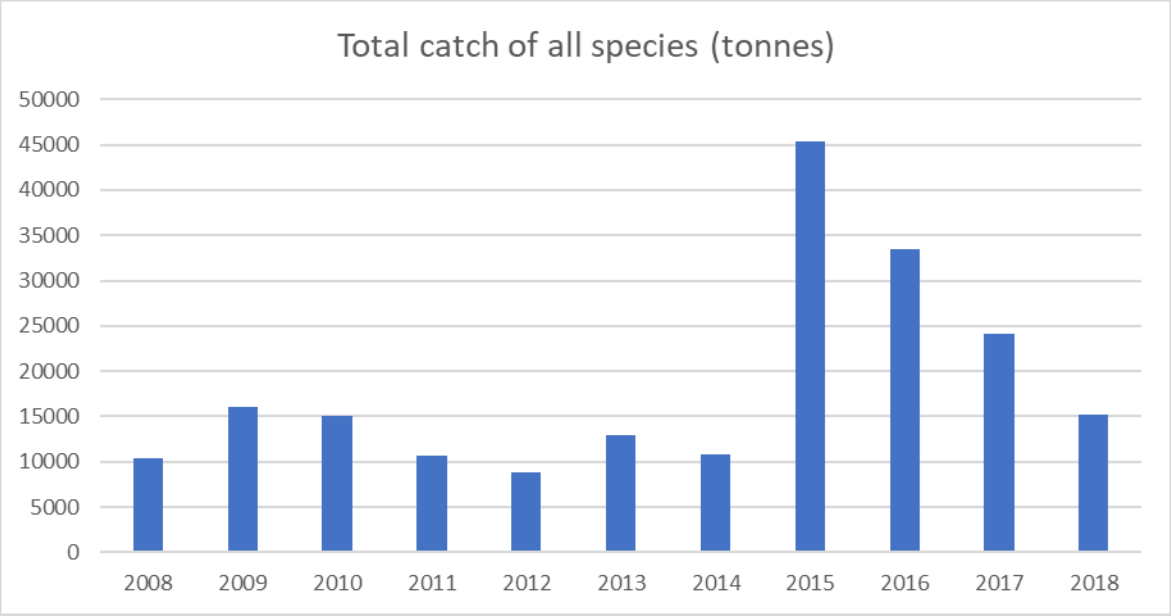

Figure 1: Total reported catch (t) of all species 2008–2018 (source: SIOFA Secretariat).

Historical catch and effort data

17. The Secretariat summarised the historical catch and effort data status under CMM 2019/02 on data standards (paper SC-05-INFO-05). It highlighted the data availability and quality over the period 2000–2018 by CCPs. Several CCPs will be providing an update of their historical data in the near future, and these will be used to improve the stock assessment and bottom impact assessment analyses for Scientific Committee when available.

18. The Scientific Committee **requested** that the MoP provide clarification on the intended use of the SIOFA bottom fishing footprint so the Scientific Committee can provide methods for developing footprints for that purpose.

19. The Scientific Committee requested that the PAEWG prepare a paper outlining options for methodologies for different gear types and objectives, as well as options for addressing the aforementioned technical issues and the associated consequences/trade-offs, to facilitate the discussions of the MoP.

20. The Scientific Committee requested that the PAEWG develop a work plan, including timeframe to progress this work as quickly as possible, to address the issues identified in the PAEWG2 Report, specifically:
    a. exploring approaches to integrating historic CCP data collected at different spatial resolutions;
    b. recommending whether depth exclusions should be used to remove unfished areas;
    c. recommending the approach to grids with a single fishing event or record, including verifying that these represent fishing events and are not data errors; and
    d. specifying criteria for determining ‘significant intensity’

Scientific data standards

21. Discussion on the templates for data submission was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

22. The Scientific Committee discussed the importance of updating the SIOFA observer database, recognising that the lack of such data created an issue in the alfonsino stock assessment, whereby it was only possible for the consultant to obtain size data from one fleet and for one year (2018), even though more size data were available. The Scientific Committee also recognised that the delay in updating this database had been in part due to the limited time and resources of the Secretariat in 2019.

Vulnerable marine ecosystems (VMEs)

23. Discussion on VME mapping, VME indicator taxa, weight conversion of VME indicators, and the SIOFA standard protocols for future protected areas designation was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

24. The Scientific Committee noted that the MoP has tasked it with providing advice on what constitutes evidence of a VME encounter, particular threshold levels and indicator species for the implementation of CMM 2019/01 (Interim Management of Bottom Fishing). At SC4, the Scientific Committee reached consensus on a threshold for longlines, but not on trawl gears, and also recommended a response for VME encounters.

25. The Scientific Committee noted that the existing threshold values for trawl gears should be maintained as agreed by MoP6 (2019) (MoP6 Report, para 11bis) until the Scientific Committee provides advice for the setting of a new optimum value.

26. The Scientific Committee noted that there is a possible trade-off between potential gear modifications that may result in small amounts of plastic pollution and fishing gear loss, and the potential conservation of deep-sea sharks and mitigation of shark bycatch in accordance with CMM 2019/12 (Sharks) (and particularly paragraph 5 thereof, which states that CCPs shall, where possible, undertake research to identify ways to make all relevant fishing gears more selective to minimise deep sea shark bycatch and shall provide relevant information to the Scientific Committee).

27. The Scientific Committee noted the need to make further progress on improving individual impact assessments and developing a cumulative BFIA for SIOFA.

28. The Scientific Committee requested that the PAEWG develop a work plan, with a timeframe, to progress the work and report to SC6, including:
    a. continuing intersessional correspondence regarding methods for assessing the cumulative SIOFA BFIA, and
    b. hiring a consultant to undertake the cumulative trawl and longline BFIAs.

Stock assessment and ecological risk assessment

29. Discussion on the SIOFA stock assessment framework and Saya de Malha Bank species was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

30. The Scientific Committee considered the standardised CPUE series for the alfonsino resource in the SIOFA Area. The Scientific Committee noted the uncertainties around the use of CPUE data, but recognised that, in the absence of other more suitable indices of abundance, the standardised CPUE data was the best information that was currently available.

31. The Scientific Committee noted the possibility of hydro-acoustic data being a potential index of abundance or a basis to verify trends in CPUE data. The Scientific Committee recommended conducting a feasibility assessment of the cost-benefit of collecting acoustic data, including clarifying target strength, vessel calibration, inter-vessel comparison and spatio-temporal coverage.

32. The Scientific Committee noted the assessment model for alfonsino in the SIOFA Area, and that the results indicate that the stocks are both at about 60% of their pre-exploitation spawning biomasses in West and East. Neither stock is overfished, where overfished is defined as $SSB<SSB_{MSY}$, nor is overfishing, where overfishing is defined as $F>F_{MSY}$, taking place. The low M (M=0.15) sensitivity has the most influence on the assessment results. The selection of catch levels (i.e. 2018 catches or the last 5-year average) has a marked influence on projections of depletion (more so for the West than for the East).

33. The Scientific Committee agreed to divide the stock into two management units: West and East, split along 80 °E, until new scientific information becomes available.

34. In relation to the Alfonsino stock assessment, the Scientific Committee noted:
    a. that although the precision of the assessment results appears high, this was a consequence of necessary model simplicity given the limited data, and in reality, the precision is low.
    b. the uncertainties in the assessment, including being constrained by limitations related to the CPUE standardisation and catch at length data available.
    c. the sensitivity of the results to the assumed value of *M*. The base case assumes $M=0.2\ y^{-1}$; this was informed by a literature review. The Scientific Committee agreed that there was no information available to determine whether *M* in the SIOFA area should be higher or lower.

35. The Scientific Committee **recommended** that the MoP, in light of the uncertainties around the stock assessment, should take a cautious approach when applying the results.

36. The Scientific Committee considered a preliminary analysis of Patagonian toothfish fishing data from the Del Cano Rise in the SIOFA Area, and made recommendations for additional analyses.

Impacts of fishing on associated and dependent species

37. The Scientific Committee considered paper SC-05-21, which provided a study of whale interactions with fishing activities targeting Patagonian toothfish.

38. The Scientific Committee acknowledged the existence of depredation in the SIOFA Area and noted the potential scale of impact on toothfish catches, thereby affecting toothfish assessment and estimated biomass in the SIOFA Area, and the commercial viability of fishing operations.

39. The Scientific Committee noted that there is evidence that the depredation behaviour is spreading from the Crozet population and could become a significant issue for fishing operations in the SIOFA Area.

40. The Scientific Committee **recommended** the MoP:
    a. request CCPs adopt a protocol for documenting all interactions with marine mammals for all longliner vessels operating in the SIOFA Area.
    b. encourage CCPs to adopt operational actions to mitigate such interactions and report on the results of those actions at SC6.

41. The Scientific Committee noted that, due to the lack of working papers and time constraints, there was no new scientific research on status of the orange roughy stocks during SERAWG2.

42. The Scientific Committee noted that 2018 trawl effort was lower than 2017 and the 2018 catch was substantially lower than the 2017 catch, and agreed that given the trend in effort and catch, the status of the orange roughy stock is unlikely to have changed substantially since its previous advice.

43. The Scientific Committee considered the ERA on deepwater chondrichthyans, and recommended that until more rigorous estimates of fishing mortality can be derived, the ERA be updated every five to ten years, or whenever there is a substantial change in the fishery (e.g. large changes in catch and/or effort), and that these periodic updates be reflected in the SIOFA Scientific Committee workplan.

44. Regarding CMM 2019/12 (Sharks), paragraph 4, the Scientific Committee **requested** the MoP to urgently consider additional precautionary measures to mitigate bycatch of deepwater chondrichthyans. The Scientific Committee noted the absence of any attempts or methods to inform the setting of SIOFA-specific bycatch limits and discussed potentially useful bycatch mitigation measures such as:
    a. Longline gear modifications, such as the use of nylon snoods instead of wire snoods, noting [SC5] paragraphs 86 and 87 that discuss potential trade-offs with such an approach
    b. Prohibition on the retention of deepwater chondrichthyans
    c. Live release, where possible, of all shark bycatch (see, for example, CCAMLR conservation measure (CM) 32-18)
    d. Move-on rules such as those used by CCAMLR (for example, as per CCAMLR CM 33-03), whereby vessels are required to move-on if bycatch of certain species (including deepwater sharks) exceeds a percentage of the catch limit for that fishery, or exceeds a particular weight/number threshold per fishing operation (e.g. set or tow).

45. The Scientific Committee considered an update on the ERA for the effects of bottom fishing gears on SIOFA teleosts and noted that there have been no major changes to the results if the ERA.

46. The Scientific Committee noted that there were a number of uncertainties in the results, and these should be viewed with caution.

47. With regard to Agenda item 7.9 Harvest Strategies, the Scientific Committee noted that no papers were provided for this agenda item. The Scientific Committee agreed to progress this work, in line with the agreed work plan (SC4 Report, Annex X) and reflected in the Scientific Committee

Operational work plan, noting the MoP6 had approved funding for this work in 2020 (MoP6 Report, Annex Q, EUR 15,000 in 2020, of a requested EUR 30,000 across two years).

Proposals to bottom fish in the Agreement Area in a manner at variance with established measures

48. There were no proposals to bottom fish in the Agreement Area in a manner at variance with established measures.

Review and development of CMMs

49. Discussion on CMM 2019/01 (Interim Management of Bottom Fishing) and CMM 2016/03 (Data Confidentiality) was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

50. The Scientific Committee considered a proposal for a draft CMM to establish a framework for scientific research, and a draft CMM that outlines a framework on new fisheries.

51. The Scientific Committee requested that the MoP provide clarification on the intended purpose of the framework for scientific research to facilitate its further development. (SC5 Paragraph 181).

52. The Scientific Committee recommended a revised draft of the CMM on fishing research and exploratory fisheries and paper presented by the EU be submitted to the Scientific Committee 2021 and requested the EU engage with CCPs through intersessional discussions and further refine the proposals (SC5 paragraph 184)

Scientific Committee work plan and research activity budget

53. Discussion on the Scientific Committee long term research plan and the review of consultant's recruitment procedure was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

54. The SC discussed the progress against the operational work plan 2018-2021 (SC4 Report, Annex W) and adopted an updated operational work plan 2019-2022 (Annex I). The updated operational work plan includes updates from the PAEWG (including Annex G, the updated cumulative BFIA workplan) and SERAWG (including Annex H, the updated stock assessment and harvest control rules workplan).

55. The Scientific Committee requested the Secretariat commission the research activities identified for 2020 as soon as possible, so that the outcomes could be reported to SC6. (SC5 Paragraph 188)

Cooperation with other RFMOs and international bodies

56. Discussion on the FAO ABNJ Deep Seas Project, the Southwest Indian Ocean Fisheries Commission (SWIOFC), and the Agreement on the Conservation of Albatrosses and Petrels (ACAP) was postponed to 2021 due to the reduced format of the 2020 Scientific Committee meeting.

57. The Scientific Committee agreed that CCAMLR remains an important international body for the Scientific Committee and CCPs to collaborate with as reflected in the obligations within CMM 2019/15 (Management of Demersal Stocks) (SC5 paragraph 174).

Future meeting arrangements

58. The Scientific Committee recommended holding the PAEWG3 meeting, the SERAWG3 meeting, and the Scientific Committee meeting in the first half of March, if face-to-face meetings are possible. The Scientific Committee requested the Secretariat work intersessionally with CCPs to identify preferred dates as soon as possible (SC5 paragraph 197)

59. The Scientific Committee, noting the unpredictable impact of the global pandemic, requested the Secretariat develop a contingency plan for the Scientific Committee and associated working groups, in the event that face-to-face meetings are not possible (SC5 paragraph 198).

60. The Scientific Committee recommended that 2.5 days be allocated for the PAEWG3 meeting, 2.5 days for the SERAWG3 meeting and 5 days for the SC6 meeting (SC5 paragraph. 199).

Acknowledgements

61. I thank the Chair of the MoP, the Executive Secretary and Database Manager of SIOFA, and the Chairs of PAEWG and SERAWG for their assistance and guidance in the preparation of this report. I look forward to working with the Scientific Committee participants and CCPs of SIOFA in the upcoming year.

62. I would also like to thank the delegates from the CCPs; Executive Secretary and Database Manager of SIOFA; the Chairs of PAEWG and SERAWG; FAO and regional experts; CCAMLR; researchers commissioned to undertake work; the CCPs that progressed papers and research; SIOFA observers; the fishers, scientists, data managers, fishery managers and teams who provided data, analyses and inputs; and the rapporteurs for their valuable contributions and engagement at the 2020 meetings of the Scientific Committee and its working groups.