Report of the Tenth Meeting of the Scientific Committee of the Southern Indian Ocean Fisheries Agreement (SIOFA)

Concarneau Marine Station, Concarneau, France

17–26 March 2025

List of Annexes

Agenda item 1. Opening

1.1 Welcome from the Scientific Committee Chair

1. The Chairperson of the Scientific Committee (SC), Mr Alistair Dunn, opened the meeting.
2. The SC Chairperson expressed his thanks to France (Overseas Territories (OT)) and the Concarneau Marine Station, Muséum national d'Histoire naturelle (MNHN), for hosting the meeting, and welcomed the participants.

1.2 Introduction of participants

3. The list of meeting participants is attached (**Annex A**).

1.3 Opening statements

4. Mr Guillaume Massé, Director, Concarneau Marine Station, MNHN, welcomed the participants and expressed the Marine Station's honour to host a meeting of such a distinguished scientific body. He also highlighted Concarneau's strong links to the fishing industry and the sea.

1.4 Introduction to the meeting facilities and meeting arrangements

5. The Executive Secretary, Mr Thierry Clot, introduced the meeting facilities and the meeting practicalities. He also took the opportunity to express his thanks to France (OT) for providing financial support for the meeting and to the Marine Station, MNHN for preparing for and hosting the meeting.
6. In this report, paragraphs with key recommendations and advice to the Meeting of Parties (MoP) have been highlighted in grey.

Agenda item 2. Administrative arrangements

2.1 Adoption of the agenda

7. The agenda was adopted (**Annex B**).

2.1.1 Confirmation of meeting documents

8. The SC noted that SC-10-06 was submitted late. The SC noted that it was nevertheless possible for the Secretariat to post the paper on the SIOFA website at the same time as the papers that were submitted on time, and the late submission would therefore have not hindered participants' ability to review the paper and prepare for the meeting. The SC agreed to accept the paper, while keeping it labelled as "late" on the SIOFA website.
9. The SC noted that SC-10-INFO-23 was submitted late. The SC agreed to accept the information paper, while keeping it labelled as "late" on the SIOFA website.
10. The SC reaffirmed that if papers are submitted late, the SC will consider and decide whether the papers can be taken up in the meeting on a case by case basis. The SC noted that, especially for delegations that must travel long distances to attend the SC meeting, late paper submissions may not provide delegates with enough time to review and consider these papers.
11. The table of meeting documents and related items (**Annex C**) was confirmed.

2.1.2 Appointment of rapporteurs

12. Mr Alexander Meyer (Urban Connections, Tokyo) was appointed to act as rapporteur, with assistance from delegates.

2.2 Scientific Committee meeting report arrangements

13. The SC Chairperson explained the meeting report arrangements.

Agenda item 3. Fisheries reports

3.1 Annual National Reports 2025
3.1.1 CCP annual National Fisheries Reports

14. Annual National Reports were submitted by Australia, China, the Cook Islands, the European Union (EU), France (OT), Japan, Korea, Mauritius, Seychelles, Chinese Taipei, Thailand, Comoros, and India.

Australia Annual National Report: SC-10-01

15. Australia presented its annual national report. Australian operators are currently authorised by the Australian Government to target various species with midwater trawl, demersal trawl, demersal line, and potting gears. One trip was undertaken by a single vessel using auto longline methods in 2024. The vessel recorded 98 700 demersal longline hooks (16 sets). The majority of catch comprised *Dissostichus eleginoides*. All catch and effort data for fishing operations during 2024 will be submitted to SIOFA in accordance with its Conservation and Management Measure (CMM) on Data Standards (CMM 02(2023)). All data presented in this report comply with Australia's domestic policy associated with the dissemination of fisheries data and this report does not disclose any non-public domain data within the meaning of SIOFA CMM 03(2016) (Data Confidentiality).

16. Australia informed the SC that it is currently conducting a comprehensive review of its toothfish stock assessment for the Heard Island and McDonald Islands, which includes catch of toothfish from the Williams Ridge fishery and is conducted as part of reporting for CCAMLR Area 58.52. Australia will report any relevant results from that review to SIOFA at next year's SC meeting.

17. The SC noted the National Report provided by Australia.

18. The SC noted that Australia has complied with the annual reporting requirements of the SC.

China Annual National Report: SC-10-02

19. China presented its Annual National Report. In the SIOFA Area, China operated four different types of fisheries intermittently from 2000 to 2017: Light seining targeting mackerel and *Bramidae* family; bottom longlining targeting ruby snapper, etc.; demersal trawling targeting dories and orange roughy; and squid jigging targeting squid. From 2018 to 2022, China did not operate any SIOFA fisheries. Based on accumulated data and statistics, the report summarised fishing activities by Chinese-flagged vessels not targeting highly migratory fish stocks in SIOFA Area. The report noted that China has been authorising squid jigging since 2003 in the Indian Ocean. Since 2019, China has been a Contracting Party to SIOFA. In 2023, China registered two squid jigging vessels in the SIOFA Area, but only one of them fished in the SIOFA Area, doing so for two days with a catch of 2.1 kg of squid. In 2024, both vessels operated in the SIOFA Area, catching 2368 kg of squid. In addition, China registered two scientific research vessels that combine pelagic trawling, squid jigging and pelagic longline fishing to conduct scientific surveys on fishery resources in the SIOFA Area in 2024. As of 1 February 2025, the two research vessels were still conducting a fishery resource survey in the SIOFA Area and nearby waters. China plans to elaborate on the relevant survey data and catch data in next year's national report.

20. The SC noted the National Report provided by China.

21. The SC noted that China has complied with the annual reporting requirements of the SC.

22. The SC noted that China is conducting squid fishing operations and scientific

investigations within the SIOFA Area.

23. The SC encouraged China to continue to provide the outcomes of its scientific research in the SIOFA Area to future SC meetings.

The Cook Islands Annual National Report: SC-10-03

24. The Cook Islands presented its Annual National Report. In 2024 the Cook Islands authorised one trawl vessel to fish in the SIOFA Area, focusing on the capture of deep-water finfish species, with a primary emphasis on alfonsino (*Beryx splendens*) and orange roughy (*Hoplostethus atlanticus*) using both bottom and midwater trawls. (The complete species list is provided in Appendix 1 of the National Report). Furthermore, to adhere to conservation efforts, the Cook Islands vessel strictly avoided fishing within the Benthic Protected Areas (BPA) listed in Appendix 2 of the National Report. The vessel has 100% observer coverage, with the observers collecting biological measurements and samples. The vessel also conducts acoustic surveys of orange roughy. The catch obtained from these operations was unloaded in Mauritius. Subsequently, exports of alfonsino were primarily directed to Japan, while orange roughy was predominantly exported to China. Additionally, a portion of the catch was distributed and sold in local markets in Mauritius. The distribution network extended to Thailand, New Zealand, Vietnam, Indonesia, and Australia, ensuring a global reach for the sourced catch.

25. The SC noted the National Report provided by the Cook Islands.

26. The SC noted that the Cook Islands has complied with the annual reporting requirements of the SC.

27. The SC requested that the Cook Islands include information on discarded bycatch in next year's national report.

EU Annual National Report: SC-10-04

28. The EU presented its Annual National Report. The report presented an overview of the fishery data available from the EU fleet operating in the SIOFA Area and updated previous reports to the end of 2024. It included information about catch, catch per unit effort (CPUE), data collection, vulnerable marine ecosystems (VMEs) and other data of interest. The reported noted that all catch and effort data for fishing operations during 2024 will be submitted to SIOFA in accordance with CMM 02(2023) (Data Standards). EU-France did not request any authorisation in 2024 and did not fish in the SIOFA Area. EU-Spain conducted fishing activities (two active vessels, one vessel fished for one day) in the SIOFA Area having a 100% observer coverage. No VME indicator thresholds were triggered during 2024.

29. Australia noted with concern the high and increased catch of sharks, which has increased by 78% over the 2023 level, and expressed particular concern regarding the increased catch of Portuguese dogfish. Australia also noted with concern the high level of bycatch of sharks in the ribaldo (*Mora moro*) and the hapuka (*Polyprion spp.*) fisheries, which was far higher than the catch of ribaldo and hapuka themselves.

30. The EU noted Australia's concern and pointed out that this may be linked to the increased catch of hapuka in 2024 and that it would analyse the data when they are finalised. The EU also noted that compared to 2023, the bycatch of sharks has greatly declined in Subarea 2, but that it has greatly increased in Subareas 4 and 5.

31. The Deep Sea Conservation Coalition (DSCC) noted that the total amount of VME bycatch and the species composition fluctuated year to year. The DSCC requested that the EU conduct further analyses on potential reasons for these fluctuations, such as changes in fishing locations from year to year.

32. The SC noted the National Report provided by the EU.
33. The SC noted that the EU has complied with the annual reporting requirements of the SC.

France (Overseas Territories) Annual National Report: SC-10-05

34. France (OT) presented its Annual National Report. The report summarised and updated fishing activity by French OT-flagged vessels in the SIOFA Area for 2024. It also included the bottom fishing impact assessment (BFIA) report, the VME report, the observer program implementation report, and the annual data verification report, according to CMM 02(2023) (Data Standards) Annex A. The fishing activity was very low in 2024, with only one longline vessel being operated in the SIOFA Area during one trip for a total of 4 days in the toothfish fishery in Subarea 3b, with 100% observer coverage. No VME indicator thresholds were triggered during 2024. All catch and effort data for fishing operations during 2024 will be submitted to SIOFA in accordance with CMM 02(2023). These data comply with French domestic policy associated with the dissemination of fisheries data and the report did not disclose any non-public domain data within the meaning of SIOFA CMM 03(2016) (Data Confidentiality).
35. The SC noted the National Report provided by France (OT).
36. The SC noted that France (OT) has complied with the annual reporting requirements of the SC.
37. The SC noted that there has been no change in the French (OT) fishing fleet and the fishing activities were very low during the previous calendar year.
38. The SC noted that, based on the National Report, the French (OT) BFIA did not need to be updated.

Japan Annual National Report: SC-10-06

39. Japan presented its Annual National Report. The report described Japan's fisheries; catch, effort and CPUE; fisheries data collection and research activities; VME interactions; biological sampling and length/age composition of catches; data verification mechanisms; and the observer program. In the SIOFA Area, Japan has operated two different types of fisheries discontinuously for 48 years (1977–2024). These were trawl fisheries targeting splendid alfonsino and bottom longline fisheries targeting Patagonian toothfish. Based on available information, the report described the information for trawl and bottom longline fisheries respectively, highlighting the most recent five years (2020–2024). Information through 2023 was compiled based on logbooks, and information for 2024 was tentatively compiled from scientific observer data and may be revised next year.
40. The SC noted the National Report provided by Japan.
41. The SC noted that Japan has complied with the annual reporting requirements of the SC.
42. The SC requested that Japan include a more detailed fishing footprint with statistical squares showing the link between location of fishing effort and that of bycatch of VME indicator taxa in next year's national report.

Korea Annual National Report: SC-10-07

43. As Korea was unable to attend the meeting, the SC Chairperson introduced Korea's Annual National Report on its behalf. The Korean report noted that there were no Korean flagged vessels fishing in the SIOFA Area from 2014 to 2024. Korea has no plan to resume fishing operations this year.
44. The SC noted the National Report provided by Korea.

45. The SC noted that Korea has complied with the annual reporting requirements of the SC.

46. The SC noted that no fishing had been conducted by Korean flagged vessels in 2024.

Mauritius Annual National Report: SC-10-08

47. Mauritius presented its Annual National Report. Mauritius has conducted fisheries on the Saya de Malha Bank in Subarea 8, and also conducted fisheries in Subareas 2,3a, and 3b of the SIOFA Area: the industrial shallow water banks fishery, the semi-industrial shallow water banks fishery, the semi-industrial deepwater snapper/grouper fishery, and the trawl fishery. All the fisheries differ with respect to fishing methods, species targeted, catch and vessel/boat size. Mauritian fishing vessels are not involved in fishing with gears that interact with VMEs. In 2024, the Mauritian fleet consisted of five fishing vessels active in the SIOFA Area. Four fishing vessels operated on the Saya de Malha Bank: two in the semi-industrial shallow water banks fishery only, one in the semi-industrial deepwater snapper/grouper fishery only; and one in both fisheries. One new vessel joined the fleet and carried out midwater trawling in SIOFA Sub Areas 2, 3a and 3b. Since 2022, no industrial vessels have operated in the SIOFA Area. The report also provided more detailed descriptions of each fishery and noted the catch, effort and CPUE, fisheries data collection, biological sampling, the data verification mechanism, and the observer and port sampling programmes.

48. The SC noted the National Report provided by Mauritius.

49. The SC requested that Mauritius present catch from its trawl fishery on a tow-by-tow basis in next year's annual report.

50. The SC noted that Mauritius has complied with the annual reporting requirements of the SC.

Seychelles Annual National Report: SC-10-09

51. Seychelles presented its Annual National Report. The report described Seychelles' fishing activities within the SIOFA Area in 2023 and 2024. (The data for 2024 are only available up to June 2024 and remain preliminary.) Two industrial longline vessels were authorised to target oilfish (*Ruvettus pretiosus*) and tuna and tuna-like species. In 2023, fishing efforts were primarily concentrated in Subarea 3b, with a total of approximately 328 700 hooks deployed and a catch of 167.1 tonnes. In contrast, in 2024, the fishing activities shifted largely to Subarea 8, with 243 700 hooks deployed and a catch of 90.2 tonnes, primarily targeting tuna species. This shift led to a significant decline in oilfish catches, which decreased from 161.3 tonnes in 2023 to 6.8 tonnes in 2024. There was also a change in species composition, with an increase in catches of bigeye tuna and yellowfin tuna in 2024.

52. The SC noted the National Report provided by Seychelles.

53. The SC noted that Seychelles has complied with the annual reporting requirements of the SC.

Chinese Taipei Annual National Report: SC-10-10

54. Chinese Taipei presented its Annual National Report. Oilfish, including *Ruvettus pretiosus* and *Lepidocybium flavobrunneum*, was identified as bycatch of the large-scale Taiwanese tuna longline fleet prior to 2005. Parts of tuna longliner fleets shifted to the southwest Indian Ocean for fishing oilfish seasonally after 2005 to obtain extra earnings. The numbers of longliners that fished for oilfish seasonally were between 37 and 51 from 2000 to 2023, and 56 authorised longliners fished for oilfish within the SIOFA Area in 2024. The average catch in the recent 5 years (2020 to 2024) was at

around 5985 t. The report also included more detailed information on catch, effort and CPUE data; fisheries data collection and research activities; biological sampling and length/age composition of catches; data verification mechanisms; and the observer and port sampling programs.

55. The SC noted the National Report provided by Chinese Taipei.
56. The SC noted that Chinese Taipei has complied with the annual reporting requirements of the SC.

Thailand Annual National Report: SC-10-11

57. Thailand presented its Annual National Report. The report summarised and provided updated information on the fishing activities of Thai flagged fishing vessels that operated in the SIOFA Area in 2024. Two vessels fished on the Saya de Malha Bank using trawl and handline in the same fishing ground as the previous year, spanning from latitude 9.00° to 11.00 °S and longitude 60.00° to 62.00 °E. Trawl catch dropped dramatically, consistent with a decrease in fishing trips compared to the previous year. The catch composition was slightly different from the previous year, but remained dominated by targeted groups of round scads, threadfin breams and lizardfishes. In contrast, handline catch increased by 22% and its composition was similar to the previous year, dominated by trevallies, red snappers, jobfish, and groupers. There were no illegal activities reported in 2024. The onboard observer scheme was run smoothly with 100% coverage for both fishing gears. No VME thresholds were triggered in any operations. A total of 413 kg of VME indicator taxa were reported, consisting of sponges and dead corals. A total of 536.30 kg of incidental bycatch was reported, with no reported gear interaction with seabirds or marine mammals. The report also included more detailed information on catch, effort and CPUE data; fisheries data collection and research activities; biological sampling and length/age composition of catches; data verification mechanisms; and the observer and port sampling programs.
58. The SC noted the National Report provided by Thailand.
59. The SC noted that Thailand has complied with the annual reporting requirements of the SC.

Comoros Annual National Report: SC-10-12

60. Comoros presented its Annual National Report. The F.V. *Rinascente 9* was added to the SIOFA Record of Authorised Vessels (RAV) on 6 March 2024, operates under Comorian law, and adheres to all SIOFA CMMs. Targeting lobster (*Jasus* and *Projasus*) species using traps, the vessel completed one fishing trip in 2024 from 30 March to 17 June 2024, with active fishing spanning 45 days. A total of 3123.52 kg of product weight lobster was landed, with a CPUE of 24 kg per line and 0.5 kg per trap. The vessel operated in SIOFA Subareas 2, 3a and 3b using selective fishing methods to minimise bycatch, and no mortalities of seabirds, marine mammals and VME species were recorded. A key challenge during the 2024 season was the lack of reliable scientific data. To address this, the next trips will see the placement of highly trained observers onboard, ensuring comprehensive data collection and improved monitoring.
61. The SC noted the National Report provided by Comoros.
62. The SC noted that Comoros has complied with the annual reporting requirements of the SC.

India Annual National Report: SC-10-13

63. As no representative from India was at the meeting, the Science Officer, Dr Marco

Milardi, introduced India's Annual National Report on its behalf. There were no Indian flagged commercial fishing vessels fishing in the SIOFA Area in 2024. However, India indicated that it may expand the fishing areas of its fisheries to the SIOFA Area in the near future.

64. The SC noted the National Report provided by India.

65. The SC noted that India has complied with the annual reporting requirements of the SC.

3.1.2 Guidelines for the submission of National Reports

66. The Science Officer presented SC-10-INFO-01, the current Guidelines for the Submission of Annual National Reports to the SIOFA SC. The Science Officer invited the SC to consider whether any further updates to the Guidelines are required.

67. The SC noted the usefulness and ease of comprehension of Japan's table for presenting retained and discarded catch by species (Table 4, SC-10-06) and requested that the Secretariat include it as an example in the Guidelines.

68. The SC agreed that it would be useful to include proportional plots of catch against discards by species by year in national reports.

69. The SC agreed to include reference to reporting catch of shark bycatch at the species level or, if not available, the finest taxonomic resolution possible.

70. The SC agreed to include reference to reporting VME indicator taxa captures at the species level and, if not available, the finest taxonomic resolution possible.

71. The SC reviewed and updated the Guidelines for the Submission of Annual National Reports (SC-10-INFO-01-Rev1).

72. The SC recommended the MoP note the revised guidelines for the Submission of Annual National Reports given in SC-10-INFO-01-Rev1 and request the Secretariat make it available on the SIOFA website.

3.1.3 Summary of SIOFA fisheries

73. The Science Officer gave an introductory presentation explaining the different types of SIOFA reports prepared by the Secretariat (Overview of SIOFA Fisheries, SIOFA Ecosystem Summary, and SIOFA Fisheries Summaries for six species) and outlining the aspects that have been changed in the 2025 versions to each.

74. The SC discussed the individual summaries in more detail under the relevant agenda items.

75. The SC noted the great value of all of the summaries and thanked the Secretariat for their ongoing work.

3.1.4 Overview of SIOFA fisheries 2025

76. The SIOFA Science Officer presented a draft Overview of SIOFA Fisheries (SC-10-14), which summarised recent years' fishing activities, main species catch and other aspects of scientific interest. The first version was published in 2022. Updated versions were also published in 2023 and 2024. This new version included figures with data updated to 2023.

77. The SC further updated and finalised the Overview of SIOFA Fisheries 2025 (SC-10-14-Rev1).

78. The SC recommended that the MoP endorse the Overview of SIOFA Fisheries 2025 (SC-10-14-Rev1) and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

79. The SC agreed to continue to review and update the Overview of SIOFA Fisheries annually.

3.1.5 CCP fishery characterisations

80. Information on CCP fishery characterisations can be found in the National Reports presented in Agenda Item 3.1.1 above.

3.2 Ecosystem and Fisheries Summaries 2025

81. The Science Officer presented the SIOFA Ecosystem Summary 2025 (SC-10-15), which described the main known effects of SIOFA fisheries on ecosystems and species in the SIOFA Area. The Summary was first published in 2023. An updated version was published in 2024. This new version included figures with data updated to 2023.

82. When reviewing the information on bottom fisheries interaction with VME indicator taxa, France (OT) pointed out the need for the SC to discuss the harmonisation of the collection and reporting of such data by CCPs. The Science Officer pointed out that the Secretariat has included a Figure D.2 in the Summary and previously prepared a paper titled "Available VME indicator taxa accidental captures from the SIOFA database and its usability for setting VME encounter thresholds" (SC-08-26-Rev1) that would facilitate such discussions.

83. The SC further updated and finalised the Ecosystem Summary 2025 (SC-10-15-Rev1).

84. The SC recommended that the MoP endorse the SIOFA Ecosystem Summary 2025 (SC-10-15-Rev1) and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

85. The SC agreed to continue to review and update the Ecosystem Summary annually, noting that this may be updated less frequently once an Endangered, Threatened and Protected (ETP) species report is generated.

86. The SC thanked the Secretariat and the Science Officer in particular for producing the Overview of SIOFA Fisheries and the SIOFA Ecosystem Summary, and for working quickly and diligently to update them during the meeting in response to the SC's feedback.

87. The SC held initial reviews of the SIOFA Fisheries Summaries for individual species under this agenda item. The SC continued these reviews as part of the species-specific discussions under agenda item 7.

Agenda item 4. Data Standards, Access and Dissemination

88. The Data Officer, Mr Pierre Peries, presented SC-10-INFO-04, which summarised the exchanges of scientific data with other organisations to complement the data collected in SIOFA. In 2024, SIOFA exchanged data with the Indian Ocean Tuna Commission (IOTC) and with the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). IOTC provided bycatch data for preparing an updated paper about IOTC bycatch in the SIOFA Area (SC-10-32-Rev1), which was presented under agenda item 8.3. CCAMLR helped identify historical operations in SIOFA, from which three datasets could be retrieved and added to SIOFA databases. SIOFA and CCAMLR also shared toothfish tagging data.

4.1 Annual catch and effort data submission

89. The Data Officer presented SC-10-INFO-03-Rev1, which summarised CCPs' data submitted under the requirements of CMM 02(2023). In 2024, eight CCPs provided data to the Secretariat for fishing activities performed in 2023. Most datasets followed requirements, with 100% of operations recorded in observer data submissions successfully linked to the Catch & Effort operations. The quality, accuracy, and completeness of data varied depending on fisheries and CCPs. Most data were accurate and provided in a timely manner. When issues were identified,

they were usually corrected. Some issues that were not obvious to correct needed to be reported to the data provider for revision. This process was long and not completed in the case of one CCP. For the pelagic fishery, particularly oilfish pelagic longline, there are issues providing full operational details and accurate species identification.

90. The SC noted that the Secretariat achieved 100% linkage between operations recorded in the observer data submission that are linkable to the operations reported in the Catch & Effort submission for 2023 data.

91. The SC noted that the Secretariat has calculated observer coverage by fishery for 2023 as shown in Table 1 below.

Table 1: Summary of data submitted in 2023 by CCP and gear (revised from SC-10-INFO-03-Rev1)

CCP	Fishery	Number of effort events in Catch & Effort database	Number of observed effort events in Observer database	Observer events linked to Catch & Effort events (%)[3]	Observer coverage of Catch & Effort events (%)
AUS	Demersal Longline	5	5	100.0	100.0
CHN	Jigging (research)[1]	7	7	100.0	100.0
CHN	Trawl (research)[1]	13	13	100.0	100.0
CHN	Jigging[2]	2	2	100.0	100.0
CKI	Trawl	1 299	1 179	100.0	90.7
EU	Demersal Longline	310	310	100.0	89.7
FR-OT	Demersal Longline	5	5	100.0	100.0
JPN	Trawl	343	343	100.0	100.0
MUS	Mechanised Line/handline[2]	270	0	–	0.0
SYC	Pelagic Longline[2]	91	0	–	0.0
CT	Pelagic Longline[2]	5 731	375	100.0	6.5
THA	Trawl	476	476	100.0	100.0
	Handline[2]	80	80	100.0	100.0

[1] This is a research cruise and does not require observer coverage.
[2] There are no observer coverage requirements on the non-bottom fishing vessels.
[3] The linkage percentage measures the percentage of the observed fishing events recorded in the Observer data submission that are linkable to effort events reported in the Catch & Effort data submission.

92. The SC inquired about the linkage in past and historical operations. The Data Officer explained that some linkages are not possible for past activities when operations recorded in the Observer database have no equivalent in the catch and effort data, which happens when catch and effort operations are provided in aggregates (e.g. daily aggregates) and the observer data are provided at a finer scale (e.g. tow by tow).

93. The SC thanked the Secretariat, and the Data Officer in particular, for preparing and managing the data, and for working to enhance the linkage between the Observer and Catch & Effort databases.

4.2 Lost gear reported under CMM 02(2023) Annex A

94. The Data Officer presented SC-10-INFO-05, which summarised all lost gears as reported for 2023 fishing activities under CMM 02(2023) (Data Standards). In 2023, the demersal longline fishery was the only fishery that reported loss of gears in the SIOFA Area. Only hooks were lost and the number of losses reported in 2023 was within the same range as previous years' losses.

95. The SC thanked the Data Officer for the report and requested that the Secretariat include observer records in future versions of the report.

4.3 Exchange of scientific toothfish data with CCAMLR

96. The Science Officer introduced SC-10-22, which summarised the exchange of scientific toothfish data with CCAMLR and their analysis. A total of 33 tagged individuals were recaptured in the SIOFA Area, including both individuals released in the CCAMLR Area and those released in the SIOFA Area. An additional 4 individuals were tagged in the SIOFA Area and recaptured in the CCAMLR Area, for a total of 37 tag matches.

97. The SC noted that the data exchange with CCAMLR is working as planned.

98. The SC requested the Secretariat to investigate and retrieve the additional historical data currently missing from the SIOFA database from Uruguay, Japan, and Spain.

99. The SC thanked the CCAMLR Secretariat for its continued cooperation with SIOFA.

100. The SC noted that information about the exchange of scientific toothfish data with CCAMLR is presented in the Overview of SIOFA Fisheries and the SIOFA Fisheries Summary: Toothfish, that the SC can consider this information when reviewing those documents, and that it is therefore no longer necessary for the Secretariat to prepare a standalone paper with this information.

4.4 Developments to the data section of the SIOFA website

101. The Data Officer reported that the Secretariat is continuing to develop the data section of the SIOFA website and invited the SC to share any additional requests or feedback it may have.

4.5 The SIOFA standard operating procedure for data use and data requests

102. The Data Officer presented SC-10-29, which summarised the data and security audit recommendations endorsed by the MoP and provided an update on the implementation status of each recommendation. In 2025 most of the recommendations have been considered and implemented. However, a few recommendations are still in progress or partially implemented and a few of them require actions by the MoP and its subsidiary bodies. The SC has provided further advice at SC9, and the MoP at MoP11. In particular, recommendations related to amendments to CMM 03(2016) (Data Confidentiality) or those that require funding still require greater work. Regarding structured data, it is expected that the revision of CMM 03(2016) will simplify the definition of public data and allow more consistent access to these data. The SC can provide further advice on this task to be implemented by France (OT). Regarding unstructured data, the SIOFA website will continue to be the main access point and to facilitate the storing and retrieving of documents.

103. The SC and Secretariat welcomed the offer from France (OT) to support the Secretariat in implementing Recommendation D6 (SC-10-29) by sharing its comprehensive data consistency checklist.

104. The SC noted the implementation status of the data and security audit

recommendations and thanked the Secretariat for the update. The SC requested that the Secretariat continue to provide similar reports at future meetings of the SC.

105. The Data Officer presented SC-10-30, which provided an overview and a snapshot of the databases and their structures and described how data submitted by CCPs under CMM 02(2023) (Data Standards) are processed. The databases evolve continuously and have been developed and maintained at the SIOFA Secretariat. The datasets submitted by CCPs are recorded, checked and then collated into the SIOFA databases.

106. The SC thanked the Secretariat for preparing the paper and providing clear explanation of the structure of the SIOFA databases.

107. The SC requested that the Secretariat make this document available under the Data section of the SIOFA website and provide a copy of this document to any data requesters to enable them to understand the structure of the SIOFA databases.

108. The SC requested that the Secretariat provide updates on this paper as appropriate when there are noteworthy changes in the database structure or fields.

109. The Data Officer presented SC-10-31, which provided the results of the Secretariat's review of the data and documents release process and suggestions for improvement, as requested by SC9. Based on its review, the Secretariat proposed a number of options for improvement related to improving request processing time, allowing more flexibility regarding confidential data or restricted papers, developing a better template for information requests, and allowing advance release requests for projects, work and studies that have been adopted by the MoP. Some of these options would be easy to implement, while others would first require agreement by CCPs and the MoP to the proposed changes.

110. The SC thanked the Secretariat for conducting the review and making suggestions for improvement.

111. The SC noted that data request response times could be improved by having a unique and well identified person responsible for replying to such requests, with one alternate. The SC agreed that this person should be each CCP's Head of Delegation to the SIOFA SC, backed up by one alternate.

112. The SC noted the need to distinguish between requests for data and requests for access to documents, and tasked the Secretariat to develop separate forms for the two different types of requests.

113. The SC requested the Secretariat to distinguish between different types of requests in future summary reports of data and document release requests, including what is being requested (data or document access), who is making the request (CCP, SIOFA consultant, public/external party, etc.), the intended purpose of the access (SIOFA scientific project, non-SIOFA scientific project, scientific paper that will be published, etc.), and the time taken to respond to the request. The SC agreed to hold further discussions on improving data request response times based on a review of such information at SC11.

114. The SC noted the value of enhancing access to scientific documents that do not contain confidential information, noting that this would contribute to the knowledge of the scientific community. The SC noted that one option would be to include a cover page on the template for SC meeting documents in which the author of a restricted paper could specify a period after which the paper's restricted status would expire. The SC noted that another option would be for the SC to be able to determine, during its meetings, whether a paper submitted to the meeting as a restricted document could be made public following the end of the meeting.

115. The Data Officer reminded the SC that the current definition of confidential data by CMM 03(2016) (Data Confidentiality) would not allow a paper to be made public if, for example, the annual catch of a species by one CCP operating one vessel is displayed in that paper.

4.6 Proposals for revisions to CMM 02(2023) (Data Standards)

116. China presented SC-10-53, a proposal to amend CMM 02(2023) (Data Standards) to cover squid jigging vessel logbooks and observer logbooks, which was requested by SC9. The proposed amendments mainly consist of adding specific data requirements for squid jigging and relevant data format tables.

117. The SC reviewed and endorsed the proposal.

118. The SC recommended that the MoP adopt the proposed amendments to CMM 02(2023) (Data Standards) to cover squid jigging vessel logbooks and observer logbooks shown in **Annex D.3**.

119. The SC noted that if SIOFA adopts a CMM for research cruises, it may become necessary to amend CMM 02(2023) (Data Standards) to clearly identify data derived from research cruises.

120. Comoros presented SC-10-52, which provided a proposed logbook format for lobster fisheries.

121. The SC reviewed the proposed logbook format for the lobster fisheries.

122. The SC recommended that the MoP adopt the proposed amendments to CMM 02(2023) (Data Standards) for trap and pot fisheries as shown in **Annex D.3**.

123. The SC requested that Comoros ensure that its logbooks reflect these changes.

124. The SC also discussed other proposed amendments to CMM 02(2023) (Data Standards) as part of its discussions on scientific observer forms under agenda item 12. These proposed amendments to CMM 02(2023) are also shown in **Annex D.3**.

Agenda item 5. SIOFA Bottom Fishing Impact Assessment

125. The SC Chairperson introduced SC-10-45, the Report of the 2nd Extraordinary Meeting of the SC (SC-EXTRA2), which was held in order for the SC to assess the Comoros BFIA and provide recommendations and advice to the MoP.

126. The SC Chairperson informed the SC that the MoP considered the advice from the SC, accepted the Comoros BFIA, and requested the SC to review the Comoros lobster trap fishery and provide further scientific advice as appropriate.

127. Comoros provided an update on its lobster fishing activities since the MoP's decision. The F.V. *Rinascente 9* has conducted one fishing trip, entering the SIOFA Area on 5 January 2025 and remaining there until the end of February. Fishing operations were hindered by stronger currents than usual and higher water temperatures than in recent years, and the vessel only caught 895 kg of lobsters. The logbook information from the trip has been submitted to the Comoros authorities and Comoros will report the details to the SIOFA Secretariat by the annual data submission deadline.

128. The SC noted the updated information from Comoros. The SC noted that the fishing trip was only completed recently and that there had therefore not been enough time for Comoros to prepare and submit the logbook data to SIOFA in advance of the SC meeting. The SC agreed to review the data and the fishery after the data become available.

5.1 Review of the SIOFA Bottom Fishing Impact Assessment Standard

129. The SC reviewed the SIOFA BFIA Standard and did not recommend any changes.

130. The DSCC drew the SC's attention to the DSCC information paper SC10-INFO-22 that

touches on the BFIA Standard. While noting the progress made by SIOFA to date, the information paper reviewed the BFIA Standard and recommended that the BFIA Standard include climate change factors and that the Standard be reviewed and updated every five years.

5.2 Review of new BFIAs

131. Japan presented SC-10-80, which provided a revised BFIA for the Japanese bottom trawl fishery in the SIOFA Area conducted in accordance with paragraph 14 of CMM 01(2017) and the SIOFA BFIAs Standard (Annex I, SC2 Report) based on the best available information. In the SIOFA Area, three exploratory research fishing cruises were conducted by Japanese bottom trawl vessels in 1977, 1978, and 2012. Additionally, in 2024, *Tomi-maru No. 58* conducted a bottom trawl fishing operation targeting orange roughy.

132. The SC requested that Japan add information from the 2024 bottom trawl activities, including a map of the locations of the 2024 bottom trawl fishing operations overlaid on the SIOFA bottom fishing footprint, as well as some editorial amendments.

133. Japan made the requested changes and presented an updated version of its revised BFIA (SC-10-80-Rev1).

134. The SC reviewed the revised BFIA from Japan and noted that it meets the BFIA Standard. The SC tasked the Secretariat to publish Japan's revised BFIA on the SIOFA website.

135. Comoros presented SC-10-50, which provided the results of a BFIA conducted for fishing activity targeting hapuka that is planned to be conducted SIOFA Subareas 2, 3a, 3b and 4 using droplines. Comoros explained that it had originally believed that this would constitute a new or exploratory fishery. However, upon closer review, the Comoros believed that this is an established fishery as it is listed as such in Annex 1 of CMM 01(2017) (New and Exploratory Fisheries), it will be conducted within the SIOFA bottom fishing footprint, it will be conducted using an established fishing method, and the last activity in the hapuka fishery was conducted less than 10 years ago.

136. The Cook Islands disagreed with the classification of the proposed hapuka fishery as an established fishery. The Cook Islands stated that in accordance with CMM 17(2024) (New and Exploratory Fisheries), in order for a fishery to be considered an established fishery, it must meet a specific combination of species, fishing gear, CCP, and area. Therefore, the proposed fishery constitutes a new or exploratory fishery.

137. The SC recommended that the MoP note that the SC did not consider that this was an established fishery and requested that the MoP provide further guidance.

138. The SC reviewed the BFIA and requested the inclusion of further details, including in relation to gear specifications, measures to prevent operations in the interim BPAs, depredation mitigation measures, and seabird bycatch mitigation measures. Several CCPs also suggested that the proposed catch limit contained in the BFIA was too high.

139. Comoros presented a revised version of its BFIA (SC-10-50-Rev1) addressing the points raised by CCPs.

140. The SC noted the revised version of the BFIA for Hapuka Fishery provided by Comoros and noted that it meets the BFIA Standard. The SC tasked the Secretariat to publish the Comoros Hapuka Fishery BFIA on the SIOFA website.

141. The SC noted that a Fisheries Operation Plan for Hapuka Fishery has been provided by Comoros and this would be discussed under Agenda Item 11.

142. Mauritius presented SC-10-61, which provided a BFIA for a Mauritian trawler in the SIOFA Area. The Mauritian vessel, *Klondyke 139*, is listed in the SIOFA RAV and has

been operating as a mid-water trawler in the SIOFA Area since May 2024. The overall length of the vessel is 54.55 m. The vessel operated in Subareas 2, 3a and 3b and undertook two midwater trawl trips in 2024. The owner of the vessel has submitted a BFIA report in order to allow the vessel to operate as bottom trawler in the SIOFA Area.

143. Mauritius explained that although it had historical catch information, as listed in Table 1 of SC-10-61, it did not have positional data for those catches and was therefore not able to determine a bottom fishing footprint.

144. The SC reviewed the BFIA from Mauritius. The SC noted that much of the key information that is required in a BFIA was missing. The SC requested Mauritius provide the key information that was missing from several sections, including the distribution of VMEs in the proposed fishing area, risk and impact assessments, detailed descriptions of mitigation measures, and species-specific catch information.

145. The SC noted that the document (SC-10-61) did not meet the BFIA Standard.

146. Mauritius submitted a revision (SC-10-61-Rev1) for the SC's consideration.

147. The SC reviewed the revised BFIA. The SC thanked Mauritius for its substantial efforts to revise its BFIA during the meeting and the commitments it has expressed, including not to trawl in the SIOFA BPAs. Nevertheless, many CCPs stated that the document did not meet the BFIA standard.

148. The CCPs noted the lack of clarity regarding Mauritius historical bottom trawling footprint and planned fishing activities and expressed concern about the broad range of depths and large number of Subareas in which the vessel plans to fish. They pointed out that BFIAs usually have a more refined description of historical and planned fishing, and that SIOFA has done much work to ensure bottom trawling is constrained to historically trawled areas.

149. These CCPs also expressed concern about Mauritius' plans to spread fishing effort as a mitigation measure against impact on VMEs, noting that such a measure would be more likely to damage VMEs than constraining effort to a limited number of predetermined tracks.

150. Mauritius noted that one CCP stated and confirmed that all vessels operating in existing bottom trawl fisheries in the SIOFA Area fished on known trawl tracks, which results in low VME indicator taxa encounter events.

151. Many CCPs also noted that, in accordance with the BFIA Standard, Mauritius needed to provide a quantitative risk assessment. They acknowledged that, due to issues with its database, Mauritius did not have past spatial, temporal, or CPUE data for the Mauritian-flagged vessels that previously operated bottom trawls in the SIOFA Area, but noted that Mauritius should overlay a map of where VME are known or likely to occur over maps of where fishing is planned.

152. Mauritius expressed its intention to constrain the planned fishing activities to the existing SIOFA bottom fishing footprint and to constrain trawls to a limited number of predetermined tracks, rather than spreading the effort out as previously proposed.

153. The SC noted that the revised BFIA did not meet the BFIA Standard and encouraged Mauritius to present a revised BFIA that addresses the concerns to SC11.

154. The SC recommended that the MoP note that the SC had difficulties interpreting the current provisions that define established fisheries and new and exploratory fisheries, in the case of Mauritius' planned bottom trawling activities. The SC noted that the planned activities appeared to meet the species, fishing gear and CCP criteria for being considered an established fishery, but fishing has not taken place in more than

155. The Southern Indian Ocean Deepsea Fishers Association (SIODFA) emphasised that its members developed their bottom fisheries over decades with significant investment in vessel time and money, including commissioning side scan sonar surveys of the seafloor to find likely safe fishing spots and camera surveys to demonstrate that they were not fishing on potential VMEs. Skippers have passed down the knowledge and experience and are able to fish without interacting with benthic fauna by fishing only on a tiny part of the SIOFA footprint. SIODFA expressed concern that Mauritius' proposed BFIA did not demonstrate how the vessel will fish near the bottom without catching VME indicator taxa. SIODFA was also concerned for its continued ability to utilise these areas, noting that a new vessel inadvertently triggering threshold limits could lead to the closure of key fishing areas.

156. The DSCC expressed its concern about any proposal to increase bottom fishing in the SIOFA Area and in particular the impact on VMEs, including seamounts, and any increase in the bottom fishing footprint. The DSCC noted the many commitments to avoid significant adverse impacts on VMEs as set out in its paper SC10-INFO-22. The DSCC also noted that it appeared that Mauritius' proposal should go through a new and exploratory fishery process. The DSCC considered the Mauritius BFIA to be a further reason for the SC to develop a clear checklist for assessing BFIAs against the BFIA standard.

Agenda item 6. SIOFA Precautionary Approach and Management (PAM)

6.1 Development of the Precautionary Approach Framework

157. Ms Kerrie Robertson, a SIOFA Precautionary Approach and Management (SIOFA-PAM) Project consultant, provided an overview of the SIOFA-PAM Project, focusing on Project PAM-2024-01: Development of the SIOFA Precautionary Approach Framework (PAF). Ms Robertson explained that the SIOFA-PAM Project will produce two outputs, a conceptual framework (i.e. the PAF) and technical guidelines. The PAF will operationalise how the precautionary approach would be applied in SIOFA. Project PAM-2024-01 has begun with a literary review of best practices that have been implemented or are being considered at the multilateral and national levels. Ms Robertson invited the SC participants to provide any input they may have, such as other frameworks that should be emulated or avoided.

158. A detailed overview about the SIOFA-PAM Project, including the timeline and consultation opportunities, was submitted to the SC as SC-10-INFO-18.

159. The flow diagram of the potential timeline for the SIOFA-PAM Projects and related meetings and workshops is included in **Annex E**.

6.2 Development of biological reference points

160. Dr Simon Hoyle, one of the SIOFA-PAM consultants, introduced Project PAM-2024-02: Determination of Biological Reference Points (BRPs) for key SIOFA fish stocks. Dr Hoyle explained that the Project aims to develop approaches for defining limit reference points (LRPs) and target reference points (TRPs) that are appropriate for the different SIOFA stocks, considering the amount of information available on the stock, issues such as the spatial distribution of the stock, consistency with other bodies managing the same stock, and other potential management issues.

161. More detailed information on Project PAM-2024-02 is available in WS2025-PAM-01.

6.3 Joint MoP-SC Workshop on the Development of Harvest Strategies (WS2024-HSS) and SC Workshop to progress the SIOFA Precautionary Approach and Management Projects (WS2025-PAM)

162. The SC Chairperson presented SC-10-44, the convener report of the Joint MoP-SC Workshop on the Development of Harvest Strategies (WS2024-HSS).

163. The SC considered the recommendations from WS2024-HSS and the outcomes of the MoP's consideration of these recommendations.

164. The SC noted that the MoP noted the usefulness of paper WSHSPA-2023-01 for tracking SIOFA's progress in developing harvest strategies, that the MoP has tasked the Secretariat to regularly update this information and present it to future meetings and workshops where harvest strategies are to be discussed, and that the Secretariat has submitted such updated information to SC10 (SC-10-28).

165. The SC noted that the MoP endorsed the recommendation that the management strategy evaluation (MSE) initially evaluate alternative sensitivity choices of 50-60-70% probability of being at or above a TRP of 30-40-50% B_0 for orange roughy.

166. The SC noted that the MoP adopted the management objectives and performance indicators for orange roughy described in Annex N, MoP11 Report.

167. The SC noted that the MoP endorsed the recommendation that the MSE initially evaluate alternative sensitivity choices of 50-60-70% probability of being at or above a TRP of 40-50-60% B_0 for toothfish.

168. The SC noted that the MoP adopted the management objectives and performance indicators for toothfish described in Annex O, MoP11 Report.

169. The Workshop recommended that the MoP task the SC to provide advice on determining a total allowable catch (TAC) for toothfish and on determining a TAC and/or total allowable effort (TAE) for orange roughy, as well as potential provisions to allow a degree of flexibility, such as allowable unders/overs/carry-overs, or multi-year limits.

170. The SC noted that the MoP has tasked the SC to consider how effort management and effort creep would be included in the MSE for orange roughy.

171. The SC noted that the MoP endorsed the recommendation to develop a framework for deciding allocations based on catch history, among other factors, and to advance this work in parallel with the development of harvest strategies.

172. The SC noted that the MoP noted the updated harvest strategy development timeline (Annex D, WS2024-HSS Conveners report).

173. The SC Chairperson presented SC-10-48, the convener report of the SC Workshop to progress the SIOFA Precautionary Approach and Management Projects (WS2025-PAM).

174. The SC considered the recommendations from WS2025-PAM.

175. The SC noted that, as many of SIOFA's stocks have low levels of information or data, the project should focus on development of BRPs under PAM-2024-02 that would be suitable for low information stocks rather than those that may be applied in high information stock assessments.

176. The SC noted that the Sustainability Assessment for Fishing Effects (SAFE) methodology may be a potential assessment methodology that could be considered under PAM-2024-02 but also noted that this required adequate spatial distribution information, and that this may not be the case for many SIOFA fisheries. For species with inadequate spatial data, other low information methods such as determining estimates of F relative to F_{lim} or F_{crash} could be utilised.

177. The SC noted that often the TRPs like the higher biomass levels are the ones that are often either hardest to achieve or are, in some examples from other jurisdictions, not defined. They noted that the definition of the LRP was critical to ensure the stock remained sustainable, while also achieving the long-term objective (i.e., the TRP) of ensuring the maximum yield.

178. The SC noted that it would be useful to hold additional workshops to allow consultation with CCPs, the fishing industry, and observers, before finalising the report for Project PAM-2024-01.

179. The SC recommended that additional PAM workshops be held, including joint workshops with the MoP along with technical ad-hoc meetings with experts from the SC and MoP, to ensure that the work was appropriately developed and fully considered by the SC and MoP.

180. The SC recommended that the development of BRPs and harvest control rules (HCRs) should be evaluated with consideration to their robustness to the effect of climate change on stock productivity and distribution. Further, the SC recommended that the precautionary approach framework should include consideration of the value of monitoring of, for example, age and length distributions, spatial distribution, etc, for evidence of changes in productivity or spatial distribution that would indicate if climate change effects would impact the scientific advice for managers.

181. The SC recommended that exceptional circumstance rules be developed for the HCRs include guidelines for management if such climate change effects on spatial distribution or productivity that would affect the management advice were detected.

182. The SC noted that the development of models to predict changes in productivity and distribution that may happen as a consequence of climate change was a very challenging task, and would not be possible within the current project.

183. The SC noted that assumptions of the spatial distribution of stocks (for example for orange roughy and alfonsino) should be considered in the HCR evaluation. Further, the SC noted that some SIOFA stocks may cross the boundaries of the SIOFA Area, and that management strategies would need to be robust to cases where stocks partially reside in areas outside SIOFA.

184. The SC noted the need to consider development of future projects to address uncertainties in the stock structure of key SIOFA stocks including consideration of cost-effective methods for collecting additional data (for example genetic sampling and age information).

6.4 Development of harvest strategies for Orange Roughy and Toothfish

185. Dr Sophie Mormede, one of the SIOFA-PAM consultants, introduced Project PAM-2024-03: Development of Harvest Strategies for key SIOFA fish stocks. This Project will build on the work done under PAM-2024-01 and PAM-2024-02 and will develop and test harvest strategies for the key SIOFA fish stocks. The Project will develop operating models that represent different species and different levels of data quality about those species, project different harvest strategies into the future under different conditions, evaluate how the different rules perform under these conditions, and evaluate the different harvest strategies.

186. More detailed information on Project PAM-2024-03 is available in WS2025-PAM-02.

187. The SC thanked the consultants for their ongoing work on the SIOFA-PAM Project and the EU for funding this Project.

188. The SC and the SIOFA-PAM consultants agreed on the importance of close and regular communication among all stakeholders, including among the different groups of

consultants, the SC, and the MoP. The SC agreed to review the timeline in SC-10-INFO-18, identify any critical bottlenecks, incorporate the timeline into the SC work plan, and include any additional opportunities for consultation that may be required, for example to provide input following the preliminary completion of Project PAM-2024-03.

189. The SC noted that it would be useful for the SIOFA-PAM consultants to consider potential flexibility in the setting of the TAC for the orange roughy fishery, including overs/unders/carryovers/multi-year limits and transferability between CCPs. Such measures would enable flexibility in the management of TACs from an operational standpoint, which would be particularly valuable in the case of the orange roughy fishery as it is highly susceptible to the impacts of adverse weather conditions. The SC suggested that unders of up to 100% of TAC and/or overs of up to 10% of TAC in a particular year could be reflected in the following year's TAC.

190. The SC noted that the South Pacific Regional Fisheries Management Organisation (SPRFMO) has conducted an analysis in which it evaluated the orange roughy population and wider ecosystem impacts of carrying forward TACs over up to four years every fourth year (SPRFMO-SC11-DW06). The SC noted that analysis suggested a slight increase in effort if TACs were carried forward for the full four years, but the SC noted that the effects would likely be negligible if TACs were carried forward for only two years.

191. The DSCC stated that it was not supportive of overrun or underrun provisions. The DSCC also noted that the SPRFMO analysis looked at catching 2-4 times the catch limit in one year on orange roughy populations and that while it considered the impacts on VME indicator species, it did not consider other bycatch species. The DSCC expressed concern at the impact on VME indicator taxa from an under-catch provision allowing 2 times the catch limit to be taken in one year.

192. Australia pointed out that the SIOFA orange roughy fishery is a targeted short-tow fishery, as opposed to some of the much longer tows in SPRFMO fisheries in which potential impacts on VMEs were seen, and stated it believed that carrying forward the TACs for the SIOFA fishery would be unlikely to impact VMEs or other bycatch species and reiterated the point that the SPRFMO analysis estimated that the effects would likely be negligible if TACs were carried forward for one year.

193. The SC noted that CCAMLR is undertaking an MSE process for the research block fisheries for toothfish, which has a similar set of objectives to the SIOFA-PAM Project.

194. The SC reviewed the harvest strategies and timeline for the implementation of preassessments, assessments, management objectives and implementation (Annex K, SC9 Report) and updated it to reflect SIOFA's progress since SC9 (**Annex F**).

6.5 Harmonisation of toothfish management measures across the SIOFA Area

195. The SC noted that the MoP has requested advice on an appropriate toothfish catch limit for the proposed Southern Indian Ridge management area and the SC discussed a recommended catch limit for this area in 2026 based on the SIOFA trend analysis under agenda item 7.3.3.

196. The SC noted that the MoP has requested advice on harmonisation of toothfish management measures across the SIOFA Area.

197. The SC noted that the management measures across the toothfish management units in the SIOFA are mostly the same, with the key differences being the spatial allocation of effort and the catch limits.

198. The SC noted that the toothfish in Del Cano Rise, Williams Ridge, and South Indian

Ridge belong collectively to other stocks, some of which are in exclusive economic zones (EEZs) and some of which are in areas managed by other bodies. The SC noted the need to take into consideration the management measures taken in these other areas.

199. The SC noted that the SIOFA-PAM Project would provide important inputs for guiding further discussions on the harmonisation of toothfish management measures across the SIOFA Area.

Agenda item 7. Stock assessments and advice

7.1 Orange roughy
7.1.1 Descriptive characterisation
7.1.2 Stock monitoring and data collection (including acoustics)

200. The Science Officer introduced SC-10-40, the final report on Project ORY-2023-01: Age and growth of orange roughy. The draft report was reviewed at SC9 and was subsequently finalised. The Project distinguished between two areas: Southwest Indian Ridge and Walter's Shoal. 604 otoliths were prepared and read by one reader following the accepted ageing protocol to provide otolith age as well as growth, maturity and otolith mass estimates of orange roughy from the Indian Ocean. These estimates were used in the 2024–2025 orange roughy stock assessment (SIOFA ORY-2024-01).

201. The SC noted that, to improve the quality of age data in future work, it is recommended to develop an area-specific reference set of orange roughy otoliths for the SIOFA Area. The SC noted that the Cook Islands would investigate whether it could conduct this work and inform the SC on its progress in the future. The SC noted that this work was not an urgent priority and would only need to be conducted in advance of the next stock assessment, which would likely take place in 3–5 years.

202. The SC noted the need to centralise and collate the storage of the orange roughy otoliths that were collected for this study, and welcomed the offer from the Cook Islands to do so.

203. The SC noted that Figures 8 and 17 in SC-10-40 appeared to indicate a sex-specific relationship between orange roughy otolith mass and age. The SC noted that the collection of otolith weights, supplemented with aging work, could enable the SC to obtain more age data at a lower cost. The SC noted that the Cook Islands would investigate whether it could conduct this work and inform the SC on its progress in the future, while also noting that if this work is indeed feasible for the Cook Islands, it would first conduct it for alfonsino, before moving onto orange roughy. The SC noted the importance of developing a protocol for weighing otoliths that includes cleaning and drying them.

204. The SC thanked Dr Thomas Barnes and Mr Caoimhghin Ó Maolagáin of the National Institute of Water and Atmospheric Research (NIWA) for conducting this work.

205. The Science Officer introduced SC-10-41, the final report on Project ORY-2023-02: Estimates of orange roughy biomass from acoustic surveys. Estimates of orange roughy biomass were derived from 15 acoustic surveys conducted on two features (Wrongford's and Sleeping Beauty) in SIOFA Subarea 2 in June and July of 2022 and 2023. Three surveys on Wrongford's in 2022 produced estimates of 1500–4300 t (CV: 22–96%), eight surveys on Sleeping Beauty in 2022 produced estimates of 300–10 300 t (CV: 26–93%) and three in 2023 produced estimates of 4600–6000 t (CV: 18–22%). One survey had no observable orange roughy marks. These data add to the existing

time-series of orange roughy biomass estimates that now cover years 2004–2023, and were used in the 2024–2025 orange roughy stock assessment (SIOFA ORY-2024-01).

206. The SC thanked Dr Gavin Macaulay of Aqualyd for conducting this work.

207. The SC noted that the collection of acoustic data and otoliths for aging is continuing for orange roughy.

208. The SC agreed that the monitoring of orange roughy using acoustics is recommended, but that changes in CPUE, including catch rates and catch patterns, could be used as a qualitative warning signal alongside the acoustic information. The SC agreed to evaluate whether and how to utilise CPUE data for monitoring at SC11 after considering the outcomes of the orange roughy harvest strategy development work under PAM-2024-03.

7.1.3 Stock assessment

209. The consultants, Dr Sophie Mormede (soFish) and Dr Simon Hoyle (Hoyle consulting), presented SC-10-42, the final report of Project ORY-2024-01: Orange roughy stock assessment (2024–2025). The consultants conducted a stock assessment of orange roughy (*Hoplostethus atlanticus*) within the SIOFA Area, focusing on the Walter Shoal Ridge (WSR), the Long Walter's Shoal Ridge (LWSR) and the South-West Indian Ocean Ridge (SWIOR). The assessment integrated updated fisheries data, biological parameters, and acoustic biomass estimates to evaluate stock status. A range of Bayesian age- and sex-based models were developed for orange roughy on LWSR and for SWIOR separately and were applied to estimate population dynamics, incorporating new age-frequency distributions and standardised CPUE data.

210. For SWIOR, the consultants reported that, consistent with the previous assessment, the model is lacking in information and results are therefore highly uncertain (SIOFA Secretariat 2024).[1] In particular, only two of the features have been surveyed for two years and present opposing trends, and length frequency distributions seem to indicate that the size of orange roughy caught on those hills is much larger than elsewhere in the SIOFA Region, and larger than the expected maturity curve. Furthermore, historical catches have been much higher than recent catches, indicating a potentially large initial stock size.

211. Regarding LWSR, the consultants explained that this stock is an extended version of the WSR stock, which is assessed elsewhere (SC-10-42). They reported that similar results and conclusions apply, specifically that the data contained no information on the potential value of natural mortality (M) and very little information on the potential value of total acoustic catchability (Sum(q)), resulting in models that were driven by the priors assigned to M and to Sum(q). Declining acoustic estimates on Sleeping Beauty indicate that a lower initial biomass and higher acoustic survey catchability are likely. Projections indicate that under certain assumptions the interim targets for biomass and fishing pressure may have been exceeded.

212. Regarding WSR, the consultants reported that better informed models could be achieved through better informed M and Sum(q). Getting a better handle on natural mortality is likely to be difficult. In the interim, the commonly assumed value of 0.045 y^{-1} could be used as a baseline for the normal prior. The value of the sum of acoustic catchabilities is uncertain for numerous reasons, including because the time-series are still short, only some hills have been acoustically surveyed in any one year, and

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[1] SIOFA Secretariat. Fisheries Summary: orange roughy (*Hoplostethus atlanticus*) 2024. Southern Indian Ocean Fisheries Agreement (SIOFA); 2024.

fish may move between hills and years. Continuation of acoustic surveys of hills that already have a long time-series should be a priority. Additionally, surveying multiple hills in any one year, although technically difficult to achieve, would be helpful for informing this parameter.

213. As for extended stocks, the consultants noted that many hills have only been surveyed once and should be surveyed again at the earliest convenience. Furthermore, several hills have showed a large decline in acoustic biomass: Da Vinci, Angelo's, Porky's and M.M. In the absence of robust stock assessments, acoustically monitoring these hills should be given priority, to establish whether there has been localised depletion or if the acoustic estimates for those hills are highly variable. In the meantime, catches on those hills could be reduced.

214. The SC noted that the 2025 stock assessment presented in SC-10-42 was a substantial improvement on the previous attempts to assess this stock and thanked the authors for their thorough work.

215. The SC noted that three potential stocks were evaluated (Walters Shoal Ridge, Long Walters Shoal Ridge and the South-West Indian Ocean Ridge).

216. The SC noted that the assessment results for Walters Shoal showed that biomass in 2023 (the terminal year of the assessment) was estimated at 59.3% B_0 (52.4-66.1) and there was 100% probability that $B_{2023} > B_{40\%}$. While the exploitation rates in the past have exceeded $F_{40\%}$, they have declined and current (2023) exploitation rates are below $F_{40\%}$ (Figure 1).
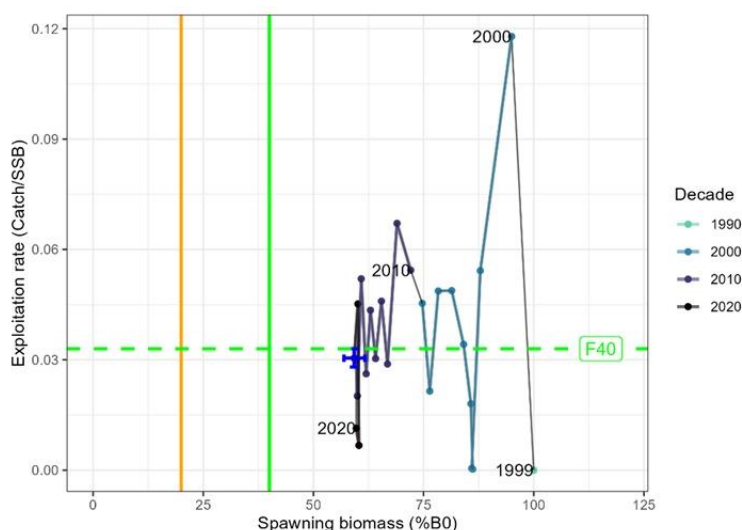
Figure 1: Kobe plot for the Walters Shoal Ridge stock trajectory showing exploitation rate (catch/SSB) and spawning biomass (% B_0). The red vertical line at 10% B_0 represents the hard limit, the orange line at 20% B_0 is the soft limit, and green lines are the % B_0 target (40% B_0) and the corresponding exploitation rate (catch divided by SSB_{F40} = 0.176 under average recruitment assumptions). Biomass and exploitation rate estimates are medians from posterior distributions for the base model. The blue cross represents the limits of the 95% credible intervals of the estimated ratio of the SSB to B_0 and exploitation rate in 2023.

217. The SC noted that the assessment results for Long Walters Shoal showed that biomass in 2023 was estimated at 58.8% B_0 (53.2-64.5) and there was 100% probability that $B_{2023} > B_{40\%}$. While the exploitation rates in the past have exceeded $F_{40\%}$, current (2023) and most recent (2010-2023) exploitation rates are below $F_{40\%}$ (Figure 2).
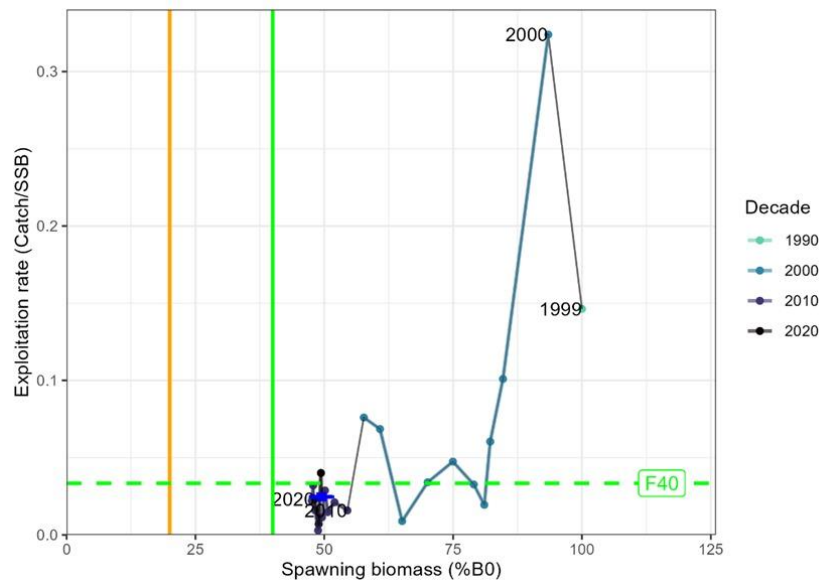
Figure 2: Kobe plot for the Long Walters Shoal Ridge stock trajectory showing exploitation rate (catch/SSB) and spawning biomass (% B_0). The red vertical line at 10% B_0 represents the hard limit, the orange line at 20% B_0 is the soft limit, and green lines are the % B_0 target (40% B_0) and the corresponding exploitation rate (catch divided by SSB_{F40} = 0.176 under average recruitment assumptions). Biomass and exploitation rate estimates are medians from posterior distributions for the base model. The blue cross represents the limits of the 95% credible intervals of the estimated ratio of the SSB to B_0 and exploitation rate in 2023.

218. The SC noted that the assessment results for South-West Indian Ocean Ridge, showed that biomass in 2023 was estimated at 80.3% B_0 (56.7 - 95.7) and there was 100% probability that $B_{2023} > B_{40\%}$. The exploitation rates have never exceeded $F_{40\%}$ (Figure 3).
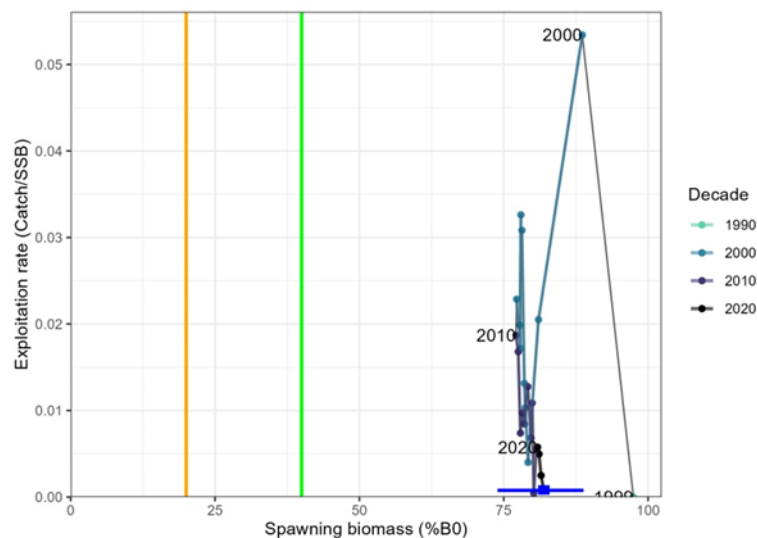
Figure 3: Kobe plot for the South-West Indian Ocean Ridge stock trajectory showing exploitation rate (catch/SSB) and spawning biomass (% B_0). The red vertical line at 10% B_0 represents the hard limit, the orange line at 20% B_0 is the soft limit, and green lines are the % B_0 target (40% B_0) and the corresponding exploitation rate (catch divided by SSB_{F40} = 0.176 under average recruitment assumptions). Biomass and exploitation rate estimates are medians from posterior distributions for the base model. The blue cross represents the limits of the 95% credible intervals of the estimated ratio of the SSB to B_0 and exploitation rate in 2023.

219. The SC noted that the assessment produced biomass projections from 2023 to 2043

(Figure 4). The projections use a range of catch scenarios, but SC used the average catch from 2015 to 2020 (the level agreed by MoP for MSE testing) to describe the estimated future stock status.

220. The SC noted that for Walters Shoal Ridge, all base case runs with catch maintained at the 2015-2020 average indicated that biomass is estimated to remain above $40\%B_0$ throughout the projection period. For the projected exploitation rate, for half of the model runs, exploitation rates remained below $F_{40\%}$ through to 2028, but only 25% of model runs remained below $F_{40\%}$ through to 2040.

221. The SC noted that for Long Walters Shoal Ridge, all base case runs indicated that biomass is estimated to remain above $40\%B_0$ throughout the projection period. For the projected exploitation rate, all model runs in the base case with catch maintained at the 2015-2020 average, exploitation rates remained below $F_{40\%}$ through to 2028, but only 25% of model runs remained above $F_{40\%}$ through to 2040.

222. The SC noted that for South-West Indian Ocean Ridge, all model runs and future constant-catch scenarios satisfied the interim target (50% probability of being above $40\%\ B_0$). The interim target fishing pressure ($F_{40\%}$) was never exceeded.
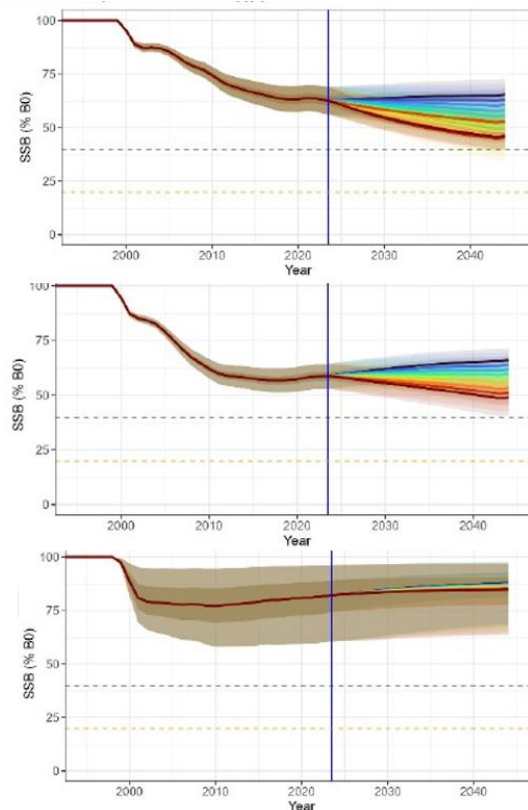
Figure 4: The projections of spawning stock biomass for each assessment area Walters Shoal Ridge (top), Long Walters Shoal Ridge (middle) and South-West Indian Ocean Ridge (bottom). The blue vertical line represents the start of the projection period (2023).

223. The SC recommended that the MoP note that:
   a. for all stock structure assumptions tested, the current stock status is well above the target $40\%B_0$ level, and the exploitation rates are currently below $F_{40\%}$.
   b. the biomass is not predicted to drop below $40\%B_0$ under projection of

continuing current catch.

c. for some potential scenarios, however, the exploitation rates could increase in future for some stocks.

224. The SC recommended that the MoP continue the current approach of maintaining catch at 2015-2020 levels. Should the MoP wish to establish a catch limit for orange roughy, the SC recommended a catch limit consistent with the average catch from 2015-2020 which equates to 1010.75 t for the SIOFA Area (which includes catch outside the assessment areas). The SC recommended that the MoP note that currently there is no proposal to split any catch limit between or within areas.

225. The SC requested that the vessels fishing for orange roughy continue to undertake biological sampling and conduct acoustic surveys. The SC also requested that the following areas be prioritised for acoustics: Sleeping Beauty and Boulders as these have the longest time series making them the most valuable source of acoustic information; and Da Vinci, Angelo's, Porky's and M.M., which only have two survey data points.

226. The SC noted that, in order to improve efficiency of projects, some data within the SIOFA databases could be cleaned up. The SC noted that the consultants had cleaned up the datasets that they used in the stock assessment and that they would provide the data cleaning code, the cleaned up datasets, and the issues identified to the Secretariat. The SC tasked the Secretariat to clean up the issues identified by the consultants. The SC held more detailed discussions about improvements to the SIOFA databases under agenda item 4.

227. The DSCC supported precautionary action being taken to protect hill areas (e.g., at Porkies) where large declines in acoustic biomass were noted in the stock assessment report. This raises concerns of localised depletion and impacts on roughy populations going forward. The DSCC noted with concern the experience in New Zealand roughy fisheries, where there has been the loss of spawning aggregations in both hill, seamounts and flat areas.

228. SIODFA explained that acoustic coverage of these hills has decreased due to the area of the fishery changing over time. SIODFA explained that fishing usually takes place in the middle of the spawning period, whereas hills such as Da Vinci and Angelo's are typically among the first ones where spawning occurs. This also means that fishing effort on these hills has been reduced already.

229. One CCP also noted that these acoustic data are characterised by high variability between surveys and that the SC should not make inferences from hills with only two data points. This CCP also noted that in instances where there are only two data points, the SC should prioritise getting more survey data.

230. The SC noted that there were large catches recorded in 2000 and 2001, early in the assessment period, and that there are uncertainties around these catch records. The SC agreed that as future work, it would be useful to conduct sensitivity analyses to assess the potential influence of these data on the biomass estimates.

231. The DSCC noted that New Zealand orange roughy assessments have included over-runs which have been estimated at up to 30% of catch early on in the fishery to 5% in more recent years.

232. The SC thanked Dr Sophie Mormede and Dr Simon Hoyle for conducting this work.

233. The SC noted the relevance of the orange roughy stock assessment work presented in SC-10-42 to the work being undertaken by the SIOFA-PAM Project.

7.1.4 Updates to the fisheries summary

234. The Science Officer presented SIOFA Fisheries Summary: orange roughy (*Hoplostethus atlanticus*) 2025 (SC-10-16). This fisheries summary was first published in 2023. An updated version of this summary was also published in 2024. The 2025 version included figures with data updated to 2023.

235. The SC further updated and endorsed the SIOFA fisheries summary for orange roughy 2025 (SC-10-16-Rev1).

236. The SC recommended that the MoP endorse the SIOFA Fisheries Summary: orange roughy 2025 and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

237. The SC agreed to update the SIOFA Fisheries Summary: orange roughy in 2029.

7.2 Alfonsino

238. Mr Charles Heaphy (SIODFA) presented SC-10-INFO-19, which provided an analysis of the history of the past catch and fishing effort of the operations of the F.V. *Will Watch* in the SIOFA alfonsino fishery. The paper built on the previous analysis presented at SC09 (SC-09-INFO-29) by including fishing results from 2024. The F.V. *Will Watch* has targeted alfonsino in the SIOFA Area since 1999 using the same fishing method and gear configuration and many of the same crew. The record showed a complex history that reflects market/demand in the fishery, the complex behaviour of alfonsino and the varying effects of oceanographic variability on its catchability. Based on the review, the authors concluded that for this fishery, the best method to assess relative alfonsino resource abundance was the annual average catch per tow of this vessel.

239. The SC noted that there is no indication that Indian Ocean alfonsino is overfished or that overfishing was occurring.

240. The SC noted that the MoP has previously discussed total allowable effort (TAE) as a possible means of managing alfonsino. SIODFA suggested that number of vessels would be an appropriate metric for setting TAE. Australia suggested that vessel days would be a more appropriate TAE metric. The SC agreed to discuss appropriate TAE metrics further at its future meetings and agreed that this should be evaluated as part of an MSE process.

7.2.1 Descriptive characterisation
7.2.2 Stock monitoring and data collection
7.2.3 Stock assessment

241. The SC noted that the next alfonsino stock assessment is scheduled for 2026–2027.

7.2.4 Updates to the fisheries summary

242. The Science Officer presented Fisheries Summary: alfonsino (*Beryx* spp., *B. splendens*, *B. decadactylus*) 2025 (SC-10-17). The Summary was first published in 2024. The 2025 version included updated figures using data up to 2023.

243. The SC requested that the Secretariat present the figure of yearly incidental catch of VME indicator taxa in fisheries targeting alfonsino by taxa group (corals/sponges), rather than by species in the next version of the Summary.

244. The SC updated and endorsed the SIOFA fisheries summary for alfonsino 2025 (SC-10-17-Rev1).

245. The SC recommended that the MoP endorse SIOFA Fisheries Summary: alfonsino 2025 and make a public version of it, with confidential information removed, available on the SIOFA website.

246. The SC agreed that the next review and update of the SIOFA Fisheries Summary: alfonsino should be undertaken in 2028 after the stock assessment is complete.

7.3 Toothfish
7.3.1 Descriptive characterisation

247. Dr Anne-Elise Nieblas and Dr Dominique Cowart (Company for Open Ocean Observations and Logging (COOOL)) presented SC-10-38, the final report on Project SER2022-TOP2: Stock structure of Patagonian toothfish (*Dissostichus eleginoides*). The project aimed to design a genetic stock discrimination project to understand the stock structure of Patagonian toothfish in the SIOFA Area, including linkages to Patagonian toothfish in the CCAMLR Convention Area in order to advise on the delineation of management units. In the sister project SER2022-TOP1, sampling was recommended to be undertaken in major fishing areas with flat bottoms (<0.2 radians) of <2000 m depth during the November to March presumed spawning season. A total of 251 samples from South Indian Ridge (SIR) (n = 65), Del Cano Rise (DCR) (n = 65), Williams Ridge (WR) (n = 34), Crozet (CR) (n = 24), Kerguelen (KER) (n = 27), Prince Edward and Marion Islands (PEMI) (n = 35) and SIR (n = 1) produced a combined dataset consisting of > 59 000 Single Nucleotide Polymorphism (SNP) loci. The bioinformatic filtering resulted in a combined dataset of 242 samples and > 2 700 SNPs ready for downstream analyses. Discriminant Analysis of Principal Components (DAPC) clustering analyses of the genetic dataset identified the presence of one population cluster, i.e., a single panmictic population of *D. eleginoides* in the southwest Indian Ocean, with additional analysis supporting the lack of genetic structuring. Simple potential habitat distribution, informed by key environmental parameters indicated continuous potential habitat across CCAMLR and SIOFA boundaries and north of the current DCR management unit into SIR. Tagging results and data review further supported the likelihood of mixing across the SIOFA/CCAMLR boundary.

248. The SC noted that the study in SC-10-38 indicated a single panmictic population of Patagonian toothfish in the SIOFA Area. The SC therefore recommended that the MoP:
    a. harmonise management measures across toothfish management units, and
    b. continue to maintain management approaches that were consistent with the management framework of CCAMLR.

249. The SC noted the value of conducting further genetic studies to support fisheries monitoring, including:
    a. a wider population discrimination study for the Southern Ocean,
    b. a pilot project to determine age and sex using epigenetics to explore a potential alternative for determining age and sex, which could streamline demographic analysis, and also provide key information for stock assessment, and
    c. supporting genetic projects with standard genetic sampling across the SIOFA and CCAMLR observer programs.

250. The SC noted the potential value of a Close-Kin Mark-Recapture (CKMR) pilot project, while noting the potential high cost of such work. The SC noted that Australia is conducting a pilot CKMR study for the Macquarie Island toothfish population, welcomed Australia's offer to present the results to the SC in the future, and agreed to consider the value of conducting a CKMR pilot project in the SIOFA Area after having reviewed the results of the Australian study.

251. The SC noted that SC-10-38 may also be of interest to CCAMLR and tasked the SIOFA Secretariat to liaise with the CCAMLR Secretariat on how this paper could be shared with the relevant CCAMLR body/ies.

252. The SC thanked Dr Nieblas and Dr Cowart for their work. The SC also expressed special thanks for their efforts to obtain additional genetic samples, as well as for the Secretariat's support in obtaining additional funding for that work.

253. The SC thanked the EU for funding this work.

7.3.2 Stock monitoring and data collection

254. The Data Officer presented SC-10-34, which provided a review of longline spacing in DCR. He explained that, in 2023, the MoP requested advice from the SC on the period of application of CMM 15(2024) (Management of Demersal Stocks) paragraph 19. The paragraph requires that a minimum spacing between line sets is maintained, but does not specify a period of application. In SC-10-34, the Secretariat reviewed the data available for DCR and provided a map of recent line deployments and associated catches.

255. The SC recommended that the MoP note that the main purpose of the line spacing requirements is to spread the tagging and recapture effort for stock assessment/monitoring purposes. In addition, the SC noted that a minimum line spacing could help mitigate depredation of toothfish on the line by marine mammals.

256. The SC noted that a bilateral France (OT)-EU working group in 2025/2026 (discussed in paragraph 271 below) would also develop a spatial analysis that would provide advice to SC11 on the most appropriate approach to regulating line spacing.

257. The SC recommended that the MoP note that, in the interim, CMM 15(2024) paragraph 19 should be interpreted as specifying that the line spacing should apply at the trip level, until further advice from the SC has been formulated.

258. Mr Nicolas Gasco (France (OT)) presented SC-10-70, which described the tools used by French fishery observers when conducting tagging procedures in the SIOFA Area and the French EEZ of Kerguelen and Crozet. France (OT) suggested that these tools could be adopted by SIOFA for improving its tagging procedure, including the statistical overlap calculation, data quality, hygiene, and photos of recaptures renamed through a naming convention.

259. SC-10-70 included a number of recommendations related to photographing recaptures, the use of a common naming convention, the provision of an overlap calculator that takes into account non-randomly chosen fish, and the inclusion of hygiene chapters in a SIOFA observer manual. The SC discussed these recommendations further under agenda item 12.

7.3.3 Stock assessment

260. The Science Officer presented SC-10-23, which provided the results of the 2025 trend analysis for SIOFA toothfish. The analysis built on the framework designed to determine appropriate catch limits in data-limited fisheries in CCAMLR, where data collection for stock assessments is in place, in the interim of having a more robust stock assessment. SC9 agreed that this trend analysis is a good candidate to define interim ad-hoc harvest control rules, adjusting any future catch limits based on trends in biomass estimated from CPUE and tagging data. Biomass can be potentially estimated using two methods, the CPUE by seabed area analogy and the Chapman mark-recapture estimation. The Science Officer applied two different methods of calculating CPUEs within the CPUE by seabed area analogy: distance-based and hook-based. The Science Officer did not apply the Chapman mark-recapture estimation as there were insufficient recaptures. Biomass estimates were used to directly recommend an update of catch limits in SIOFA Subarea 3b, but potential catch limit values were provided for further SC consideration. In the Del Cano management area

(DC), conservation measures have been in force since October 2019 (CMM 15(2019) (Management of Demersal Stocks), and the South Indian Ridge management area (SIR) is still at the proposal stage. Thus, there are no measures currently in force and data collection is on a voluntary basis.

261. The SC noted that the code of the trend analysis presented in 2024 was made available by the SIOFA Secretariat as requested (https://github.com/SIOFASecretariat/SIOFA-toothfish-catch-trend-estimate).

262. The SC noted that the code of the 2024 trend analysis was updated and expanded by the SIOFA Secretariat, and tasked the Secretariat to provide the updated code (with confidential information removed), on the SIOFA Secretariat GitHub.

263. The SC noted that evaluation of catch trend analysis has been conducted by the Secretariat for both the Del Cano toothfish management area and the proposed South Indian Ridge toothfish management area, and using both distance- and hook-based estimations.

264. The SC reaffirmed its recommendation (para 211, SC9 Report) that the MoP establish a new Management Area for toothfish, South Indian Ridge (SIR), which should be the area bounded by the box defined in Table 2 below.

Table 2: The proposed South Indian Ridge (SIR) area

Latitude	Longitude
40°00' S	43°30' E
44°00' S	43°30' E
44°00' S	40°55' E
43°47.2' S	40°30' E
40°00' S	40°30' E

265. The SC recalled that the MoP (para 122, MoP11 Report) noted the recommendation in paragraph 209 of the SC9 Report and noted that the trend analysis should be used for setting the respective catch limits for the toothfish Management Area of Del Cano Rise (DC) and the proposed Management Area of South Indian Ridge (SIR).

266. The SC noted, based on the Secretariat analysis (SC10-23), that for the DC management area, both distance-based and hook-based methods for calculating CPUE show an increase of the CPUE (0.87 and 0.94 respectively), hence leading to an increase of 20% of the catch limit compared to the previous value according to the SIOFA trend analysis.

267. The SC recommended a catch limit of 52.8 t for the DC Management Area for 2026, based on the SIOFA trend analysis.

268. The SC noted that for the proposed SIR Management Area, the distance-based method shows a decrease (-0.42) in the CPUE trend while the hook-based method shows an increase (0.12) in the CPUE trend.

269. Having two conflicting CPUE trends, the SC noted that the precautionary approach would be to base the 2026 catch limit decision for the proposed SIR Management Area on the method that gave the lowest catch limit.

270. The SC recommended a catch limit of 83.4 t for the proposed SIR Management Area for 2026, based on the SIOFA distance-based trend analysis.

271. The SC welcomed the offer by Dr Sebastián Rodríguez Alfaro (EU) and Dr Alexis Martin (France (OT)) to hold a bilateral working group in 2025/2026 to further develop the trend analysis rule using the Patagonian toothfish fishery in the Crozet

Area as the default reference area, and methods for calculating the CPUE trend.

272. The SC noted that the EU and France (OT) might seek assistance from the Secretariat (Science Officer) during their working group, if needed.

273. The SC endorsed the proposed bilateral working group and welcomed the offer to present a paper at SC11 describing the outcomes of this working group.

274. The SC thanked the Science Officer for conducting the 2025 trend analysis work.

275. The SC requested that the Science Officer continue to conduct the trend analysis for SIOFA toothfish in 2026.

276. The Data Officer examined the reported hook spacing data and noted that the same vessel had reported different hook spacing configurations for its operations in DCR and those in SIR. The SC noted that this seemed unlikely to be correct and tasked the Secretariat to reconfirm this information with the flag CCP.

7.3.4 Updates to the fisheries summary

277. The Science Officer presented Fisheries Summary: toothfish (*Dissostichus* spp., *D. eleginoides*, *D. mawsoni*) 2025 (SC-10-18). This Summary was first published in 2024. The 2025 version included updated figures using data up to 2023.

278. The SC updated and endorsed the SIOFA fisheries summary for toothfish 2025 (SC-10-18-Rev1).

279. The SC noted that some toothfish tagging data at the CCAMLR Secretariat had yet to be retrieved and could not be included in this analysis.

280. The SC noted that the Secretariat has added a section on toothfish tagging rates and overlap, as requested by SC9, in preparing the SIOFA Fisheries Summary: toothfish 2025.

281. The SC noted that the tag rate analysis has highlighted gaps in the data held by the Secretariat and requested CCPs to submit the missing data to the Secretariat with their next data submission in 2025.

282. The SC recommended that the MoP endorse the SIOFA Fisheries Summary: Toothfish 2025 and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

283. The SC agreed to next review and update the SIOFA Fisheries Summary: toothfish in 2026.

284. The SC welcomed the offer from Australia, the EU, and France (OT) to share their historical toothfish tag release and recapture data and encouraged them to work with the Secretariat to ensure the data are available for next year's update of the Fishery Summary.

285. The SC welcomed the offer from Japan to submit haul-by-haul toothfish catch and effort data for 2014–2017 where available and to liaise with the Data Officer to integrate these data into the Catch & Effort Database.

7.4 Oilfish
7.4.1 Descriptive characterisation
7.4.2 Stock monitoring and data collection
7.4.3 Stock assessment

286. Dr Ching-Ping Lu (Chinese Taipei) presented SC-10-75, which provided Chinese Taipei's preliminary CPUE standardisation analyses using oilfish longliner fisheries data from 2017 to 2023. Oilfish and escolar are both bycatch species of the Taiwanese large-scale tuna longline fleet and have usually been categorised as "others" in the fisheries statistical data. Chinese Taipei conducted the CPUE standardisation analyses of these two species separately using the statistical

information of Taiwanese large-scale longline fleets operated in the Indian Ocean from 2017 to 2023. For the preliminary CPUE standardisation analyses, operational catch and effort data were applied for clarifying various characteristics of the targeting of fishing operations. A cluster analysis was conducted to explore the characteristics of targeting fishing operations for the next step. For the CPUE analyses, a simple delta-lognormal model without interactions was adopted to avoid the confounding from interactions for the CPUE standardisation analyses of each species. Based on the preliminary results, the CPUE trend of oilfish and escolar increased with updated data in 2023. The pattern of the CPUE trends in both species were revealed to be relatively stable in recently years. For further research, it would be helpful to expand the temporal series data of these two species in the Indian Ocean for understanding the implications for their CPUE indices.

287. The SC noted that the oilfish and escolar fishery is the largest fishery in SIOFA by tonnage. The SC noted that, based on the information in SC-10-75, there are no concerning trends in this fishery.

288. The SC thanked Chinese Taipei for conducting this work.

289. The SC encouraged Chinese Taipei to provide updated standardisations every two years and present its next update at SC12.

290. Dr Lu (Chinese Taipei) presented SC-10-76, which provided the preliminary results related to gonadal characteristics for the estimation of the reproductive parameters for oilfish and escolar in the Indian Ocean. For the basic biological information of the sample collection with two species, 268 specimens of oilfish and 716 specimens of escolar were collected from 2020 to 2022. The ranges of the fork-length (FL) of the oilfish and escolar sample collection were from 51 to 145 cm and 44 to 148 cm, respectively. For the weights (rounded to the nearest kilogram), 27 kg was measured as the maximum in oilfish and 36 kg as the maximum in escolar. The weight-length relationship of oilfish and escolar were also estimated as $Rw = 1E\text{-}06*FL^{3.3391}$ for oilfish and $Rw = 3E\text{-}06*FL^{3.2715}$ for escolar. In order to understand the maturity of the oilfish and escolar in the Indian Ocean, their gonadosomatic index (GSI) values were estimated. The overall GSI averages for both females and males were under 5.0 in these two species. Similar patterns of monthly GSI variation were observed in the females of both species, with higher monthly GSI values being observed from July to the end of the years. For further studies, Chinese Taipei plans to increase the sample size and enlarge the sample location coverage to explore the temporal and spatial distribution in the different maturity stages of oilfish and escolar in the Indian Ocean.

291. The SC thanked Chinese Taipei for conducting this work. The SC acknowledged the difficulty of analysing such data and encouraged Chinese Taipei to continue to conduct the type of work described in SC-10-76.

7.4.4 Updates to the fisheries summary

292. The Science Officer presented Fisheries Summary: oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum)* 2025 (SC-10-19). The Summary was first published in 2024. The 2025 version included updated figures using data up to 2023.

293. The SC updated and endorsed the SIOFA fishery summaries for oilfish and escolar 2025 (SC-10-19-Rev1).

294. The SC recommended that the MoP endorse the SIOFA fisheries summary for oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum)* 2025 and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

295. The SC agreed to next review and update the SIOFA Fisheries Summary: oilfish and escolar in 2027.

7.5 Other species

7.5.1 Quantitative assessment of Portuguese Dogfish

296. Dr Sebastián Rodríguez Alfaro (EU) presented SC-10-72, which provided the results of a study on the distribution pattern of Portuguese dogfish (*Centroscymnus coelolepis*) and other deepwater sharks and identification of potential biological and ecological Portuguese dogfish sensitive areas. The results indicated that the distribution and occurrence of Portuguese dogfish seemed to be north of parallel 45° south, and that SIOFA Subareas 1, 2, 4 and 5 are the most important areas for Portuguese dogfish. Sensitivity analysis of the distribution of Portuguese dogfish in these areas has not been conducted but visual inspection of the observed data suggested that the presence of Portuguese dogfish is high in these areas. Portuguese dogfish was found to be in the same areas that are important for other deepwater shark species. Important areas for deepwater sharks overlap with areas showing high catches of commercial species such as *Mora moro* and *Polyprion americanus* but not *Dissostichus eleginoides*.

297. The SC noted that the spatial distribution of Portuguese dogfish overlapped almost completely with the targeted fisheries for *Mora moro* and *Polyprion americanus* and noted the need for not only bycatch limits but also measures to avoid Portuguese dogfish bycatch.

298. The SC thanked the EU for conducting this work.

299. Mr Roberto Sarralde Vizuete (EU) presented SC-10-74, which provided the results of temporal trend analysis conducted to support understanding of the population dynamics of Portuguese dogfish (*Centroscymnus coelolepis*) in SIOFA Subareas 2, 4 and 5. The study included a depletion analysis by grouping the sets that affect the same area that caught Portuguese dogfish in 2024 and a CPUE trend analysis conducted by filtering for all the Spanish data in Subarea 2 using Autoline. Results for the 2024 fishing season showed a downward trend for Subarea 4 and an upwards trend in Subarea 5. For Subareas 4 and 5, the time series were short and therefore provided no information on trends. This made it impossible to conduct a reliable quantitative stock assessment. The status could only be inferred from the current depletion analysis, which was considered to be of insufficient information. In Subarea 2, while the trend analysis showed a slightly positive trend, there were contrasting responses in the depletion model, which might be related to immigration or emigration episodes of Portuguese dogfish from/to adjacent areas. These results supported maintaining a precautionary approach to ensure the conservation and sustainable use of Portuguese dogfish. Furthermore, stock extent is not known for these species, nor is there an understanding of population dynamics or population links within the SIOFA Area. Therefore, in the absence of better knowledge, it is recommended to continue with the same criteria, using the average bycatch of the last five years in Subarea 2, for the setting of an interim catch limit for Portuguese dogfish in Subarea 2, as was recommended by SC8 and endorsed by MoP10.

300. The SC noted the EU's intention to continue to develop this work and present updated analyses to the SC in the future.

301. The SC held further discussion on Portuguese dogfish bycatch as part of broader discussions on deepwater shark bycatch under agenda item 8.1.1.

7.5.2 Lobster

302. There was no discussion on lobster assessments at SC10.

7.5.3 Other species

303. Dr Yue Jin (China) presented SC-10-54, which provided a scientific fisheries survey report from cruises conducted by China in the SIOFA Area in 2023–2024. From November 2023 to March 2024, two Chinese fisheries scientific research vessels, *Lanhai 101* and *Lanhai 201*, conducted comprehensive fisheries resource surveys in the SIOFA Area, covering waters between 59°–68°E and 4°S–9°N. The survey involved mid-water trawling, squid jigging, and tuna longlining to study fisheries resources, as well as the distribution of plankton and fish eggs and larvae, and measurements of oceanographic physical characteristics. A total of 145 stations were surveyed to analyse biological community structures, resource distributions, and the relationship between environmental factors and fishing ground formation. Initial findings revealed a high density of fish eggs in the northern waters, indicating potential spawning grounds, and significantly enriched plankton communities during night-time. In the southern waters, relatively higher temperatures and dissolved oxygen levels were observed, suggesting favourable habitats for midwater fisheries and potential migration pathways. Economically important species were identified and their distributions were found to be closely linked to hydrological conditions, offering insights into ecosystem and population dynamics. This survey provided a scientific foundation for stock assessment and sustainable management in the region.

304. The SC thanked China for conducting these research surveys and submitting the data to the SIOFA Secretariat, and noted that China plans to conduct further surveys in the same area in 2025 and 2026.

305. Dr Zhou Fang (China) presented SC-10-55, which provided a brief introduction of the history of China's squid fisheries, including in the Indian Ocean. China's operations in the Indian Ocean began in 2003, targeting species such as *Sthenoteuthis oualaniensis*. Activities have expanded over time despite challenges such as piracy and unstable regional conditions. Since 2015, a stabilised fishing ground by Chinese squid fishing vessels has been established, with a focus on the north-western Indian Ocean, and Chinese squid-fishing resumed within the SIOFA Area in 2023. China is committed to the sustainable development of the squid resources in the Indian Ocean and has conducted extensive research in this area. Since 2022, China has implemented an independent high seas fishing moratorium policy in the northern Indian Ocean and aims to carry out further studies within the SIOFA Area in the future.

306. The SC thanked China for presenting information about its squid fishery in the high seas of the Indian Ocean, including its operations, research, and policies.

307. Dr Fang (China) introduced SC-10-INFO-15, which provided the results of a study on the effects of climate change on the purpleback flying squid (*Sthenoteuthis oualaniensis)* habitats in the northern Indian Ocean; SC-10-INFO-16, which provided the results of a habitat suitability study for the purpleback squid in the northern Indian Ocean based on different weights; and SC-10-INFO-08, which provided information on the fishery biology of purpleback flying squid based on surveys conducted in the northwest Indian Ocean.

308. The SC thanked China for presenting this information about purpleback flying squid.

309. Dr Jiaqi Wang (China) presented SC-10-56-Rev1, which provided China's squid-fishing footprint in the SIOFA Area in 2003–2024. China's squid fishing in the SIOFA Area started in 2003 and was conducted until 2015. After a hiatus, squid fishing resumed in

2023 and 2024. The fishing footprint spans SIOFA Subareas 1, 4, 7, and 8. China also suggested that squid are mobile and, like in other regional fisheries management organisations (RFMOs), they should not be considered to be restricted to a specific area. Thus, China recommended that the SC request the MoP to reconsider the operational scope of squid fisheries.

310. The SC noted that squid jigging is not a bottom fishery and does not contact the bottom.

311. The SC recommended that the MoP note that China's historical squid fishing footprint spans SIOFA Subareas 1, 4, 7 and 8.

312. The SC recommended that the MoP note that squid are mobile and may be distributed beyond Subareas 1, 4, 7 and 8.

313. The SC requested the MoP reconsider the operational scope of squid fisheries.

314. The SC noted that China has historical data from its squid fisheries and requested the Secretariat to work with China to enable the submission of these data to the SIOFA databases.

315. The SC noted that if squid fisheries are to be developed in the SIOFA Area, it would be useful to learn from the experiences of other RFMOs, such as SPRFMO and the North Pacific Fisheries Commission (NPFC), including best practices for data collection and stock assessments.

7.5.4 Updates to the fisheries summaries

316. The Science Officer presented SIOFA Fishery Summaries: hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2025 (SC-10-20). This Summary was first published in 2024. The 2025 version included updated figures using data up to 2023.

317. The SC updated and endorsed the SIOFA fisheries summary for hapuka 2025 (SC-10-20-Rev1).

318. The SC recommended that the MoP endorse the SIOFA Fisheries Summary: hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2025 and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

319. The SC agreed to next review and update the SIOFA Fisheries Summary: hapuka in 2028.

320. The Science Officer presented Fisheries Summary: common mora (*Mora moro*) 2024 (SC-10-21). This Summary was first published in 2024. The 2025 version included updated figures using data up to 2023.

321. The SC updated and endorsed the SIOFA fisheries summary for common mora 2025 (SC-10-21-Rev1).

322. The SC recommended that the MoP endorse the SIOFA Fisheries Summary: common mora (*Mora moro*) 2025 and task the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.

323. The SC agreed to next review and update the SIOFA Fisheries Summary: common mora in 2028.

324. When reviewing the SIOFA Fisheries Summaries for hapuka and common mora, the SC noted that there were no operations declared by the operator and reported to SIOFA as targeting either species, or identified by the 20% catch threshold as targeting those species, in recent years.

325. The SC noted that the EU would check its data submissions for the hapuka and common mora fisheries to ensure that the information reported on target species in

vessel logbooks and observer logbooks is accurate.

326. The SC agreed that it would be useful to include pictures or drawings of the fish species in each of the SIOFA Fisheries Summaries in the future, should appropriate images be made available to the Secretariat.

327. The SC thanked the Science Officer for the updated fisheries summaries and acknowledged the large amount of work involved in creating these.

328. The United Nations Food and Agriculture Organization (FAO) Deep-sea Fisheries (DSF) Project expressed its appreciation for the high quality of the SIOFA fisheries summaries and the bottom fishing impact assessments and their accessible and informative nature to a general audience.

329. The SC discussed the feasibility of assessing the status of key SIOFA species against maximum sustainable yield (MSY). The SC noted that, among the key SIOFA species, the SC would likely only be able to produce reliable MSY estimates for orange roughy, and perhaps it would be able to adapt an MSY estimate for toothfish from a non-SIOFA toothfish fishery. The SC noted, however, that it would be possible to conduct qualitative evaluations, for example by analysing catch trends, to approximate a stock's status against MSY.

Agenda item 8. Bycatch and incidental captures

8.1 Deepwater chondrichthyans

330. The consultant, Mr Paul Clerkin (Virginian Institute of Marine Science (VIMS)), presented SC-10-43, a report on the results of Project DWS-2023-02: Identification and Trends in Deepwater Sharks. The project investigated the chondrichthyan species composition and capture rates aboard the F.V. *Will Watch* in 2024 and compared the data to data collected aboard the vessel in 2012 and 2014. The project collected data and specimens to contribute to clarifying the ambiguous taxonomic status of southwestern Indian Ocean chimaeroids and catalogue the chondrichthyan fauna along the northern section of the Madagascar Ridge, Walters Shoal, and the Southwestern Indian Ocean Ridge to provide a baseline of life history data. 31 species were encountered during the three surveys from 14 genera, and 25 known species (and several unknown species) from the 2024 survey spanning 15 genera (*Centrophorus, Deania, Etmopterus, Scymnodon, Centroscymnus, Centroselachus, Zameus, Somniosus, Dalatias, Mitsukurina, Apristurus, Bythaelurus, Pseudotriakis, Chimaera,* and *Plesiobatis*). The surveys spanned 46 sites and over 750 hauls to provide a rudimentary catalogue of species and baseline of population and life history information. More comprehensive studies are required to better understand the status of deep-sea sharks in this region and improve the information available. The project also developed new innovative species identification keys, tested these at sea, and interviewed users for feedback.

331. The SC agreed to continue chondrichthyan data collection to document trends over time and continue to develop a knowledge base of Indian Ocean chondrichthyan diversity and life history.

332. The SC noted the need to develop data collection tools, protocols, and data plans to study fishing impacts on chondrichthyans.

333. The SC encouraged continued voluntary collaboration with the authors to document chondrichthyan species.

334. The SC requested that the Data Officer link the data submitted from this project to the catch-effort and observer data in the SIOFA databases.

335. The SC thanked Mr Paul Clerkin for conducting this work and encouraged him to continue to build on the findings to develop additional projects and present them to the SC in the future.

336. The SC thanked the FAO DSF Project and SIODFA for supporting this work, particularly Dr Ross Shotton for his assistance in facilitating the trip.

337. The SC noted that this work was conducted through co-financing with the FAO Deep-sea Fisheries Project and that it was also linked to the DSF Project Observer Training Capacity Building Workshop. The SC noted that this was an excellent example of how SIOFA can leverage co-financing opportunities to achieve significant scientific outcomes for a small amount of funding.

338. The SC noted that the species identification keys would be highly valuable not only in the SIOFA Area but also in other regions and agreed to discuss their potential incorporation into a SIOFA observer manual under Agenda Item 12.

339. The FAO DSF Project informed the SC that it is working with Mr Clerkin to finalise the species identification keys and that other RFMOs have expressed interest in them.

8.1.1 Review of progress against CMM 12(2024) (Sharks), including development of precautionary bycatch limits

340. On behalf of Dr Krystle Keller (Australia), Mr Trent Timmiss (Australia) presented SC-10-49, which provided an update on the ecological risk assessment (ERA) of deepwater chondrichthyan species. The previous update was presented at SC09 (SC-09-37). This update included a revised post-capture survival (PCS) attribute for trawl fisheries based on feedback received during peer-review of the work, the addition of SIOFA historical catch data to the distribution maps for species categorised as high or extreme vulnerability, and further investigation of how the choice of distribution mapping source (AquaMaps, International Union for Conservation of Nature (IUCN) RedList and FAO Geonetwork) can influence SAFE vulnerability scores. The PCS changes resulted in an additional two species (*Bythaelurus naylori* and *Etmopterus pusillus*) being classified as at high or extreme vulnerability across at least one fishery, for a total of 19 species. Importantly, areas where some of these species have historically been caught in SIOFA often did not overlap with their predicted distribution. It is recommended that prior to further ERA work being undertaken, consideration should be given to addressing inconsistencies between (i) SIOFA historical catch data and predicted distributions from alternative mapping sources of species categorised at high or extreme vulnerability; and (ii) the lack of overlap in the predicted distributions from various mapping sources for many species categorised at high or extreme vulnerability. This work should initially be prioritised for species with the highest SAFE vulnerability scores and those reported as taken in the greatest number by SIOFA Fisheries.

341. The SC noted that Australia has updated the SAFE ERA for chondrichthyans presented in SC-09-37, by updating the post-capture survival (PCS) attribute (previously referred to as post-capture mortality 'PCM') and adding SIOFA historical catch data.

342. The SC noted the revision to the PCS attribute for trawl fisheries resulted in an increase in vulnerability for several species across all three mapping distribution sources; with two additional species *Bythaelurus naylori* (midwater trawl, IUCN Red List) and *Etmopterus pusillus* (demersal trawl; IUCN Red List) identified to be at either high or extreme vulnerability.

343. The SC noted that SIOFA historical catch data was added to the existing distribution maps for each species identified at either high or extreme vulnerability to fishing.

344. The SC noted that SIOFA historical catch data displayed no to low overlap with the three distribution mapping sources for several species categorised as at high or extreme vulnerability in the SAFE.

345. The SC noted that the SAFE ERA results are highly sensitive to the assumed predicted spatial distribution of the species being assessed.

346. The SC recommended that historical SIOFA data on vulnerable shark species be shared with FAO, AquaMaps and IUCN to inform the predicted distribution of these species and tasked the SIOFA Secretariat to liaise with these institutions to deliver the data, subject to the SIOFA rules of data confidentiality.

347. The SC recommended that the MoP add *Bythaelurus naylori* to Annex 1 of CMM 12(2024) (Sharks) and that smooth lanternshark (*Etmopterus pusillus*) should be considered a species at "high risk" (**Annex D.2**).

348. The SC agreed that vulnerabilities using AquaMaps is relatively robust to assumptions about the relative probability of occurrence threshold of a species throughout its predicted range.

349. The SC agreed that prior to further ERA work being undertaken, consideration should be given to addressing inconsistencies between:
    a. SIOFA historical catch data and predicted distributions from alternative mapping sources of species categorised at high or extreme vulnerability; and
    b. the lack of overlap in the predicted distributions from various mapping sources for many species categorised at high or extreme vulnerability.

350. The SC agreed that this work should be prioritised for species with the highest SAFE vulnerability scores (i.e. the lowest biological productivity) and those reported as taken in the greatest number by SIOFA fisheries, which include the following species: Portuguese dogfish (*Centroscymnus coelolepis*), birdbeak dogfish (*Deania calcea*), kitefin shark (*Dalatias licha*) and lanternsharks nei (*Etmopterus* spp.).

351. The SC agreed to add the above task to the scientific workplan.

352. The SC thanked Dr Krystle Keller and the other authors for conducting this work.

353. The DSCC thanked Australia for its work on the shark risk assessment but remained concerned at the ongoing level of high shark bycatch, especially Portuguese dogfish, which is much greater than the target species in longline fisheries. The DSCC also noted the high risk for Portuguese dogfish from the SAFE assessment.

354. The SC reviewed SIOFA's progress against CMM 12(2024) (Sharks).

355. The SC noted with concern the recent increase in catch of deepwater sharks, which increased by 77.7% in 2024 compared to 2023.

356. The SC was also concerned with the shifting of bottom longline into areas 4 and 5, where catches of deepwater sharks were 393 t and 373 t in Subareas 4 and 5 respectively, similar to the catch limit established (767.6 t) in Subarea 2 as per CMM 12 (2024).

357. The SC noted that deepwater sharks make up over 90% of the bottom longline catch in Subareas 2, 4 and 5. Portuguese dogfish by itself makes up over 85% of the total bottom longline catch from these areas, which is consistent with the SC definition of a targeted species (SC8, para 207). Combined hapuka and common mora make up less than 15% of the catch and do not meet the SC definition of a targeted species in this fishery.

358. Consistent with previous advice from SC8 and SC9, the SC recommended that the MoP take urgent action to limit the catch of deepwater sharks associated with the bottom longline fishery in Subareas 2, 4 and 5.

a. Subarea 4: The SC recommended as a precautionary measure that bottom longline fishing in subarea 4 be managed on a set-by-set basis. Consistent with the SC definition of targeted species, in each set where the catch composition is over 50% of deepwater sharks, the vessel will apply the 5 nm move on rule.

b. Subarea 5: The SC also recommended as a precautionary measure that bottom longline fishing in Subarea 5 be temporarily prohibited until a Portuguese dogfish stock assessment in the whole SIOFA Area is presented.

c. Subarea 2: The SC recommended the retention of the existing catch limit in Subarea 2 on Portuguese dogfish.

359. The SC noted that the proposed trial (Project DWS-2024-02) on the impact of using alternative trace types on the bycatch rate of sharks and target species has just started but did not occur in time for SC10 to analyse its results.

360. Due to the increased catch of deepwater sharks and the unavailability of the results of the wire trace trial, SC10 re-iterated the SC8 (para 230) advice, which recommended restricting bottom longlines to nylon trace, until such time the results of the proposed trial on trace type is analysed by SC.

361. The SC agreed to hold a virtual workshop in 2025 to discuss the outcomes of Project DWS-2024-02 and the final results obtained from tagging deepwater sharks in the Indian Ocean.

362. The SC requested that the CC clarify/assess the definition of targeting in Article 2 of CMM 12(2024) in line with the adopted (MoP10, para 130) definition for SIOFA use for SC planning and prioritisation.

363. The DSCC welcomed the research conducted by SIOFA regarding deepwater shark species. Nevertheless, the DSCC urged SIOFA to focus on implementing measures to avoid shark bycatch, such as the use of wire snoods, rather than on setting bycatch limits, which is inconsistent with sharks' bycatch status. The DSCC also questioned whether the 50% limit would be sufficient to reduce shark bycatch.

8.1.2 Protocols and guidelines for mitigating impact of fishing gear

364. Ms Charlotte Chazeau (France (OT)) presented SC-10-62, which provided a review of "Technical Mitigation Techniques to Reduce Bycatch of Sharks: There is no Silver Bullet" (Drynan & Baker (2024)) that outlines a comprehensive study of technical mitigation techniques designed to reduce shark bycatch in commercial fisheries. The study analysed 184 publications, assessed various gear modifications, sensory deterrents, and fishing strategies to address shark bycatch, and emphasised that no single solution fits all contexts. The study categorised techniques into three approaches: preventing capture, enabling escape, and reducing at-vessel mortality/increasing post-release survival. For prevention, the study recommended using specific bait types, removing ticklers of demersal trawl net, selecting the optimal mesh size for gill and trammel nets, constructing non-entangling Fish Aggregating Devices (FADs), or changing capture method. For escape, it recommended modifications such as nylon leaders or excluders in trawls. For survival, it recommended reducing soak time/time on-line, considering hook type, releasing before being hauled onboard, proper handling, and quick release methods. Nevertheless, the study found that effective methods vary by fishery and species, and local trials are recommended to confirm effectiveness before implementation. Furthermore, limited data on shark biology and behaviour complicate mitigation efforts and conflicting results highlight the need for context-specific solutions and stakeholder involvement. In conclusion, a combination of technical and regulatory

measures (e.g., quotas, bans on take, time/area closures, full retention, etc.), along with fisher support, is crucial. Moreover, the development of regionally tailored strategies and investment in research on shark behaviour and movement should be prioritised.

365. The SC noted that Drynan & Baker (2024) observed the effectiveness of the use of non-wire leader and trace materials, such as nylon, for reducing catch rates and at-vessel mortality of sharks.

366. The SC thanked Ms Chazeau for conducting this review.

367. Mr Gasco (France (OT)) presented SC-10-71, which introduced a tori line simulation tool used by France (OT) to train observers in its toothfish fishery. Tori lines are a mitigation method that reduce bird incidental bycatches in longline fisheries and the simulation tool is able to visualise the influence of the different parameters affecting the length of the aerial extension of the lines. France (OT) suggested that the tool could be shared with other SIOFA CCPs for training their observers as well.

368. The SC thanked France (OT) for sharing the simulation tool and requested that the Secretariat make it available on the Scientific Observers' Technical Resources section of the SIOFA website for potential use by other CCPs in their observer programs.

369. Mr Roberto Sarralde (EU) presented SC-10-INFO-17, which provided an update on the planned trial to test the impact of using alternative trace types on the bycatch rate of sharks and target species. In consultation with the advisory group, Mr Sarralde developed the final experimental design and circulated it to the shipowner of the F.V. *Ibsa Quinto* on 6 June 2024. However, due to operational factors, it had not been possible to implement the planned trial until the end of February 2025.

370. The SC thanked the EU for putting together a well-designed trial soon after the conclusion of SC9. The SC noted that the implementation of the trial was delayed due to operational reasons but is now underway and looked forward to seeing the results.

8.2 Development of a SIOFA skate tagging programme

371. Mr Trent Timmiss (Australia) presented SC-10-60, which provided a proposal for a SIOFA skate tagging programme for demersal longline fisheries. The proposed programme included skate and ray tagging methods adapted from CCAMLR Tagging Methods and proposed that the skate tagging rate be based on level of observer coverage, namely as opportunity allows for vessels with one observer, and all released skate that are likely to survive for vessels with two or more observers. The proposal also outlined CCAMLR's updated toothfish tagging protocols and recommended that these updated protocols also be adopted by SIOFA.

372. The SC thanked Australia for preparing the proposal.

373. Several CCPs noted the potential difficulty of tagging all released skates and suggested that a fixed tagging rate of skates be applied for vessels with two or more observers. Australia prepared a revised proposal incorporating this suggestion (SC-10-60-Rev1).

374. The SC recommended that the MoP adopt a skate tagging rate that is based on a level of observer coverage as high as opportunity allows.

375. The SC endorsed the methods and handling guidelines for toothfish and skate in Attachment A of SC-10-60 (Rev 1).

376. The SC tasked the Secretariat to create a subsection within the Scientific Observers' Technical Resources section of the SIOFA website for the tagging protocols and other tagging-related information.

8.3 IOTC bycatch

377. The Data Officer presented SC-10-32-Rev2, which provided updated catch figures up to 2023 as reported to IOTC by its Members. The dataset was shared with SIOFA by the IOTC Secretariat and included non-IOTC species. The Secretariat computed the catch of non-IOTC species that occurred in the SIOFA Area in the recent period (since 2000). Several fishing vessels are flagged to countries that are not SIOFA CCPs, but are IOTC Members, who caught significant quantities of species that fall under the SIOFA management mandate. Several SIOFA CCPs also have significant catches which have not been reported to SIOFA.

378. The SC requested that the Secretariat continue to report IOTC bycatch for species that are managed by SIOFA.

379. The SC recommended that the MoP note that several non-contracting parties have made significant catches of SIOFA species that have not been reported to SIOFA.

380. The SC recommended that the MoP note that several CCPs are reporting catch of SIOFA species to the IOTC but not to SIOFA.

381. The SC recommended that the MoP request CCPs that are members of the IOTC to request that the Commission improve bycatch reporting and species identification.

382. The SC noted that pelagic sharks caught by IOTC vessels targeting tuna species are managed under the competence of the IOTC.

383. The SC tasked the Secretariat to communicate with CCPs that are also members of IOTC to better understand which data are being reported to IOTC so as to identify data that are potentially being double-counted or not being reported to either organisation.

8.4 Seabirds, mammals, and bycatch of other species of concern

384. Mr Gasco (France (OT)) presented SC-10-63, which introduced a tool developed by French (OT) technical coordinators to train observers for counting birds around vessels, which is a task required of SIOFA scientific observers, and France (OT) would like to share with the other members. France (OT) suggested that the tool could be shared with other SIOFA CCPs for use by their observers as well.

385. The SC thanked France (OT) for presenting the tool and encouraged France (OT) to share it with the Secretariat so that it can be made available on the Scientific Observers' Technical Resources section of the SIOFA website.

386. Mr Gasco (France (OT)) presented SC-10-67, which introduced a seabird identification guide for the Kerguelen and Crozet EEZ developed by French (OT) technical advisors. This is a dedicated guide for observation at sea of species following or encountering fishing vessels in this area as part of the French scientific program. France (OT) suggested that this guide could also be used in the southern part of the SIOFA Area.

387. The SC thanked France (OT) for presenting the seabird identification guide for the southern part of the SIOFA Area and encouraged France (OT) to share it with the Secretariat so that it can be made available on the Scientific Observers' Technical Resources section of the SIOFA website.

388. Ms Kauffmann (France (OT)) presented SC-10-79, which introduced a seabird identification guide for the Saint-Paul and Amsterdam EEZ developed by French (OT) technical advisors. The guide is dedicated for observation at sea of species following or encountering fishing vessels in this area as part of the French scientific program. France (OT) suggested that this guide could also be used in the subtropical part of the SIOFA Area.

389. The SC thanked France (OT) for sharing the seabird identification guide for the

subtropical part of the SIOFA Area and encouraged France (OT) to share it with the Secretariat so that it can be made available on the Scientific Observers' Technical Resources section of the SIOFA website.

390. Mr Gasco (France (OT)) presented SC-10-68, which outlined the need for observers to collect data on bird bands. Fishery observers can observe bands on birds around fishing vessels. Those bands are used to identify individuals and are important to study bird populations. It is therefore important to collect this information and circulate it.

391. The SC noted that bands from birds found dead should be returned to the SIOFA Secretariat.

392. The SC noted that photographs of bird bands (on dead or live animals) should be submitted to the SIOFA Secretariat and reported in the observer's logbook report.

393. The SC noted that bird band data should be reported in the observer logbook.

394. The SC noted that the information on bird bands should be circulated to the scientific community by the SIOFA Secretariat.

395. The SC noted that when avian flu directives are in place, the above information should not be collected if doing so would require the handling of birds.

396. The SC considered potential amendments to the observer data requirements and forms in CMM 02(2023) (Data Standards) to include provisions for the collection of data on bird bands under agenda item 12.

397. Mr Gasco (France (OT)) presented SC-10-69, which suggested ways to reduce petrel, albatross and seal entanglements in lost gear based on beach surveys for marine debris conducted within the framework of CCAMLR protocols by French (OT) scientists in Crozet and Kerguelen EEZ, in the Saint-Paul and Amsterdam Islands, and in the SIOFA Area. Mr Gasco highlighted the importance of awareness-raising activities, such as producing and displaying posters and other educational materials on vessels and marine debris as part of observer training.

398. The SC encouraged CCPs to produce educational material such as posters and display them on their fishing vessels to highlight the importance of reducing the loss of plastic debris.

399. The SC encouraged CCPs to include marine debris as part of observer training to raise observers' awareness on this issue and its consequences.

8.4.1 Observations of marine mammals interacting with fishing gear

400. Mr Gasco (France (OT)) presented SC-10-64, which introduced France (OT)'s updated photo-identification catalogue for killer whales (*Orcinus orca*). The killer whale population is monitored by French (OT) observers around Saint-Paul and Amsterdam Islands. These animals are known to travel and are likely to be observed outside of the French EEZ within SIOFA waters, and it would be worthwhile sharing the catalogue with other SIOFA CCPs.

401. The SC thanked France (OT) for presenting the updated photo-identification catalogue for killer whales (*Orcinus orca*) and encouraged France (OT) to share it with the Secretariat so that it can be made available on the Scientific Observers' Technical Resources section of the SIOFA website.

402. Mr Gasco (France (OT)) presented SC-10-66, which introduced an interface to easily standardise the presentation of photo-identification catalogues. Photo-identification is an important tool used to study cetacean populations, and information is shared between institutes through the means of catalogues representing all the pictures available for all the individuals. However, producing such catalogues is time-

consuming. Therefore, France (OT) developed this interface and suggested that it be shared among CCPs.

403. The SC thanked France (OT) for presenting the interface for standardising the presentation of photo-identification catalogues for cetacean populations and encouraged France (OT) to share it with the Secretariat so that it can be made available on the Scientific Observers' Technical Resources section of the SIOFA website.

404. Ms Vanessa Rojo Mendez (EU) presented SC-10-73, which provided the results of a preliminary analysis on marine mammal interactions in SIOFA fisheries targeting Patagonian toothfish from the EU-Spain longline fleet. The specialised behaviour of killer whales (*Orcinus orca*) and sperm whales (*Physeter macrocephalus*) feeding on longline-caught fish, which is known as depredation and has been linked to the development of longline fisheries targeting Patagonian toothfish (*Dissostichus eleginoides*) in the Southern Indian Ocean, appears to be increasing in the SIOFA Area. The interactions between these two odontocete species with fishing vessels leads to decreasing fishing yields and increasing uncertainty as to the proportion of the catch lost to predation. This, in turn, may affect the accuracy of Patagonian toothfish population dynamics models and, consequently, the effectiveness of stock management strategies. Using scientific observer data from 2022 to 2024 on the Spanish longline fishery for Patagonian toothfish in the Del Cano Rise and South Indian Ridge fishing grounds, within the SIOFA Area, this study evaluated the levels and interannual trends of interactions with sperm whales and killer whales. Observations of these interactions, without being conclusively identified as depredation events, were assessed as proportions of fishing sets and spatial grid cells within the fishing areas, as well as through the relative catch loss index for Patagonian toothfish.

405. The SC noted the importance of collecting data on whale depredation in the SIOFA Area, as levels of depredation would affect the estimates of total removals and the CPUE used in assessments. The SC noted that data collection by onboard observers could be enhanced by improving the data recording protocols for observers aboard the Spanish longline fleet to ensure they can accurately document interactions with killer whales and sperm whales, distinguishing between different behaviours, including depredation events. However, the SC also noted the difficulty of implementing such enhanced data collection with the current overwork of on-board observers. The SC noted that prioritisation of the observer tasks, nomination of additional observers on board, or the use of e-monitoring could help with the marine mammal interaction records.

406. The SC noted the value of photo-identification of whales involved in depredation interactions for better understanding depredation in the SIOFA Area. The SC noted that the need for high-level camera equipment has traditionally limited such efforts but recalled that France (OT) had previously presented a paper on an alternative method for conducting such photo-identification with cheaper and easier-to-handle cameras (SERAWG-03-INFO-02).

407. The SC noted that the following actions, recommended in the document SC-05-21 for longline fishing vessels subject to interactions with killer whales, are effective means of reducing the risk of spreading predation behaviour:
    a. stop trawling and remove the buoy from the line when killer whales are sighted,

b. move at least 30 nautical miles away,

c. not turn any line within 30 nautical miles of the initial sighting point; and

d. resume longline tacking once killer whales are absent.

408. The SC encouraged the EU to investigate how the estimates of whale depredation could be incorporated into future catch estimates and CPUE trend analyses for SIOFA toothfish fisheries.

409. The Data Officer presented SC-10-INFO-06-Rev1, which summarised information about interaction with whales in SIOFA demersal longline fisheries as recorded in the observer databases. In 2023, 326 operations took place in the SIOFA Area. No presence of mammals was observed outside Subarea 3b. However, most of the operations took place in Del Cano Rise, where the observers reported the presence of mammals several times. When these species were sperm whales (*Physeter macrocephalus*) or killer whales (*Orcinus orca*), most of the time they interacted with the fishing gears.

410. The SC reaffirmed that depredation is an important issue that needs to be addressed in the SIOFA Area, especially in Del Cano Rise.

8.4.2 Seabird mitigation measures

411. France (OT) presented SC-INFO-23, a paper co-authored with the Agreement on the Conservation of Albatrosses and Petrels (ACAP) Secretariat that provided an update on ACAP activities and advice on reducing the bycatch of albatrosses and petrels in SIOFA fisheries. Bycatch in longline and trawl fisheries continues to be a serious global concern for threatened albatrosses and petrels, resulting in Conservation Crises being declared by the ACAP in 2019 and reiterated in 2024. Three of the eighteen ACAP-listed species whose distributions overlap with the SIOFA Area and were previously considered stable or unknown have now been reclassified as declining. Seven of the nine ACAP High Priority Populations breed or forage in the SIOFA Area, including populations that spend a significant proportion of their time in SIOFA waters. SIOFA CMM 13(2022) (Mitigation of Seabirds Bycatch) is broadly consistent with ACAP Best Practice Advice for longline fisheries. Nevertheless, the evolution of ACAP best practice mitigation advice means that further alignment could be achieved. Furthermore, CMM 13(2022) lacks any stipulated mitigation measures for trawl fisheries. Therefore, the SIOFA SC may wish to reinvigorate efforts directed at undertaking a focused review of its seabird data collection standard in CMM 02(2023) (Data Standards) and seabird bycatch mitigation measures in CMM 13(2022). SIOFA could combine its efforts with, or draw upon, the parallel, intersessional reviews being conducted by SPRFMO and the South East Atlantic Fisheries Organisation (SEAFO) of their seabird conservation and mitigation measures, to which ACAP is providing support/advice. ACAP would be willing to support such a SIOFA review, if requested.

412. Ms Marion Kauffmann (France (OT)) presented SC-10-77, which provided a review of Fromant et al. (2024) "Fine-scale behaviour and population estimates suggest low exposure but do not exclude high sensitivity to bycatch for Endangered sooty albatrosses" *bioRxiv preprint* – April 2024. 11 sooty albatrosses (*Phoebetria fusca*) were equipped with Global Positioning System (GPS) and boat radar detection devices during breeding season (December) in the Crozet archipelago, to monitor their trajectories and their feeding areas during the relatively short trips during the incubation period, as well as their overlap with fishing activities. All individuals travelled further than the extent of the EEZ of Crozet Islands, foraging mostly north of

the sub-Antarctic and subtropical fronts, in SIOFA waters. The data indicated low encounter and interaction rates with fishing boats, but an overlap of the feeding grounds with longline and trawl fisheries, some of which have reported bycatch before. The authors extrapolated the probability of interaction rate observed in the study at 0.09 per day and individual for the whole Crozet Islands population, currently estimated at 444 breeding pairs. Between two and three individuals of the Crozet population are likely to be within 5 km of a fishing vessel each day during the 70 days of the incubation period. This number might rise to 20-25 individuals per day in winter (June-September), when sooty albatrosses from the Crozet Islands spend more time in subtropical waters and fishing activity is higher. Even a low individual risk may have a significant impact on such small populations. For a biennially-breeding species, mortalities from all sources (including bycatch) should not exceed 0.015 times the number of breeding pairs to maintain a viable population, which corresponds to 6.7 individuals per year for the sooty albatross population from Crozet.

413. The SC noted the information provided in the paper. The SC suggested that the analysis of monthly fishing effort in the areas potentially used by sooty albatrosses from Crozet and Marion islands should distinguish between pelagic and demersal gears to take into account the different seabird bycatch mitigation measures associated with the different gear types.

414. The SC thanked Ms Kauffmann for conducting this review.

415. Ms Kauffmann (France (OT)) presented SC-10-78, which provided a review of Banda et al. (2023), "Gauging the threat: exposure and attraction of sooty albatrosses and white-chinned petrels to fisheries activities in the Southern Indian Ocean" (https://doi.org/10.1093/icesjms/fsad176). 20 sooty albatrosses (*Phoebetria fusca*) and 18 white-chinned petrels (*Procellaria aequinoctialis*) were equipped with GPS during two consecutive breeding seasons (October-February) on Marion Island (Prince Edward Islands), to monitor their trajectories and identify their feeding areas during the relatively short trips during the incubation period, as well as their overlap with fishing activities using Automatic Identification System (AIS) data. Both species travelled north in SIOFA waters. The white-chinned petrels commute to and from the South African shelf, while sooty albatrosses remained within the SIOFA Area to forage. The fishing boat encounter rate was 72% for the white-chinned petrels, compared to 20% for the sooty albatrosses. The number of fishing boats encountered or attended, and the duration of each encounter was significantly higher in white-chinned petrels. In the oceanic subtropical open waters of the SIOFA where they foraged, the sooty albatrosses experienced a lower encounter rate than the white-chinned petrels, who mainly foraged over subtropical shelf waters. In addition to foraging in a zone where fishing activity was lower during the study period, they showed less attraction towards fishing boats and no engagement of foraging activity specifically due to the boats' presence. These findings were consistent with the observed numbers of individuals of each species around fishing vessels and in bycatch estimates. The low encounter rate and attraction observed for the sooty albatrosses did not, however, eliminate fisheries bycatch mortality as a likely factor for the demographic decline. The authors estimated that 1 in 20 sooty albatross individuals interact with a fishing boat and are at risk of bycatch over a period of 160 days. For the population of Marion Island, consisting of 1838 breeding pairs, this translated to a predicted daily bycatch risk rate of 1.15 individuals per day, which could have contributed to the observed decline.

416. The SC noted the information in the paper.
417. The SC noted that the distribution of these sooty albatross and white-chinned petrel populations extended outside the SIOFA Area and seemed to overlap with the areas of competence of the IOTC and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and encouraged France (OT) to share this information with the two organisations.
418. The SC thanked Ms Kauffmann for conducting this review.
419. The SC noted that currently CMM 13(2022) (Mitigation of Seabirds Bycatch) did not contain specifications nor guidance for the mitigation of seabird bycatch from trawl vessels. The SC recommended that the MoP correct this oversight with an update to CMM 13(2022).
420. The SC welcomed the offer from the Cook Islands in collaboration with other interested CCPs to assist with this work and to prepare an amendment to CMM 13(2022) for consideration at MoP12. The amendment will include trawl mitigation rules and propose removing any redundant text from the CMM.

8.5. Discards at sea
421. The Science Officer informed the SC that information on discards at sea is available in dedicated sections contained in the Overview of SIOFA Fisheries, SIOFA Ecosystem Summary, and the SIOFA Fisheries Summaries. The Science Officer reported that, based on an analysis of the data submitted to the Secretariat, discards from SIOFA fisheries have been negligible in terms of value and volume in recent years.
422. The SC noted that the analysis conducted by the Secretariat used data from vessel logbooks and that fisheries with lower levels of observer coverage would likely have lower quality discard data.

Agenda item 9. Vulnerable Marine Ecosystems (VME)

9.1 Report of VME encounters
423. The SC noted the information in SC-10-INFO-07, namely that the Secretariat did not receive any report of VME encounters in 2024.

9.2 VME data and the setting of VME encounter thresholds
424. The SC recalled its previous discussions at SC8 and SC9 that encounters from demersal longline are required to be reported at the line segment level (i.e., per 1000 hooks or 1200 m, see CMM 01(2024) (Interim Management of Bottom Fishing)) and that the VME encounter threshold is based on the number of VME-indicator units in a single line segment, but that the data record VMEs for entire haul/set. The SC considered this issue again and agreed to hold further discussions at SC11.

9.3 Revisions of the list of VME taxa and to the VME taxa ID guides
425. The Science Officer presented SC-10-26, which proposed revisions to the SIOFA VME Taxa Classification Guide 2021 and the VME indicator taxa list in Annex 1 of CMM 01(2024) (Interim Management of Bottom Fishing). The Secretariat conducted a review of the SIOFA VME Taxa Classification Guide 2021 and of CMM 01(2024) Annex 1. The Secretariat noted that some of the nomenclature and three-letter codes present in the "SIOFA VME Taxa Classification Guide 2021" have become obsolete or are incorrect, and that the nomenclature in Annex 1 of CMM 01(2024) is scientifically sound but lacks structure and could lead to confusion across taxa. The Secretariat therefore suggested amendments to the nomenclature of the SIOFA VME Taxa Classification Guide and the structure of CMM 01(2024) Annex 1.

426. The SC endorsed the revised version of CMM 01(2024) Annex 1 proposed in SC-10-26, and recommended that the MoP amend CMM 01(2024) accordingly (**Annex D.1**).

427. The SC reviewed and endorsed "SIOFA VME Taxa Classification Guide 2025". The SC tasked the Secretariat to publish the new guide on the SIOFA website (under https://siofa.org/science/observers-resources).

9.4. Register of SIOFA VME areas

428. The SC noted that SIOFA has not identified any VMEs or VME areas.

429. The SC noted that a map of incidental catch of VME taxa and other invertebrates is available in the SIOFA Ecosystem Summary and also in each Fisheries Summary.

430. The DSCC suggested that to advance work on a register of VMEs, SIOFA could look at the FAO DSF Guidelines for identifying VMEs. Another option would be to review how other organisations have applied VME criteria, such as CCAMLR, which has a process for registering identified VMEs and has added new areas on an annual basis.

9.5 Management options for preventing SAIs on VMEs

431. The DSCC presented SC-10-INFO-20, which provided the results of a review of whether seamounts, including knolls and hills, meet the criteria for classification as VMEs under the FAO DSF Guidelines. Based on comprehensive scientific evidence, the DSCC determined that seamounts meet four out of the five FAO VME criteria, including section 3.2 on vulnerability, and should be listed as VMEs.

432. The DSCC presented SC-10-INFO-22, which provided a review of different management arrangements to protect VMEs from significant adverse impacts. The DSCC proposed a review of encounter thresholds and the taxa subdivision for trawl and longline encounters with VME indicator taxa. The DSCC also looked at the Saya de Malha Bank and supported the protection of the area and the inclusion of sea grasses and rhodolith beds as VME indicator taxa. The DSCC noted that a Greenpeace research cruise of Saya de Malha in March 2021 had information that would be useful to SIOFA deliberations and expressed its intention to present the findings to a future meeting.

Agenda item 10. Marine protected areas

10.1 Monitoring protected areas

10.2. Protected area designation

433. The Science Officer introduced SC-10-39, the final report for Project PAE2022-MPA1: Protocols to designate and evaluate marine protected areas (MPAs) in the SIOFA Area. He explained that the draft final report was presented at SC9 and subsequently finalised by the consultants based on the SC's comments.

434. The SC thanked the authors for conducting this work.

435. The SC thanked the EU for funding this work.

436. Mr Trent Timmiss (Australia), the Convener of the workshop to progress future protected area designation (WS2024-PAD), presented the WS2024-PAD Convener's Report (SC-10-46).

437. The SC reviewed the recommendations from the WS2024-PAD.

438. The SC reviewed WS2024-PAD's proposed changes to the SIOFA protocol for future protected areas designation (as shown in Annex B of the Convener's Report (SC-10-46)) and proposed further changes to the Protocol. The SC adopted the revised SIOFA protocol for future protected areas designation (**Annex G**) and tasked the Secretariat to publish the Protocol on the SIOFA website.

439. The SC noted the potential usefulness of the IUCN technical note on key characteristics and criteria for other effective area-based conservation measures (OECMs), as well as the IUCN report on recognising and reporting OECMs, as resources to inform the SC's discussions on the potential use of OECMs in SIOFA.

440. The SC noted that all 12 features considered (namely the Atlantis Bank, Banana, Bridle, Coral, East Broken Ridge, Fools Flat, Gülden Draak, Mid-Indian Ridge, Middle of What, Rusky Knoll, South Indian Ridge and Walter's Shoal features) satisfy various criteria in the SIOFA standard protocol for future protected areas designation. (Full details of each BPA are contained in Annex C of the WS2024-PAD Convener's Report (SC-10-46).)

441. The SC recalled that Article 4(c) of the Agreement obliges Contracting Parties to apply the precautionary approach in accordance with the FAO Code of Conduct for Responsible Fisheries and the 1995 UN Fish Stocks Agreement, whereby the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.

442. Regarding Atlantis Bank, the SC noted:
    a. the presence of unique habitats, VME indicator taxa, and endemic species in the area;
    b. that the area satisfies criteria 1a, 3b, 4a and 6b of the SIOFA standard protocol for future protected areas designation; and
    c. that the area is currently listed as an ecologically or biologically significant marine areas (EBSA).

443. The SC recommended that the MoP designate Atlantis Bank as a BPA and close it to bottom fishing due to the presence of unique habitats, VME indicator taxa, and endemic species.

444. Regarding Coral, the SC noted:
    a. the presence of unique habitats, VME indicator taxa, and endemic species in the area; and
    b. that the area satisfies criteria 1a, 2b, 4b, and 5 of the SIOFA standard protocol for future protected areas designation.

445. The SC recommended that the MoP designate Coral as a BPA and close it to bottom fishing, except bottom longlining, due to the presence of unique habitats, VME indicator taxa, and endemic species.

446. Regarding Fools Flat, the SC noted:
    a. the presence of VME indicator taxa and potential unique habitats in the area;
    b. the long period of closure to fishing despite historic commercial fishing on the feature;
    c. that the area satisfies criteria 1a, 2b, 3a&b, and 4b of the SIOFA standard protocol for future protected areas designation;
    d. that the area contains framework-building coral reefs with brain and black coral; and
    e. that the area is currently listed as an EBSA.

447. The SC recommended that the MoP designate Fools Flat as a BPA and close it to bottom fishing due to the presence of VME indicator taxa and potential unique habitats.

448. Regarding Middle of What, the SC noted:
    a. the presence of unique habitats, VME indicator taxa, and endemic species in the area;

b. the long period of closure to fishing following high levels of fishing effort in the past;
c. that the area satisfies criteria 1a and 2a&b of the SIOFA standard protocol for future protected areas designation; and
d. that the area is the only known example of a seamount with a cold-water coral reef habitat lying in the boundary region of sub-Antarctic and subtropical water masses.

449. The SC recommended that the MoP designate Middle of What as a BPA and close it to bottom fishing due to the presence of unique habitats, VME indicator taxa, endemic species and long history of closure following high historic fishing effort.

450. Regarding Walter's Shoal, the SC noted:
   a. that Walter's Shoal is considered to be a VME;
   b. the long history of closure and the proximity to major fishing grounds; and
   c. that the area satisfies criteria 1a&b, 2b, 4b, 5, and 6b of the SIOFA standard protocol for future protected areas designation.

451. The SC recommended that the MoP designate Walter's Shoal as a BPA and close it to bottom fishing, except longlining, due to the presence of unique habitats, the area's recognition as a VME and endemic species.

452. Regarding Banana, the SC noted:
   a. that Banana is thought to be a VME; and
   b. that the area satisfies criteria 1a, 3a&b, and 6b of the SIOFA standard protocol for future protected areas designation.

453. The SC recommended that the MoP designate Banana as a BPA and close it to bottom fishing due to the presence of unique habitats, VME indicator taxa, and endemic species.

454. Regarding Bridle, the SC noted:
   a. the presence of VME indicator taxa and endemic species in the area; and
   b. that the area satisfies criteria 2a and 6b of the SIOFA standard protocol for future protected areas designation.

455. The SC recommended that the MoP designate Bridle as a BPA and close it to bottom fishing due to the presence of VME indicator taxa and endemic species.

456. Regarding East Broken Ridge, the SC noted:
   a. the presence of VME indicator taxa and unique geographic features in the area;
   b. that the area is currently listed as an EBSA;
   c. that the area satisfies criteria 1a, 3a&b of the SIOFA standard protocol for future protected areas designation; and
   d. that fishing within this area with all gears could detrimentally impact the feature.

457. The SC recommended that the MoP designate East Broken Ridge as a BPA and close it to bottom fishing due to the presence of VME indicator taxa.

458. Regarding Gülden Draak, the SC noted:
   a. the likely presence of VME indicator taxa and potential unique habitats in the area;
   b. that the remote nature of this area as well as the long history of closure suggest retaining this closure would be beneficial; and
   c. that the area satisfies criteria 1a, 2b and 3a&b of the SIOFA standard protocol for future protected areas designation.

459. The SC recommended that the MoP designate Gülden Draak as a BPA and close it to bottom fishing due to the potential presence of VME indicator taxa, potential unique habitats, and sensitive geology.

460. Regarding Mid-Indian Ridge, the SC noted:
    a. the likely presence of VME indicator taxa and potentially sensitive geological features in the area;
    b. that the remote nature of this area and that this area is unlikely to have ever been fished suggest retaining this closure would be beneficial; and
    c. that the area satisfies criteria 1a, 2c and 3a&b of the SIOFA standard protocol for future protected areas designation.

461. The SC recommended that the MoP designate Mid-Indian Ridge as a BPA and close it to bottom fishing due to the sensitive geology of the area, the likely presence of VME indicator taxa, and the remote and pristine nature of this area.

462. Regarding Rusky Knoll, the SC noted:
    a. the presence of VME indicator taxa and potentially unique habitats in the area;
    b. that the area is currently listed as an EBSA;
    c. the long period of closure to fishing following high levels of fishing effort in the past; and
    d. that the area satisfies criteria 1a, 2b and 6b of the SIOFA standard protocol for future protected areas designation.

463. The SC recommended that the MoP designate Rusky Knoll as a BPA and close it to bottom fishing due to the presence of VME indicator taxa, potentially unique habitats, and long period of closure following historic fishing effort.

464. Regarding South Indian Ridge, the SC noted:
    a. that this area is not the same as the South Indian Ridge toothfish management area proposed by SC9 and consider a new name for the area;
    b. the presence of potential VME indicator taxa, potential unique habitats, potential sensitive geological features and ETP species in the area;
    c. that the area is currently listed as an EBSA;
    d. that the area is a highly significant habitat for seabirds; and
    e. that the area satisfies criteria 1a, 2b, 3a, 4b, and 6b of the SIOFA standard protocol for future protected areas designation.

465. The SC recommended that the MoP designate South Indian Ridge as a BPA and close it to bottom fishing, except longlining, due to the presence of potential VME indicator taxa, potential unique habitats, and potential sensitive geological features.

466. The SC noted that the establishment of a new toothfish management area under the same name (South Indian Range) has been proposed to and is being considered by the MoP. The SC recommended that the MoP rename the proposed South Indian Ridge BPA if it is designated. The SC suggested the new name be Magneto to reflect the magnetic anomaly found in that area.

467. The SC recommended that these BPAs, if designated, should undergo collective or individual implementation reviews by 2035 (i.e., within 10 years) or as new information comes to light.

468. The SC agreed to add a project for developing a draft management, research and monitoring plan for BPAs in its workplan.

469. The SC thanked the workshop convener and participants for their constructive discussions and recommendations.

470. The SC welcomed the offer from the Cook Islands to prepare one-page summaries for

each proposed BPA describing their key characteristics and to submit these summaries to MoP12.

471. SC noted that the Cook Islands will submit a CMM proposal on BPAs for consideration at MoP12.

472. The DSCC welcomed the adoption and publication of a revised SIOFA standard protocol for future protected areas designation and the proposed designation of new BPAs. The DSCC urged the SC to treat the Protocol as a living document and to regularly review it, including how habitats and climate refugia should be incorporated in the designation criteria. The DSCC also urged the SC to treat BPA designation as an ongoing process and to continue to designate further BPAs drawing on the criteria in the Protocol. The DSCC suggested that as first step, the SC could consider special status areas, such as EBSAs, in regions that overlap with the SIOFA Area.

Agenda item 11. New and Exploratory Fisheries and Research cruises

473. This agenda item was chaired by SC Vice-Chairperson Dr Zhou Fang.

11.1 New and exploratory fisheries

474. Comoros presented SC-10-51-Rev1, which provided the Fisheries Operation Plan for a planned hapuka fishery.

475. The SC requested Comoros to fill out and present the Fisheries Operation Plan Checklist in Annex G.3 of the SC9 Report.

476. Comoros presented the completed Fisheries Operation Plan Checklist.

477. The SC discussed the Comoros Fisheries Operational Plan and Data Collection and Analysis plan and agreed that the approach outlined in the Fisheries Operation Plan is likely to ensure that the exploratory fishery is developed consistently with its nature as an exploratory fishery, and consistently with the objectives of the Agreement.

478. The SC requested the proponents to provide the forms that will be used for data collection to SC11.

479. The Comoros Fisheries Operation Plan Checklist, including the results of the SC's evaluation, is attached as **Annex H**.

480. The SC noted that this was the first time that it had assessed a Fisheries Operation Plan and that the procedure could be made clearer and more accessible.

481. The SC requested the Secretariat include reference to the SC's use of the Fisheries Operation Plan Checklist on the SIOFA website alongside the exploratory fisheries information package.

482. The SC tasked the Secretariat to make a Word version of the Fisheries Operation Plan Checklist available on the New and Exploratory Fisheries section of the SIOFA website for future use.

11.2 Research Cruises

483. The SC noted that China presented information from its scientific fisheries surveys during cruises conducted by China in the SIOFA Area in 2023–2024 under agenda item 7.5.3 (SC-10-54).

484. The SC reiterated its thanks to China for presenting this work and its plans for conducting future cruises.

485. China informed the SC that it has recently completed another cruise from October 2024 to March 2025 and that it intends to submit the data to the SIOFA Secretariat and to present the results at SC11. China also expressed its intention to present the plans for its next research cruise to the MoP.

486. The Data Officer introduced SC-10-33, which provided a report on efforts to obtain

data from past cruises of the Nansen Project in the SIOFA Area. In 2024, the SC requested the Secretariat to contact the FAO and the EAF Nansen Programme staff to retrieve data collected in the SIOFA Area that could be of use or value. The Secretariat had been in communication with FAO since August 2024, but at the time that SC-10-33 was submitted to the SC, progress had stalled and the Secretariat had yet to receive the data. The Secretariat provided a subsequent update that the Nansen Project has submitted the data on March 11.

487. The FAO DSF Project explained that because SIOFA was not a partner for these cruises, SIOFA had to go through the standard data request process, which can sometimes be lengthy. Furthermore, although data from the first two cruises could be made readily available, it was more difficult preparing and providing data from the third cruise, as this cruise entered and exited EEZs, which meant that there were data confidentiality requirements that had to be adhered to.

488. The Data Officer produced a revised paper with the updated information (SC-10-33-Rev1).

489. Dr Tony Thompson, FAO DSF Project presented SC-10-59 on the upcoming R.V. *Dr Fridtjof Nansen* cruise in the Indian Ocean on 20 November to 10 December 2025, which provided details of the draft work plan. This cruise was presented to SC9 (SC-09-32-Rev1) and to MoP11 (MoP-11-27-Rev1). The MoP noted the potential benefits of the R.V. *Dr Fridtjof Nansen* research cruise and agreed to approve the cruise plan, with certain conditions (para 108, MoP11 Report).

490. The SC reviewed the draft work plan.

491. The SC noted that the R.V. *Dr Fridtjof Nansen* cruise is operated by Norwegian officers, crew and lead scientists, and invites up to 18 scientists and observers to attend the cruise in various counterpart and training positions. The SC proposed the following personnel join the cruise representing SIOFA: Scientist in charge (Tony Thompson), fishing master (Phil Gaugler), acoustics (Marco Milardi), benthos (Alexis Martin), and deepwater sharks (Paul Clerkin). An acoustic expert (Gavin Macauley) will provide support in developing the sailing orders and post-cruise analysis. The sailing orders is the primary document used to guide the work programme and will be developed by Tony Thompson with support of the counterpart leaders mentioned above and the EAF Nansen programme. The Cook Islands, Thailand, China, and the EU expressed interest in participating in the cruise, and the SC welcomed others to express their interest, preferably by the end April 2025, to the Science Officer. The SC also suggested that a seabird/marine mammal expert be carried, and a potential person identified from France (OT). The SC noted that a gender target of at least 40% women among participants is desirable.

492. The SC noted that sailing orders should be completed by the end of April 2025.

493. The SC suggested including benthic sampling in the proposed Banana BPA, in addition to the proposed Walter's Shoal BPA and potentially the proposed Atlantic Bank BPA. The SC noted the long sailing times and suggested that sampling sites could be adjusted to shorten these.

494. In addition to capacity building during the cruise, the SC suggested that the DSF Project could support training in data analysis and submitting primary publications.

495. The SC requested a revised work plan for the R.V. *Dr Fridtjof Nansen* research cruise be submitted that included the above suggestions.

496. The SC reviewed the revised draft work plan (SC-10-59-Rev1) and recommended that the MoP note that the SC approved the draft work plan subject to further

development in collaboration with the EAF Nansen programme and key scientists.

497. The SC recommended that the MoP note that the R.V. *Dr Fridtjof Nansen* will operate according to the conditions approved by the MoP (para 108, MoP11 Report), including that:
    a. the data are submitted to SIOFA within 9 months of the cruise (i.e. by October 2026).
    b. information placed in the public domain must be in accordance with SIOFA data rules.
    c. CCPs participate in work and capacity building.

498. The SC noted that SIOFA is the principal partner to this collaboration with the EAF Nansen programme and will benefit from the information acquired during the cruise.

499. The SC noted the potential value of holding a workshop to explore opportunities for collaboration with research cruises by CCPs and other organisations to enhance SIOFA's scientific knowledge, including joint design of sampling programs to ensure consistency across different vessels and maximum utility of sampling data. The SC agreed to include such a workshop in its work plan.

500. The SC noted the MoP's initial discussions on the development of a specific research cruise CMM and reaffirmed the SC9 recommendation that such a CMM be developed (para 105, SC9 Report).

Agenda item 12. Scientific Observers

12.1 Observer harmonisation

501. The SC Chairperson presented SC-10-27, which described the status of progress towards establishing and operating a SIOFA observer program. He summarised the recommendations made by the SC and the MoP to date, including at meetings of the SC and the MoP, the Workshop on Harmonisation of Scientific Observers' Programmes (WHSOP), the Workshop on the Harmonisation of Scientific Observers (WS2024-OBS), and the Workshop on Scientific Observer Forms (WS2024-OBS2), as well as through Project SEC2022-OBS1: Establish a framework for scientific observation of SIOFA fisheries.

502. The SC noted the status of progress towards establishing and operating a SIOFA observer programme.

503. The SC Chairperson and the Science Officer introduced SC-10-37, the final report for Project SEC2022-OBS1: Establishment of a framework for scientific observation of SIOFA fisheries. They explained that the draft final report was presented at WS2024-OBS and SC9 and subsequently finalised by the consultants based on the SC's comments.

504. The SC noted the need to harmonise observer systems and processes with other organisations that have overlapping areas of competence with SIOFA, such as harmonising the observer programs for the pelagic longline fisheries of SIOFA and the IOTC.

505. Dr Martin (France (OT)) presented SC-10-INFO-11, which introduced the use of the Pecheker Database for the scientific monitoring, data curation, and fisheries and ecosystem-based management of the Southern Ocean French fishing industry. The Pecheker template has been developed to adapt the database to the ecosystem-based management concept. The full code to deploy a database based on the Pecheker template has been made available. This tool could potentially facilitate the building of a global fisheries information system across the fisheries science

community.

506. The SC thanked Dr Martin and the authors for sharing this work.

507. Dr Martin (France (OT)) presented SC-10-INFO-10, which provided the results of a proof-of-concept study on using deep-learning for automatic identification of images of marine benthic macro-invertebrate bycatch. The neural network developed in the study, although not yet efficient enough to obtain precise identifications, is able to provide detection and classification of organisms with a good level of accuracy considering the limited quality of the images used for training.

508. The SC thanked Dr Martin and the authors for sharing this work.

509. Dr Martin (France (OT)) presented SC-10-INFO-09, which introduced Bendima, a database for marine macro-invertebrate bycatch data designed to improve reproducibility in benthic ecology. The Bendima database was developed to manage benthic macro-invertebrate bycatch data from the scientific survey of the French Southern Ocean and Indian Ocean fisheries.

510. The SC thanked Dr Martin and the authors for sharing this work.

511. The SC welcomed the work presented by France (OT) on the development of VME indicator taxa image databases. The SC encouraged France (OT) to continue this work and encouraged CCPs to provide proposals on potential ways in which SIOFA could utilise such databases.

12.1.1 Presentation of the report of the Workshop on Scientific Observers forms (WS2024-OBS2)

512. The SC Chairperson presented SC-10-47, the Convener's Report of the SIOFA SC Workshop on Scientific Observer Forms (WS2024-OBS2).

513. The SC reviewed the recommendations from WS2024-OBS2.

514. The SC noted that future development of the observer logbooks should include a short form of instruction within the logbook spreadsheets to help with filling them out, e.g. using the "cell comment" function in Excel, in addition to external instructions and the observer manual.

515. The SC encouraged the use of dropdown fields or other means of data validation as much as possible in the observer forms during their future development, so as to facilitate data entry and prevent errors.

516. The SC noted that some CCPs may have more sophisticated means of electronic data entry and reporting than Excel files. The SC agreed that CCPs can continue to use their preferred electronic data entry and reporting methods, provided the data are reported to SIOFA in the required Excel format.

517. Regarding the trips that span across calendar years, the SC noted that there are different solutions available and noted that this could be dealt with at the Secretariat level rather than with a change in the forms.

518. The SC noted the WS2024-OBS2 discussions on the utility of reporting longline branchline information, and agreed to maintain it in the observer forms.

519. The SC agreed that the use and makeup of additional bycatch mitigation gear should be recorded.

520. The SC noted that additional information should be provided to describe details of escape ports in the pot fishery forms, both within the observer forms and as part of an instruction manual.

521. The SC noted that when recording observed effort in handline fisheries, observers should record start and end observation times.

522. The SC noted that more detailed information on the severity of seabird warp strikes,

and cross checks with ACAP recommendations on this subject, should be added to observer forms.

523. The SC noted the additional value in observers recording marine mammal depredation, as a fishery-independent record of depredation.

524. The SC noted the need to develop a list of ETP species, and ensure that this list is provided within observer manuals and ETP species observer logbook forms.

525. The SC tasked the Secretariat to develop a draft list of ETP species, building on the interim definitions developed at SC8 and endorsed by MoP10 and present it at a future meeting of the SC. The SC requested the Secretariat to use the finest taxonomic scale that is reasonably possible. The SC noted the importance of consistently using the FAO codes in the list. The SC encouraged CCPs to share their domestic ETP species lists with the Secretariat to assist the Secretariat when developing the draft list. The SC agreed to review and finalise a list of ETP species at a future meeting of the SC, to forward the list to the MoP for adoption, and to continue to propose updates to the list as appropriate.

526. The SC agreed that once an ETP species list has been adopted, the SC should hold discussions on potentially recording all observations related to ETP species in one observer form, so as to avoid double reporting. The SC noted that CMM 02(2023) would also need to be updated with the ETP species reporting requirements.

527. The SC agreed to task the Secretariat to provide regular ETP species reports once the list of ETP species is adopted. The SC noted that relevant information from the ETP reports could also be included in the SIOFA Ecosystem Summary.

528. The SC recommended that observers record the weight of gonads in grams.

529. The SC reviewed the list of changes proposed to observer logbooks detailed in Annex B of SC-10-47 and considered further changes based on the discussions above. The SC agreed that these changes would be best reflected as amendments to CMM 02(2023), rather than developing a new standalone observer CMM.

530. The SC recommended that the MoP adopt the proposed changes to CMM 02(2023) (Data Standards) as shown in **Annex D.3**.

531. The SC tasked the Secretariat to include further improvements to the observer logbooks, including introducing field validation routines and locking cells with the aim to reduce input errors.

532. The SC agreed to add a project for the development of a SIOFA scientific observer data collection manual to its workplan (OBS-2025-01).

533. The SC thanked the participants of the workshop; the consultants of Project SEC2022-OBS1, Dr Keith Reid and Mr Sihle Victor Ngcongo; and the invited expert, Ms Melanie Williamson for their contributions.

534. France (OT) presented SC-10-65, which provided its suggestions on Project OBS-2025-01: Observer training manual project and presented an introduction to MOODLE, an online observer training and manual tool that France (OT) has started to use. In particular, France (OT) suggested that the observer training manual must not only cover fish but also crustaceans and molluscs, that it would be beneficial to have a section in each chapter to explain to observers what the data are used for, reference to CCAMLR's updated tagging protocol as a standalone document rather than including parts of it in the SIOFA observer's manual, and inclusion of a sampling gear list with a section on gear maintenance.

535. The SC thanked France (OT) for its suggestions and for introducing its use of MOODLE.

12.1.2 Introduction to the FAO DSF project workshop on SIOFA observer training

536. The Science Officer presented SC-10-INFO-12, which provided a report of the training proceedings and outcomes from the DSF Project Observer Training Capacity Building Workshop, held in Port Louis, Mauritius on 3–5 December 2024. Key outcomes included requests for greater guidance on the detailed requirements for observer data from specific fisheries, details on requirements for debriefing and data checking routines for CCP Observers in SIOFA, the DSF Project to do more work on fish ID materials for key species, a clear explanation of observer coverage and data collection processes and requirements in SIOFA, and translation of information into languages used on vessels.

537. The SC thanked the FAO for organising the workshop and Mauritius for hosting it.

538. The SC encouraged the FAO and CCPs to continue to hold similar workshops in the future for the continued building of observer capacity in SIOFA. The SC noted the increase in requests for observers to collect genetic samples. The SC encouraged FAO to include genetic sampling techniques in future observer training workshops.

12.2 E-monitoring

539. Australia presented SC-10-58, which provided an update on the progress of the IOTC in allowing the use of e-monitoring for some or all scientific observer functions and the background on the process that the IOTC undertook to develop e-monitoring standards to ensure quality scientific data collection from EM. The IOTC e-monitoring standards have two key parts: the program standards and the system and data standards. The program standards specify the requirements for a regional e-monitoring program (REMP) within which will operate national e-monitoring programs for CPCs who voluntarily choose to use e-monitoring. Primarily, they outline which data can be collected and how these data relate to other data. The e-monitoring system and data standards cover aspects such as hardware, video formats, and training of e-monitoring analysts. In addition, there is also a voluntary set of standards, which is a vessel-specific schematic. Australia and other IOTC members are submitting data using e-monitoring, which has made more e-monitoring data available to the program and contributed to enhancing the reliability of such data.

540. Australia also informed the SC that it has conducted a domestic study of the impact of the use of e-monitoring on the quality of logbook data. The study found a significant improvement in the quality of data provided on logbooks, particularly the reporting of discards, the reporting of minor bycatch, and reporting of interactions with seabirds and turtles.

541. The SC recommended that the MoP consider adopting the IOTC e-monitoring standards (IOTC Resolution 23/08) for collecting scientific data on pelagic longline fisheries in SIOFA.

542. The SC recommended that the MoP task the SC to develop e-monitoring standards for gear types other than pelagic longlines, using the IOTC e-monitoring standards as a basis and that the MoP note the SC's intention to hold a Workshop on the Development of E-Monitoring Standards in early 2026.

543. The SC noted that when developing e-monitoring standards for gear types other than pelagic longlines, it would be valuable to consider the experience and practices of non-tuna RFMOs as well, such as SPRFMO or CCAMLR.

544. The SC agreed to include a workshop on advancing e-monitoring in the SC workplan. The SC noted that the FAO may hold a global workshop on e-monitoring for the deep-

sea RFMOs and agreed to take this into consideration when planning the content and timing of the SC's workshop so as to ensure complementarity between the two.

Agenda item 13. Climate change

545. The DSCC introduced SC-10-INFO-21, which provided recommendations for preparing for and responding to climate change impacts. The DSCC urged the SC to integrate climate change risk into management plans, protocols and strategies; incorporate a climate research priorities project, with dedicated funding, into the workplan; define the scope of climate-related advice from the SC; and review current CMMs to incorporate climate change data and precaution.

13.1 Observed and projected impacts of climate change

13.2 Scientific advice on the potential implications of climate change

13.3 Climate change projects

546. The SC noted that at SC9, Australia had proposed to lead a project on the assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts but that as part of the MoP's budget prioritisation process, funding was not available for this project. The SC agreed to keep the project in its workplan and welcomed the offer from Australia to prepare a paper on potential ways forward in this area and to present it at MoP12.

547. The SC noted that the development of harvest strategies for the key SIOFA species under the SIOFA-PAM Project would help the SC assess the potential impacts of climate change on these stocks and their robustness to the effects of climate change.

548. The SC noted that research on the potential effects of climate change on fisheries in shallower waters may be more advanced than that for deep-sea fisheries and requested CCPs to share any relevant research they may have, such as changes in diet or distribution.

549. The SC noted that research and data needs related to climate change could be discussed as part of the planned workshop on the window of opportunity for research vessels.

550. The SC discussed a paper submitted by China on the effects of climate change on purpleback flying squid (*Sthenoteuthis oualaniensis*) habitats in the northern Indian Ocean (SC-10-INFO-15) under agenda item 7.5.3. and welcomed China's offer to conduct further studies on the impact of climate change on SIOFA species together with other CCPs.

551. The Science Officer informed the SC that the impacts of climate change were taken up as part of several topics at the recent FAO DSF Project EAF Symposium, which he attended. He suggested that the outcomes and any follow-ups from the Symposium would be of interest to the SC and the MoP, and that there may be opportunities for SIOFA to participate in the EAF framework and showcase the work of SIOFA. (More information about the EAF Symposium can be found at https://eafm-symposium.nafo.int/.)

552. SIODFA noted that the alfonsino and orange roughy fisheries show clear effects on fish depth and overall catchability as a result of interannual climate variation, as indicated in its paper SC-10-INFO-19, and that climate change would have an effect on these cycles. SIODFA also noted that there are measures under discussion as part of the work on harvest strategies that are known to be highly effective for climate change mitigation and adaptation, namely multi-year catch accounting and

under/over provisions for catch limits.

Agenda item 14. Cooperation with external bodies

553. Agenda item 14 was chaired by SC Vice-Chairperson Dr Pavarot Noranarttragoon.

14.1 FIRMS coordination and work

554. An update on SIOFA activities related to the FAO Fisheries and Resources Monitoring System (FIRMS) is available in SC-10-INFO-02.

14.2 FAO ABNJ DSF project activities

555. Dr Tony Thompson, FAO DSF Project, presented SC-10-INFO-14, which provided an update on the DSF Project's work during 2023-2024 and upcoming work during 2025. Of specific interest were two items described below. Firstly, on capacity building, the DSF Project welcomed the Secretariat's presentation of SC-10-24, noting the capacity building objectives that are shared between SIOFA and the DSF Project, including the successful training workshop conducted in 2024 and described in SC-10-INFO-12. The DSF Project welcomed opportunities for continued cooperation with SIOFA to support these important capacity development activities including, but not limited to, improving deepwater shark identification and data reporting, and improving the collection, reporting and quality assurance processes for vessel data and observer data in deep sea fisheries. Secondly, the DSF Project made a request for fishing effort data by position and gear for fisheries using bottom contact gears, at 1º latitude by 1º longitude resolution, for the last 5 years to develop a global map of spatial bottom fishing effort.

556. The SC thanked the FAO for the update.

557. The SC welcomed the continued support from the DSF Project in capacity building activities and encouraged the Secretariat and interested CCPs to explore future opportunities especially in relation to deepwater sharks and data reporting and quality assurance processes.

558. The SC noted the data request by the FAO DSF Project for aggregated fishing effort data at 1º latitude by 1º longitude resolution for fisheries using bottom contact gears (SC-10-INFO 13). The SC further noted that requests for data at the same resolution were being progressed with the other RFMOs managing deep-sea fisheries as part of the FAO DSF Project to develop an effort-scaled global map of bottom fishing in the areas beyond national jurisdiction.

559. The SC encouraged the Secretariat and the CCPs to work with the FAO DSF Project to progress this data request, noting that all data-owners would be consulted in accordance with the SIOFA standard operating procedure for data use and data requests.

14.3 CCAMLR

560. An update on cooperation with CCAMLR is available in SC-10-INFO-02.

561. The exchange of scientific toothfish data with CCAMLR was discussed under agenda item 4.3.

Agenda item 15. Future work

15.1 Progress of EU funded science projects

562. The Science Officer provided an update on the progress status of projects funded by the SIOFA EU grants, as described in SC-10-INFO-02.

563. The SC expressed its gratitude to the EU for making those funding opportunities

available for enhancing the scientific work of SIOFA. The SC also thanked the Secretariat and members of the EU delegation, particularly the Science Officer and Dr Sebastián Rodríguez Alfaro, for their efforts to obtain EU funding.

15.2 Management and coordination of SIOFA science projects

564. The Science Officer provided an update on the progress status of other SIOFA science projects, as described in SC-10-INFO-02, which also described the tasks carried out by the Secretariat as requested by the SC and the MoP.

565. The Science Officer sought the SC's guidance on how to handle cases in which a CCP or consultant has presented a paper or project report to the SC and subsequently wishes to publish the paper or project report in an academic journal.

566. The SC agreed that papers and project reports presented to SIOFA could subsequently be published in academic journals and that this should be encouraged, provided the relevant SIOFA data confidentiality rules are complied with. The SC requested that prior to publication, any authors seeking to publish such papers and project reports circulate their manuscripts to any CCPs whose data have been used in the work and confirm with these CCPs that there are no confidentiality issues.

15.3 The SIOFA Performance Review

567. The Science Officer presented SC-10-36, which provided a summary of the recommendations proposed by the SIOFA Performance Review Panel in 2023 and adopted at MoP10, including revisions made by SC9, CC8, and MoP11. The Science Officer highlighted the recommendations relevant to the SC and invited the SC to provide further comments as appropriate.

568. The SC reviewed the implementation plan adopted by MoP11 and updated it with SIOFA's progress on the recommendations that concern the SC (SC-10-36-Rev1). The updated implementation plan is attached as **Annex I**.

569. The SC recommended that the MoP note that the SC had provided a summary of progress on the recommendations of the SIOFA Performance Review Panel in 2024 that were adopted at MoP11 (**Annex I**).

15.3.1 Capacity building

570. The Science Officer presented SC-10-24, a paper that was developed by the Secretariat following the request from the MoP to identify capacity building needs of developing States and provide options for addressing these needs. The paper was prepared through consultation with CCPs, who identified a range of needs spanning science, data, general capacity, compliance, and needs straddling data/compliance and data/science. The Science Officer presented potential options for addressing these needs and invited the SC to comment on capacity building needs/mechanisms related to science and straddling themes.

571. The SC noted the work done by the Secretariat in preparing the paper (SC-10-24) on options for facilitating and addressing the capacity building needs of CCP developing States as requested by the MoP.

572. The SC reviewed the potential options for addressing capacity needs and provided further comments.

573. The SC noted that a key area for capacity building should be the development of common data collection protocols, such as common measurement units, gonad staging techniques, otolith collection principles, etc., and training in the implementation of these protocols when collecting data. The SC noted that the ongoing observer harmonisation work, the proposed development of standardised observer manuals and identification guides, and the improvements to the website for

species identification and observer resources would contribute to meeting this need, while recognising that additional training and resources may be required.

574. The SC noted the importance of providing training to CCPs on completing SC-related scientific/administrative processes, such as conducting a BFIA in accordance with the BFIA standard and preparing a Fisheries Operation Plan.

575. Regarding the identification of deep-water sharks, the SC agreed that onboard species identification would be a more pressing priority than DNA barcoding training for capacity building.

576. Regarding the collection and analysis of biological samples of deep-water demersal species, the SC noted the value of providing training in genetic sampling using sterile techniques, especially using tools such as biopsy punches.

577. Regarding stock assessment studies for deepwater demersal species, the SC noted the need for more specificity about the areas in which capacity building is needed. The SC also noted that the Pacific Community (SPC) conducts stock assessment workshops and requested the Secretariat to communicate with the SPC Secretariat regarding potential participation in these workshops by SIOFA CCPs. The SC also noted additional stock assessment capacity building opportunities, including stock assessment training courses provided by the International Council for the Exploration of the Sea (ICES), and a stock assessment workshop that Spain, Japan and South Africa will provide for CCAMLR members.

578. The SC requested further guidance from the MoP on a number of aspects:
    a. Areas in which a certain level of capacity would be desirable/required (as it can be difficult for CCPs that lack capacity in a certain area to recognise and/or convey that lack of capacity);
    b. Timelines and prioritisation; and
    c. Potential funding sources beyond CCPs, such as multilateral banks.

579. The SC thanked the Secretariat for preparing the document and requested that the Secretariat present an updated version of the document at MoP11 that takes into consideration the above comments.

15.4 Implementation of Article 13 of the Agreement

580. The Executive Secretary presented SC-10-25, which provided an overview of the existing mechanisms to provide support to developing States under article 13 of the Agreement, focusing on the needs of the developing States bordering SIOFA, the cooperation between the parties, and the provision of financial assistance to eligible countries. SIOFA appears to be compliant with the Agreement. However, the Agreement has no clear definition of "developing States". The Secretariat used the World Bank's classification, but this could disadvantage small island States that might soon achieve high-income status while remaining dependent on the level of the previous supports that it would no longer be eligible to receive. To avoid this, it could be appropriate to introduce vulnerability indices that make it possible to identify the needs of any CCP more precisely and to draw up an action plan with each of them progressively.

581. The SC thanked the Executive Secretary for preparing the paper and asked him to present an updated version to the MoP with:
    a. an annex identifying the definition of "developing States" used in other RFMOs and other international fora as background information.
    b. removal of the reference to one of the roles of the SIOFA SC being to identify if any exploitation of fisheries in the SIOFA Area could have an effect on

developing States bordering the zone, as that is not part of the SC's Terms of Reference.

15.5 Scientific Committee workplan and budget

582. The Science Officer presented the draft SIOFA SC workplan for 2025–2029 and budget (SC-10-35-Rev1).

583. The Executive Secretary presented the draft Scientific Research Budget for 2026–2028 (SC-10-35-Rev1).

584. The SC reviewed and revised the draft SIOFA SC workplan for 2025–2029 with a list of proposed research activities and estimated budgets (summarised in **Annex J**; SC-10-35-01-Rev1) and the associated scientific budget in **Annex K**.

15.6 The 2026 meeting of the Scientific Committee

585. The SC recommended to the MoP that the next SC meeting, including any focused agenda topics, be held for 7 days from 23 to 31 March 2026.

586. The SC recommended that the MoP note that a 7-day meeting would be 1 day shorter than in recent years and that there is a risk of the SC not completing its agenda. However, the SC believed that this risk was a low one.

587. The SC emphasised the importance of CCPs' engagement in intersessional meetings and workshops to ensuring the success of a shortened SC meeting schedule.

588. Australia informed the SC that it may be able to host the SC meeting in 2026 and would provide an update at MoP12.

589. The SC thanked Australia for its preliminary offer to host the SC meeting in 2026.

590. China informed the SC of its intention to host an SC meeting in the future.

591. The SC thanked China for its preliminary offer to host an SC meeting in the future.

Agenda item 16. Other business

592. The SC Chairperson announced the 2025 recipients of the SIOFA Scientific Service Award, which was established to recognise individuals who have contributed to the scientific work of SIOFA for at least 5 years. The recipients were Steve Brouwer, Roberto Sarralde Vizuete, Alexis Martin, Ching-Ping Lu, Ren Fen Wu, Thierry Clot, Jules Selles, Keith Reid, and Evgeny Romanov.

593. The SC congratulated the recipients for their service and contributions to the work of the SIOFA SC.

16.1 Elections of the SC Chairperson and vice-chairperson

594. Agenda item 16.1 was chaired by SC Vice-Chairperson Dr Zhou Fang.

595. The SC noted that the first two-year term of SC Vice-Chairperson Dr Pavarot Noranarttragoon would end following SC10 and that he did not intend to serve a second term. The SC expressed its appreciation to Dr Noranarttragoon for his diligent efforts as an SC Vice-Chairperson.

596. Dr Noranarttragoon thanked the SC for the opportunity to serve as an SC Vice-Chairperson and expressed his gratitude to the Science Officer in particular for his assistance.

597. The SC recommended that the MoP note that the SC agreed to elect Ms Charlotte Chazeau (France (OT)) as an SC Vice-Chairperson.

598. Ms Chazeau thanked the SC for electing her and looked forward to working with them as an SC Vice-Chairperson.

599. The SC noted that the term of contract for the current SC Chairperson would expire following MoP12.

600. As there were no nominations for a new SC Chairperson from among CCPs and recognising the significant progress that the SC has made under the leadership of the current SC Chairperson, Mr Alistair Dunn, the SC recommended that the MoP extend his term for two years as this would ensure stability and continuity in advancing the SC's work over this time period.

601. The SC Chairperson thanked the SC and looked forward to being considered for a further term.

16.2 Other business

602. The SC recommended that the MoP note that the creation of the Science Officer position has greatly enhanced the SC's ability to conduct its work and provide advice. The SC strongly recommended that this position be renewed when the existing contract expires in 2026 and that Dr Marco Milardi be retained in that position.

603. The SC thanked Guillaume Massé, Solene Avignon, Jean-Baptiste Dal Pont and all the staff at the Concarneau Marine Station for organising and hosting the meeting, and for organising the tour of the facilities and visit to the port.

604. The SC expressed its appreciation to Gigi and Christine of Tradition Bretagne for providing excellent catering during the coffee and lunch breaks every day.

605. The SC thanked the SC Chairperson for his hard work and leadership, and for ensuring a collegiate and collaborative atmosphere at the meetings.

606. The SC Chairperson thanked the SC for their cooperation and support.

607. The SC adopted the report of its tenth meeting.

608. The SC Chairperson brought the meeting to a close on 26 March 2025 at 14:58 local time.

Annex A – SC10 List of Registered Participants

Delegation	Title	First name	Last name	Position	Organisation	Virtual	In person
Australia	Mr	Trent	Timmiss	HoD	ABARES		✓
Australia	Dr	Tim	Emery	Advisor	ABARES	✓	
Australia	Dr	Krystle	Keller	Advisor	ABARES	✓	
Australia	Dr	Lyn	Goldsworthy	Advisor	Utas	✓	
China	Dr	Heng	Zhang	HoD	East China Sea Fisheries Research Institute, China Academy of Fisheries Science		✓
China	Dr	Jiaqi	Wang	Alternate	Shanghai Ocean University		✓
China	Dr	Jun	Yu	Advisor	Shanghai Ocean University		✓
China	Dr	Zhou	Fang	Alternate	Shanghai Ocean University		✓
China	Dr	Yue	Jin	Alternate	Yellow Sea Fisheries Research Institute, Chinese Academy of Fishery Science		✓
China	Dr	Chong	Sun	Alternate	China Ocean Fisheries Association	✓	
China	Dr	Tinglin	Li	Alternate	China Ocean Fisheries Association	✓	
Cook Islands	Dr	Stephen	Brouwer	HoD	Ministry of Marine Resources Cook Islands		✓
Comoros	Mr	Mohamed	Ali Mohamed	HoD	Contact Point Comoros-SIOFA		✓
Comoros	Mr	Farid	Ahamada	Alternate			✓
Comoros	Mr	Andrei	Afanasev	Alternate	BSMC Co., Ltd Centum Leaders Mark 1801, APEC-ro 17, Haeundae Gu, Busan, Republic of Korea		✓
Comoros	Mr	Vladislav	Prudchenko	Alternate	BSMC Co., Ltd Centum Leaders Mark 1801, APEC-ro 17, Haeundae Gu, Busan, Republic of Korea		✓
EU	Dr	Sebastián	Rodríguez Alfaro	HoD	Marine Sciences/EU		✓
EU	Mr	Roberto	Sarralde Vizuete	Alternate	IEO		✓
EU	Ms	Vanessa	Rojo Méndez	Advisor	IEO		✓
FR-OT	Dr	Alexis	Martin	SC HoD	MNHN		✓
FR-OT	Ms	Charlotte	Chazeau	SC Alternate	MNHN		✓
FR-OT	Ms	Adèle	Moisan	MoP HoD	DGAMPA		✓
FR-OT	Mr	Nicolas	Gasco	Advisor	MNHN		✓

Delegation	Title	First name	Last name	Position	Organisation	Virtual	In person
FR-OT	Ms	Marion	Kauffmann	Advisor	MNHN		✓
FR-OT	Dr	Clara	Peron	Advisor	MNHN	✓	
FR-OT	Ms	Audrey	Bourdette	Advisor	TAAF		✓
FR-OT	Ms	Anna	Bardon	Advisor	MNHN		✓
Japan	Dr	Takehiro	Okuda	Head of Delegation Scientific Committee	Fisheries Resources Institute, Japan Fisheries Research and Education Agency		✓
Japan	Dr	Midori	Hashimoto	SC Alternate	Fisheries Resources Institute, Japan Fisheries Research and Education Agency		✓
Japan	Mr	Taisuke	Iwano	Head of Delegation	Fisheries Agency Government of Japan	✓	
Japan	Mr	Kazuki	Tsuda	Alternate	Fisheries Agency Government of Japan	✓	
Korea	Mr	Jeongseok	Park	Head of Delegation	Distant Water Fisheries Resources Division, National Institute of Fisheries Science	✓	
Korea	Dr	Hyejin	Song	Alternate	Distant Water Fisheries Resources Division, National Institute of Fisheries Science	✓	
Mauritius	Mr	Kawol	Doorvanand	Senior Technical Officer	Ministry of Agro-industry, Food Security, Blue Economy and Fisheries		✓
Seychelles	Mr	Rodney	Govinden	HoD	Seychelles Fisheries Authority		✓
Seychelles	Ms	Sabrena	Lawrence	Alternate	Seychelles Fisheries Authority		✓
Seychelles	Ms	Cindy	Assan	Expert	Seychelles Fisheries Authority		✓
Seychelles	Mr	Vincent	Lucas	Expert	Seychelles Fisheries Authority	✓	
Seychelles	Ms	Elisa	Radegonde	Expert	Seychelles Fisheries Authority	✓	
Seychelles	Mr	Daniel	Bristol	Expert	Seychelles Fisheries Authority	✓	
Chinese Taipei	Dr	Ching-Ping	Lu	Head of Delegation	National Taiwan Ocean University		✓
Chinese Taipei	Mr	Ren-Fen	Wu	Alternate	Overseas Fisheries Development Council		✓
Chinese Taipei	Mr	Chia-Chun	Wu	Alternate	Fisheries Agency	✓	

Delegation	Title	First name	Last name	Position	Organisation	Virtual	In person
Chinese Taipei	Ms	Chia-Ti	Li	Delegate	Overseas Fisheries Development Council	✓	
Chinese Taipei	Ms	Chia-Jung	Wang	Delegate	Fisheries Agency	✓	
Thailand	Mr	Weerapol	Thitipongtrakul	HoD	Department of Fisheries, Thailand		✓
Thailand	Dr	Pavarot	Noranarttragoon	Adviser	Department of Fisheries, Thailand		✓
Observers Mozambique	Dr	Rosa	Simbine	Director of Fisheries and Aquiculture Division	Mozambique Oceanographic Institute	✓	
Observers ACAP	Dr	Megan	Tierney	HoD	Agreement on the Conservation of Albatrosses and Petrels (ACAP)	✓	
Observers CCAMLR	Dr	Steve	Parker	Science Manager	CCAMLR	✓	
Observers DSCC	Mr	Barry	Weeber	HOD	DSCC		✓
Observers DSCC	Ms	Natalie	Andersen	Alternate	Deep Sea Conservation Coalition		✓
Observers DSCC	Dr	Lissette	Victorero	Alternate	Deep Sea Conservation Coalition	✓	
Observers SIODFA	Mr	Charles	Heaphy	HoD	SIODFA		✓
Observers SIODFA	Dr	Ross	Shotton	Alternate	SIODFA	✓	
Observers FAO	Dr	Anthony	Thompson	Observer	FAO - DSF Project		✓
Observers FAO	Dr	Keith	Reid	Advisor	FAO Deepsea Fisheries Project	✓	
Observers CITEB	Dr	Evgeny	Romanov	Project Leader	CITEB (Centre technique de recherche et de valorisation des milieux aquatiques)	✓	
Invited Experts	Dr	Anne-Elise	Nieblas	Director	COOOL	✓	
Invited Experts	Dr	Dominique	Cowart	Consultant	COOOL	✓	
Invited Experts	Ms	Kerrie	Robertson	Consultant	ADIRA consulting	✓	
Invited Experts	Dr	Glen	Holmes	Consultant	The PEW Trust	✓	
Invited Experts	Dr	Sophie	Mormede	Consultant	soFish Consulting	✓	
Invited Experts	Dr	Simon	Hoyle	Consultant	Hoyle Consulting	✓	
Invited experts	Mr	Paul	Clerkin	PhD student	VIMS	✓	
Invited experts	Dr	Jan	McDowell	Professor	VIMS	✓	
Invited experts	Dr	Sylvain	Bonhommeau	Researcher	IFREMER	✓	
Invited experts	Dr	Nathan	Walker	Acting Director,	Fisheries New Zealand	✓	

Delegation	Title	First name	Last name	Position	Organisation	Virtual	In person
				Science and Information			
SIOFA SC Chair	Mr	Alistair	Dunn	Director	Ocean Environmental		✓
SIOFA SC Vice Chair	Dr	Pavarot	Noranarttragoon	Senior expert	Marine Fisheries Research and Development Division Department of Fisheries, Thailand		✓
SIOFA SC Vice Chair	Dr	Zhou	Fang	Alternate	Shanghai Ocean University		✓
Rapporteur	Mr	Alex	Meyer	Rapporteur	Urban Connections		✓
SIOFA Secretariat	Mr	Thierry	Clot	Executive Secretary	SIOFA Secretariat		✓
SIOFA Secretariat	Mr	Pierre	Peries	Data Officer	SIOFA Secretariat		✓
SIOFA Secretariat	Mr	Johnny	Louys	Compliance Officer	SIOFA Secretariat	✓	
SIOFA Secretariat	Dr	Marco	Milardi	Science Officer	SIOFA Secretariat		✓

10th Annual Meeting of the SIOFA Scientific Committee

Marine Station of the National History Museum, Concarneau, France
Chair: Mr Alistair Dunn
Vice-Chairs: Dr Pavarot Noranarttragoon, Dr Zhou Fang

1. Opening

1.1. Welcome from the Scientific Committee Chair

1.2. Introduction of participants

1.3. Introduction to the meeting facilities and meeting arrangements

The SC Chair will open the meeting and welcome delegations of the SIOFA SC, observers, and invited experts. The organisation of the meeting, chairing and local arrangements will be discussed. The Secretariat will introduce the meeting facilities and the other meeting arrangements.

2. Administrative arrangements

2.1. Adoption of the agenda

2.1.1. Confirmation of meeting documents

2.1.2. Appointment of rapporteurs

2.2. Scientific Committee meeting report arrangements

The Provisional Agenda for the Tenth Meeting of the SC was prepared and distributed in accordance with Rules of Procedure.

The SC Chair will request the meeting adopt the agenda for the meeting, confirm the list of meeting documents, and appoint rapporteurs. Note that the Secretariat will supply a meeting rapporteur for all plenary sessions of SC10. The SC may also appoint additional rapporteurs from the SC delegations to assist the SIOFA rapporteur in developing the report text. Once an agenda item has been closed, the draft report text will be made available to the meeting participants for comment. Delegates comments on the report text will be included. The final draft report will then be checked and signed off by the SC Chair, and then be made available to participants for report adoption.

3. Fisheries Reports

3.1. Annual National Reports 2025

3.2. CCP annual National Fisheries Reports

Presentation of National Reports by CCPs, followed by questions and discussion. CCPs should prepare a short presentation on their National Report for the meeting.

3.3. Guidelines for the submission of National Reports

Review of the SIOFA Guidelines for submitting National Reports

3.4. Summary of SIOFA fisheries

3.5. Overview of SIOFA fisheries 2025

3.6. CCP fishery characterisations

3.7. Ecosystem and Fisheries Summaries 2025

Presentation of the Overview of SIOFA fisheries, Ecosystem Summary, and Fisheries Summaries for the species not covered in Agenda Item 7 (i.e., hapuka (Polyprion spp., HAU), wreckfish (Polyprion americanus, WRF) and hapuku wreckfish (Polyprion oxygeneios, WHA), and common mora (Mora moro, RIB)).

4. Data Standards, Access and Dissemination

4.1. Annual catch and effort data submission

4.2. Lost gear reported under CMM 02(2023) Annex A

The Secretariat will provide an update on information submitted on lost gear against CMM 02(2023) (Data Standards) Annex A.

4.3. Exchange of scientific toothfish data with CCAMLR

4.4. Developments to the data section of the SIOFA website

4.5. The SIOFA standard operating procedure for data use and data requests

The Secretariat will report on the outcomes of exchange of scientific toothfish data with CCAMLR, developments to the data section of the SIOFA website, and the SIOFA standard operating procedure for data use and data requests.

4.6. Proposals for revisions to CMM 02(2023) (Data Standards)

Discussion of any proposals for revisions to CMM 02(2023) (Data Standards).

5. SIOFA Bottom Fishing Impact Assessment

5.1. Review of the SIOFA Bottom Fishing Impact Assessment Standard

SC-EXTRA2 recommended that SC10 review the SIOFA Bottom Fishing Impact Assessment Standard

5.2. Review of new BFIAs

The SC will review any new BFIA submitted by CCPs

6. SIOFA Precautionary Approach and Management (PAM)

6.1. Development of the Precautionary Approach Framework

Project PAM-2024-01: Presentation of progress on the development of the SIOFA Precautionary Approach Framework including commentary from the PAM2024-01 expert reviewers

6.2. Development of biological reference points

Project PAM-2024-02: Presentation of progress on the development of the SIOFA Biological Reference Points including commentary from the PAM2024-02 expert reviewers

6.3. Joint MoP-SC Workshop on the Development of Harvest Strategies (WS2024-HSS) and SC Workshop to progress the SIOFA Precautionary Approach and Management Projects (WS2025-PAM)

The SC Chair will present the report of the Joint MoP-SC Workshop on the Development of Harvest Strategies (WS2024-HSS) and recommendations from MoP10, as well as the convener report of the SC Workshop to progress the SIOFA Precautionary Approach and Management Projects (WS2025-PAM)

6.4. Development of harvest strategies for Orange Roughy and Toothfish

Project PAM-2024-03: Presentation of progress on the development of SIOFA harvest strategies for ORY and TOT including commentary from the PAM2024-03 expert reviewers

6.5. Harmonisation of toothfish management measures across the SIOFA Area

The MoP has requested advice on an appropriate toothfish catch limit for the proposed Southern Indian Ridge management area as well as harmonisation of toothfish management measures across the SIOFA Area.

7. Stock assessments and advice

7.1. Orange roughy

7.1.1. Descriptive characterisation

7.1.2. Stock monitoring and data collection (including acoustics)

7.1.3. Stock assessment

7.1.4. Updates to the fisheries summary

Project ORY-2023-01: Age and growth of orange roughy (Hoplostethus atlanticus) (final report). Project ORY-2023-02: Orange roughy (Hoplostethus atlanticus) acoustics (final report).

Presentation of the report on the ORY stock assessment (Project ORY-2024-01). Consideration of new information on stock status, stock monitoring, and assessment of ORY in the SIOFA Area and update the fisheries summary report for this species.

7.2. Alfonsino

7.2.1. Descriptive characterisation

7.2.2. Stock monitoring and data collection

7.2.3. Stock assessment

7.2.4. Updates to the fisheries summary

Project ALF-2024-01: Presentation of the report of the Alfonsino Age protocol Development. Consideration of new information on stock status, stock monitoring, and assessment of ALF in the SIOFA Area and update the fisheries summary report for this species.

7.3. Toothfish

7.3.1. Descriptive characterisation

7.3.2. Stock monitoring and data collection

7.3.3. Stock assessment

7.3.4. Updates to the fisheries summary

Project SER2022-TOP2: Stock structure of Patagonian toothfish (Dissostichus eleginoides) (final report).

Project TOT-2024 ‑ 02: Presentation of the report of the Evaluation of the toothfish monitoring program based on tagging. Consideration of new information on stock status, stock monitoring, and assessment of TOT in the SIOFA Area and update the fisheries summary report for this species.

7.4. Oilfish

7.4.1. Descriptive characterisation

7.4.2. Stock monitoring and data collection

7.4.3. Stock assessment

7.4.4. Updates to the fisheries summary

Consideration of new information on stock status, stock monitoring, and assessment of oilfish in the SIOFA Area and update the fisheries summary report for these species.

7.5. Other species

7.5.1. Quantitative assessment of Portuguese Dogfish

Project DWS-2024-01: Development of a formal quantitative assessment of Portuguese dogfish catch and determination of the level of sustainable catch (a continuation of DWS ‑ 2023 ‑ 01).

7.5.2. Lobster

The SC will consider the recommendations from SC-EXTRA2 and provide advice on VME indicator species thresholds and potential long-term management frameworks for the fishery

7.5.3. Other species

7.5.4. Updates to the fisheries summaries

Consideration of new information on stock status, stock monitoring, and assessment of other species in the SIOFA Area and update the fisheries summary report for these species.

8. Bycatch and incidental captures

8.1. Deepwater chondrichthyans

8.1.1.   Review of progress against CMM 12(2024) (Sharks), including development of precautionary bycatch limits

8.1.2.   Protocols and guidelines for mitigating impact of fishing gear

Project DWS-2024-02: Development of protocols and guidelines for fishing gear to mitigate the ongoing impact of SIOFA fisheries on vulnerable deepwater sharks, including the definitions of leader and wire and other leader types for longline gear, and the application of move‐on rules for demersal longline and trawl fisheries to protect vulnerable deepwater sharks.

Project DWS-2023-02: Identification and trends in Deepwater Sharks, on a census of deep-sea sharks caught during one trip of a bentho-pelagic factory trawler to Walters Shoal and the SWIO Ridge in early 2024.

8.2. Development of a SIOFA skate tagging programme

Discussion on the development of the SIOFA skate tagging programme

8.3. IOTC bycatch

The Secretariat will report on IOTC bycatch of SIOFA species in the SIOFA Area

8.4. Seabirds, mammals, and bycatch of other species of concern

8.4.1.   Observations of marine mammals interacting with fishing gear

The Secretariat will report on observations of marine mammals interacting with fishing gear

8.4.2.   Seabird mitigation measures

Consideration of any proposals for seabird mitigation measures

8.5. Discards at sea

The MoP has requested the SC providing advice on the extent of discarding in SIOFA and the impacts of restrictions on this practice

9. Vulnerable Marine Ecosystems (VME)

9.1. Report of VME encounters

The Secretariat will report on any notified VME encounters

9.2. VME data and the setting VME of encounter thresholds

Consideration of proposals for recording VME data and the setting VME of encounter thresholds including whether to record of VME taxa by line or line segment

9.3. Revisions of the list of VME taxa and to the VME taxa ID guides

Consideration of any proposals for the revision of the list of VME taxa and to the VME taxa ID guides

9.4. Register of SIOFA VME areas

Consideration of the register of notified SIOFA VME areas

9.5. Management options for preventing SAIs on VMEs

Consideration of any proposals for management options for preventing SAIs on VMEs

10. Marine protected areas

10.1. Monitoring protected areas

Project PAE2022-MPA1: Protocols to designate and evaluate MPAs in the SIOFA Area (final report)

10.2. Protected area designation

Conveners report from the Workshop on Report of the WS2024-PAD. MoP-11-29-Rev2 paper.

11. New and Exploratory Fisheries and Research cruises

11.1. New and exploratory fisheries

Consideration of any proposals for new and exploratory fisheries

11.2. Research cruises

Consideration of the Nansen research cruise sailing plan and any other proposals for new research cruises.

Reports from any research cruises undertaken in previous years

12. Scientific Observers

12.1. Observer Harmonisation

Project SEC2022-OBS1: Establish a framework for scientific observation of SIOFA fisheries (final report)

12.1.1. Presentation of the report of the Workshop on Scientific Observers forms (WS2024-OBS2)

12.1.2. Introduction to the FAO DSF workshop on SIOFA observer training

12.2. E-monitoring

13. Climate change

13.1. Observed and projected impacts of climate change

The SC will consider papers that report on projected impacts of climate change and the practices of other RFMOs

13.2.   Scientific advice on the potential implications of climate change

The SC will consider advice on the potential implications of climate change on SIOFA fisheries

13.3.   Climate change projects

The SC will consider proposal for projects that relate to climate change (MoP10 report, paragraph 159)

14. Cooperation with external bodies

14.1.   FIRMS coordination and work

The Secretariat will report on the FIRMS project

14.2.   FAO ABNJ DSF activities

The Secretariat will report on FAO ABNJ DSF activities

14.3.   CCAMLR

The Secretariat will report on cooperation with CCAMLR

15. Future work

15.1.   Progress of EU funded science projects

The Secretariat will report on progress of EU funded science projects

15.2.   Management and coordination of SIOFA science projects

The Secretariat will report on progress of SIOFA science projects

15.3.   The SIOFA Performance Review

Consideration of the SIOFA Performance Review

15.3.1.   Capacity building

The Secretariat will report on options for facilitating and addressing the capacity building needs of CCP developing States

15.4.   Implementation of Article 13 of the Agreement

As requested by the MoP, the SC will have a standing agenda item on the implementation of Article 13 of the Agreement

The Secretariat will report on a paper that outlines the existing mechanisms to provide support to developing States and other relevant information relating to Article 13

15.5.   Scientific Committee workplan and budget

The SC will develop the SC workplan and budget.

15.6.   The 2026 meeting of the Scientific Committee

The SC will propose the dates for SC11.

16. Other business

16.1. Elections of the SC chairperson and vice-chairperson

As the term of contract for the current SC Chair expires in June 2025, the SC will consider future Chairing arrangements and consider either electing a new Chair or proposing an extension to the current SC Chairs appointment. One of the Vice-Chairs first two-year term is coming to an end, and will need to be renewed for a further term or a new Vice-Chair needs to be elected.

16.2. Other business

Annex C – List of papers presented at SC10

Document code	Title
SC-10-ADM-01	Registration form
SC-10-ADM-02	Template for meeting documents
SC-10-ADM-03	Meeting Draft Provisional Agenda
SC-10-ADM-04	Meeting Revised Provisional Agenda
SC-10-ADM-05-Rev1	Meeting Provisional Schedule
SC-10-01	(REP) 2025 Annual National Report Australia
SC-10-02	(REP) 2025 Annual National Report China
SC-10-03	(REP) 2025 Annual National Report Cook Islands
SC-10-04	(REP) 2025 Annual National Report European Union
SC-10-05	(REP) 2025 Annual National Report France OT
SC-10-06	(REP) 2025 Annual National Report Japan
SC-10-07	(REP) 2025 Annual National Report Republic of Korea
SC-10-08	(REP) 2025 Annual National Report Mauritius
SC-10-09	(REP) 2025 Annual National Report Seychelles
SC-10-10	(REP) 2025 Annual National Report Chinese Taipei
SC-10-11	(REP) 2025 Annual National Report Thailand
SC-10-12	(REP) 2025 Annual National Report Comoros
SC-10-13	(REP) 2025 Annual National Report India
SC-10-14-Rev1	Overview of SIOFA Fisheries 2025
SC-10-15-Rev1	SIOFA Ecosystem Summary 2025
SC-10-16-Rev1	SIOFA Fisheries Summary: orange roughy (*Hoplostethus atlanticus*) 2025
SC-10-17-Rev1	SIOFA Fisheries Summary: alfonsino (*Beryx* spp., *B. splendens*, *B. decadactylus*) 2025
SC-10-18-Rev1	SIOFA Fisheries Summary: toothfish (*Dissostichus* spp., *D. eleginoides*, *D. mawsoni*) 2025
SC-10-19-Rev1	SIOFA Fisheries Summary: oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) 2025
SC-10-20-Rev1	SIOFA Fisheries Summary: hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2025
SC-10-21-Rev1	SIOFA Fisheries Summary: common mora (*Mora moro*) 2025
SC-10-22	Summary of transboundary CCAMLR and SIOFA toothfish tagging data 2025
SC-10-23	Trend analysis for SIOFA toothfish 2025
SC-10-24	Options for facilitating and addressing the capacity building needs of CCP developing states
SC-10-25	Existing mechanisms for addressing capacity building under Article 13 of the SIOFA Agreement
SC-10-26	Revisions to the SIOFA VME taxa ID list (and Annex 1 of CMM 01 if needed)
SC-10-27	Status of progress towards establishing and operating a SIOFA observer programme

Document code	Title
SC-10-28	Live-document on history of harvest strategies development in SIOFA + glossary (start with the WSHSPA-2023-01 and add HSMO-1 paper documents)
SC-10-29	Data and security audits, status in 2025
SC-10-30	SIOFA database structure
SC-10-31	Review and improvement of Data and Documents release process
SC-10-32	IOTC bycatch in SIOFA area
SC-10-33	Report on data from past cruises of the Nansen Project in the SIOFA Area
SC-10-34	MoP request of SC advice on CMM 15(2024) para 19, relevant to longline spacing in Del Cano
SC-10-35-Rev1	Draft SIOFA Scientific Committee Workplan 2024-2028 and budget
SC-10-36	SIOFA Scientific Committee tasks from the SIOFA Performance Review 2023
SC-10-37	SEC2022-OBS1 Final Report
SC-10-38	SER2022-TOP2 Final Report
SC-10-39	PAE2022-MPA1 Final Report
SC-10-40	ORY-2023-01 Final Report
SC-10-41	ORY-2023-02 Final Report
SC-10-42	ORY-2024-01 Draft report
SC-10-43	DWS-2023-02 Draft report
SC-10-44	WS2024-HSS Conveners Report
SC-10-45	SC-EXTRA2 Report
SC-10-46	WS2024-PAD Conveners Report
SC-10-47	WS2024-OBS2 Conveners Report
SC-10-48	WS2025-PAM Conveners Report
SC-10-49	Update on the ecological risk assessment of deepwater chondrichthyan species
SC-10-50-Rev1	Hapuka fishery BFIA
SC-10-51-Rev1	Hapuka fishery Fishing Operation Plan
SC-10-52	COM Lobster fishing logbook proposal
SC-10-53	Proposal to amend CMM 02 (2023) (Data Standards)
SC-10-54	Scientific fisheries survey report in SIOFA convention area from China in 2023-2024 cruise
SC-10-55	Brief introduction of squid fishery history of China in Indian Ocean
SC-10-56-Rev1	Footprint of Chinese squid fishing 2003-2024
SC-10-58	Update on progress of implementing electronic monitoring in the Indian Ocean Tuna Commission (IOTC)
SC-10-59-Rev1	Draft work plan for R/V Nansen cruise in the Indian Ocean (20 November – 10 December 2025)
SC-10-60-Rev1	Tagging Methodology for Southern Indian Ocean Fisheries Agreement Area
SC-10-61-Rev1	Bottom Fishing Impact Assessment for the Mauritian trawler in the SIOFA Convention Area
SC-10-62	Review of the CMS report "Technical Mitigation Techniques to Reduce Bycatch of Sharks: There is no Silver Bullet"
SC-10-63	Bird abundance training tool

Document code	Title
SC-10-64	Killer whales of the Saint-Paul and Amsterdam islands (southern Indian Ocean) photo-identification catalogue 2024
SC-10-65	Observer training manual project for project OBS-2025-03
SC-10-66	Photo-identification catalogue interface
SC-10-67	Seabird identification guide, a photographic guide for observers at sea in the southern Indian Ocean
SC-10-68	Collecting data on bird bands
SC-10-69	Petrels, albatrosses and seals entanglement in lost gear
SC-10-70	Tagging procedure in SIOFA & the French EEZ of Kerguelen and Crozet: tools and ideas to improve the process
SC-10-71	Tori line simulator tool to train observers
SC-10-72	Distribution pattern of Portuguese dogfish and other deepwater sharks and identification of potential biological and ecological Portuguese dogfish sensitive areas
SC-10-73	Preliminary analysis on marine mammal interactions in SIOFA fisheries targeting Patagonian toothfish from the EU-Spain longline fleet
SC-10-74	Temporal trends analysis in support of understanding the population dynamics of Portuguese dogfish in the SIOFA Subareas 2, 4 and 5
SC-10-75	Preliminary CPUE standardization analyses using oilfish longliner fisheries data from 2017 to 2023
SC-10-76	Reproductive Characters Observation and Gonadosomatic Index Estimation of Oilfish and Escolar in The Indian Ocean
SC-10-77	Review of the paper "Fine-scale behaviour and population estimates suggest low exposure but do not exclude high sensitivity to bycatch for Endangered sooty albatrosses"
SC-10-78	Review of the paper "Gauging the threat: exposure and attraction of sooty albatrosses and white-chinned petrels to fisheries activities in the Southern Indian Ocean"
SC-10-79	Seabird identification guide, a photographic guide for observers at sea in the subtropical Indian Ocean
SC-10-80-Rev1	Revised Bottom Fishing Impact Assessment for Japanese bottom trawl fisheries in SIOFA convention area
MoP-11-29-Rev2	Conservation and Management Measure for New Benthic Protected Areas (BPAs) in the Agreement Area (New BPAs)
SC-10-INFO-01-Rev1	Guidelines for the submission of Annual National Reports to the SIOFA Scientific Committee
SC-10-INFO-02	SIOFA Secretariat support to the SC and MoP in 2024-2025
SC-10-INFO-03-Rev1	SIOFA Data submission summary (2023 data submitted in 2024)
SC-10-INFO-04	Data exchanges with other organizations
SC-10-INFO-05	Report on lost gear under SIOFA CMM 02 (from 2023 fishing activities)

Document code	Title
SC-10-INFO-06	Report on observations of whales and interactions with fishing gear (from 2023 fishing activities)
SC-10-INFO-07	Report on notifications of VME encounters (2023 fishing activities, up to submission deadline)
SC-10-INFO-08	Fishery biology of purpleback squid, *Sthenoteuthis oualaniensis*, in the northwest Indian Ocean
SC-10-INFO-09	Bendima: a database for marine macro-invertebrate bycatch data designed to improve reproducibility in benthic ecology
SC-10-INFO-10	Using deep-learning for automatic identification of images of marine benthic macro-invertebrate bycatch: a proof of concept
SC-10-INFO-11	Data Curation, Fisheries and Ecosystem-based Management: The Case Study of the Pecheker Database
SC-10-INFO-12	Report of Training Proceedings and Outcomes from the Deep-sea Fisheries Project Observer Training Capacity Building Workshop
SC-10-INFO-13	Request for deep-sea fishing effort data by position and gear for fisheries using bottom contact gears
SC-10-INFO-14	FAO Deep-Sea Fisheries (DSF) Project – Overview of activities 2024-2025
SC-10-INFO-15	The Effects of Climate Change on *Sthenoteuthis oualaniensis* Habitats in the Northern Indian Ocean
SC-10-INFO-16	Habitat Suitability of the Squid *Sthenoteuthis oualaniensis* in Northern Indian Ocean Based on Different Weights
SC-10-INFO-17	Development of protocols and guidelines for fishing gear to mitigate the ongoing impact of SIOFA fisheries on vulnerable deepwater sharks
SC-10-INFO-18	SIOFA-PAM Projects: Timeline and Consultation Opportunities
SC-10-INFO-19	A Second Look: Alfonsino Fishing In The SIOFA Area To 2024 And Its Management
SC-10-INFO-20	Integrating Science and Policy for Recognising Seamounts as Vulnerable Marine Ecosystems
SC-10-INFO-21	Preparing for and Responding to Climate Change Impacts
SC-10-INFO-22	Enhancing the Protection of VMEs, including all Seamounts
SC-10-INFO-23	Update on ACAP Activities and Advice on Reducing the Bycatch of Albatrosses and Petrels in SIOFA Fisheries
WS2025-PAM-01	Determination of Biological Reference Points (BRPs) for key SIOFA fish stocks (PAM-2024-02)
WS2025-PAM-02	Development of Harvest Strategies for key SIOFA fish stocks (PAM-2024-03)

Annex D – SC10 recommendations on CMMs for consideration by the CC and MoP

D.1. Amendments to CMM 01(2024) (Interim Management of Bottom Fishing) Annex 1

CMM 01 (2024) Annex 1 - SIOFA VME indicator taxa (in bold)

Taxonomic level	Taxon name	FAO Code
Domain	Bacteria	
	Chemosynthetic organisms	CXV
Phylum	**Bryozoa**	BZN
Phylum	**Xenophyophorea**	XEF
Phylum	**Brachiopoda**	BRQ
Phylum	**Porifera**	PFR
Class	**Hexactinellida**	HXY
Class	**Demospongiae**	DMO
Phylum	**Cnidaria**	CNI
Order	**Actiniaria**	ATX
Order	**Alcyonacea**	AJZ
Order	**Anthoathecata**	AZN
Order	**Antipatharia**	AQZ
Order	**Gorgonacea**	GGW
Order	**Scleractinia**	CSS
Order	**Pennatulacea**	NTW
Order	**Zoantharia**	ZOT
Family	**Stylasteridae**	AXT
Phylum	Echinodermata	
Class	**Crinoidea**	CWD
Order	**Euryalida**	OEQ
Order	**Cidaroida**	CVD
Phylum	Anellida	
Family	**Serpulidae**	SZS
Phylum	Arthropoda	
Family	**Bathylasmatidae**	BWY
Phylum	Tunicata	
Class	**Ascidiacea**	SSX
Phylum	Hemichordata	
Class	**Pterobranchia**	HET

D.2. Amendments to CMM 12(2024) (Sharks) Annex 1

CMM 12(2024) Annex 1: List of "**high risk**" (highlighted in bold) and "of concern" deep sea shark species

FAO code	English common name	French common name	Scientific name
APD	Smallbelly catshark	Holbiche artouca	*Apristurus indicus*
BZL	Narrowhead catshark		*Bythaelurus tenuicephalus*
BZO	**Bach's catshark**		***Bythaelurus bachi***
CYO	Portuguese dogfish	Pailona commun	*Centroscymnus coelolepis*
CYP	**Longnose velvet dogfish**	**Pailona à long nez**	***Centroselachus crepidater***
DCA	**Birdbeak dogfish**	**Squale savate**	***Deania calceus***
DWG	**Cristina's skate**		***Bathyraja tunae***
ETP	**Smooth lanternshark**	**Sagre nain**	***Etmopterus pusillus***
EZT	**Blue-eye lanternshark**		***Etmopterus viator***
EZU	Whitecheek lanternshark		*Etmopterus alphus*
ETB	**Blurred smooth lantern shark**		***Etmopterus bigelowi***
GUP	**Gulper shark**	**Squale-chagrin commun**	***Centrophorus granulosus***
GUQ	**Leafscale gulper shark**	**Squale-chagrin de l'Atlantique**	***Centrophorus squamosus***
CPU	**Little gulper shark**	**Petit squale-chagrin**	***Centrophorus uyato***
HCR	Pacific longnose chimaera	Chimère à nez rigide	*Harriotta raleighana*
HXC	**Frilled shark**	**Requin lézard**	***Chlamydoselachus anguineus***
HXN	Bigeyed sixgill shark	Requin-vache	*Hexanchus nakamurai*
<u>JBY</u>	**<u>Dusky snout catshark</u>**		***<u>Bythaelurus naylori</u>***
LMO	**Goblin shark**	**Requin lutin**	***Mitsukurina owstoni***
QUK	**Shortspine spurdog**	**Aiguillat épinette**	***Squalus mitsukurii***
RFI	**Paddlenose chimaera**		***Rhinochimaera africana***
SDQ	**Longsnout dogfish**	**Squale-savate à long nez**	***Deania quadrispinosa***
SDU	**Arrowhead dogfish**	**Squale-savate lutin**	Deania profundorum
SCK	**Kitefin shark**	**Squale liche**	***Dalatias licha***
SSQ	**Velvet dogfish**		***Zameus squamulosus***
RZZ	**Southern sleeper shark**		***Somniosus antarcticus***
YSM	**Largespine velvet dogfish**	**Pailona austral**	***Scymnodon macracanthus***
ZZC	**Dark-mouth chimaera**		***Chimaera buccanigella***
ZZD	**Falkor chimaera**		***Chimaera didierae***
ZZE	**Seafarer's ghost shark**		***Chimaera willwatchi***

D.3. Amendments to CMM 02(2023) (Data Standards)

CMM 02(2023)[2]

Conservation and Management Measure for the Collection, Reporting, Verification and Exchange of Data relating to fishing activities in the Agreement Area
(Data Standards)

The Meeting of the Parties to the Southern Indian Ocean Fisheries Agreement;

RECALLING that Article 6(1) (f) of the *Southern Indian Ocean Fisheries Agreement* (the Agreement) calls on the Meeting of the Parties to develop rules for the collection and verification of scientific and statistical data, as well as for the submission, publication, dissemination and use of such data;

FURTHER RECALLING that Articles 10(1)(c) and 11(3) set out the duties relevant to the collection and provision of data and related processes for Contracting Parties and flag CCPs respectively;

RECOGNISING the importance of developing comprehensive arrangements for data collection, reporting, verification and exchange of data to assist the Scientific Committee in performing its functions as outlined in Article 7 of the Agreement;

NOTING the relevance of Articles 10(e) and 14 of the *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA) which call on States to cooperate through regional fisheries management organisations to agree on the standards for the collection, reporting, verification and exchange of data on fisheries for the stocks, and the specifications and format for the data to be provided and to cooperate in their scientific research;

CONSIDERING the provisions set forth in the *Resolution on data collection concerning the high seas in the Southern Indian Ocean,* adopted by the Conference on the *Southern Indian Ocean Fisheries Agreement* in the Seychelles from 13-16 July 2004;

NOTING the importance of data collection and catch reporting for the purposes of ensuring scientific stock assessment and implementing an ecosystem approach to fisheries management;

NOTING the recommendation by the Third meeting of the Scientific Committee to improve the collection of sharks catch information and the submission of scientific observer data; and

FURTHER NOTING that the Meeting of Parties has adopted policies and procedures for the maintenance of data confidentiality (CMM 03(2016));

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[2] CMM 02(2023) (Data Standards) supersedes CMM 2022/02 (Data Standards).

ADOPTS **the following conservation and management measure (CMM) in accordance with Article 6 of the Agreement**:

Application

1.   This CMM applies to all Contracting Parties, cooperating non-Contracting Parties and participating fishing entities (CCPs).

2.   This CMM prescribes the standards for the collection, reporting, verification, and exchange of data related to fishing activities by vessels fishing in the SIOFA Area of Application (the Agreement Area) that are flying the flag of a CCP. These data standards shall assist the Meeting of the Parties to fulfil its objectives under the Agreement insofar as it relates to assessing the state of the fisheries within SIOFA's competence, including the status of target and non-target species and the impact of fishing on the marine environment.

Terminology

3.   The following definitions apply to this CMM including its annexes:

   a.   'other species of concern' means those species as may be defined by the Scientific Committee from time to time.

   b.   'National Report' means the report defined in paragraph-9 of this CMM.

Vessel Catch and Effort Data

Collection of data

4.   CCPs shall ensure that data on fishing activities, including for target, non-target and associated and dependent species such as marine mammals, marine reptiles, seabirds or 'other species of concern', are collected from vessels flying their flag that are fishing in the Agreement Area in accordance with the relevant sections of Annex A.

5.   CCPs shall collect vessel catch and effort data on a haul-by-haul basis, with the exception of handline fishing, where CCPs shall collect vessel catch and effort data on an operation [3] basis.

Data collection and submission

6.   CCPs shall report to the Secretariat, by 31 May each year, the data collected under paragraphs 4 and 5 for the previous calendar year, in accordance with the format prescribed in the corresponding annexes.

7.   CCPs shall provide to the Secretariat, by 31 May each year, annual catch summaries for all species/groups caught in the Agreement Area during the previous calendar year. The catch summaries shall include the following information:

   a.   Calendar year (e.g. 2015)

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[3] An operation is the daily activity of a main vessel (including its dories), where catch is the daily catch and effort is the number of active ~~fishermen~~ fishers per day and the number of lines fished per day.

b. FAO statistical area (e.g. FAO87)

c. Species/group name (common name and scientific name)

d. Species/group code (FAO3-alpha code 19, EG ORY) (if available)

e. Annual catch total - tonnes raised to 'live' weight.

8. To assist in data collection CCPs engaged in, or intending to engage in, fishing pursuant to CMM 01(2024) shall implement on-board all fishing vessels flying their flag the FAO Identification guide to the deep–sea cartilaginous fishes of the Indian Ocean[4]. Where available the use of Smartforms may be considered.

National report

9. Following the entry into force of this CMM, CCPs shall provide to the Scientific Committee, at least 30 days prior to the commencement of each ordinary meeting, an annual National Report of their fishing, research and management activities in accordance with the following:

a. For the first report: the National Report shall include details of activities of the previous five calendar years;

b. For all reports thereafter: the National Report shall include details of activities of the previous calendar year; and

c. In either case, the National Report shall take into account the guidelines prepared by the Scientific Committee for the preparation of such reports.

Historical Data

10. To assist with the development of a bottom fishing footprint and stock assessments, each CCP shall provide the Secretariat with all historical catch and effort, and if available observer data for vessels flying their flag and fishing in the Agreement Area at any time during period 2000-2015 and any previous years where available in accordance with annex A and annex B to the extent applicable. Any State or fishing entity that becomes a Party to the Agreement, a CNCP or PFE after the date this CMM is adopted shall provide their historical data to the Secretariat within 12 months of becoming Party to the Agreement, or becoming a CNCP or PFE.

11. Where possible, CCPs are encouraged to provide relevant, reliable historical data for species caught in waters under their national jurisdiction where such information would assist in understanding the status of the stocks and the impacts of fishing on all target species, non-target and associated and dependent species and the marine environment within the Agreement Area.

Scientific Observer Data

12. All CCPs shall implement national scientific observer programs to collect from activities undertaken by vessels flying their flag:

a. Vessel information, effort and catch data for its fishing activities in the

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[4] Ebert, D.A. and Mostarda, E. 2013. Identification guide to the deep–sea cartilaginous fishes of the Indian Ocean, FishFinder Programme, FAO, Rome. 76 p

Agreement Area, including target, non-target and associated and dependent species including marine mammals, marine reptiles, seabirds or 'other species of concern';

b. Biological or other data and information relevant to the management of fishery resources in the Agreement Area, as specified in this CMM, or as identified from time to time by the Scientific Committee or through processes identified by the Meeting of the Parties; and

c. Relevant scientific information related to the implementation of the provisions of the CMMs adopted by the Meeting of the Parties.

13. The function and tasks of the scientific observer are described in Annex D.

14. CCPs shall, through their National Report, provide to the Scientific Committee an annual observer programme implementation report which should include summary sections covering: observer training, program design and coverage, type of data collected, and any problems encountered during the previous calendar year.

15. CCPs shall, for all observed trips, collect observer data in accordance with the relevant sections of Annex B. All observer data collected by CCPs shall be reported to the Secretariat by 31 May each year for the previous calendar year.

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.

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.

Data Verification

18. CCPs shall:

a. ensure that fishery data are verified through an appropriate system of data verification mechanisms;

b. develop, implement, and improve data verification mechanisms, which may include:

i. Position verification through vessel monitoring systems;
ii. Independent monitoring, including scientific observer programs and approved electronic observer programs,[5] to verify industry data on catch, effort, catch composition (target and non-target), discards and other details of fishing operations;
iii. Vessel trip, landing and transhipment reports; and

iv. Port sampling.

c. provide to the Scientific Committee, through their National Report, an annual

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[5] Approved electronic observer programs refers to those programs that meet the SIOFA agreed standard and have been reviewed by the Scientific Committee and approved by the Meeting of the Parties as being capable of meeting the data requirements in this CMM.

data verification report which should provide information regarding their development and implementation of data verification mechanisms.

Format for data submission

19.   CCPs shall report all data required to be reported by this measure to the Secretariat in accordance with the formats described in this CMM, including its annexes.

20.   Specifications for the submission of data:

   a.   times, latitudinal /longitudinal/ information and units of measure are to be reported in accordance with the format described in Annex C;

   b.   Species are to be described using the FAO 3 letter Species Codes;[6]

   c.   Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes;[7] and

   d.   Types of fishing vessels are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes.[8]

Review

21.   This CMM should be reviewed periodically by the Scientific Committee and the Meeting of the Parties, taking into account new information or data requirements as may be decided.

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[6] https://www.fao.org/fishery/en/collection/asfis/en
[7] https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/
[8] https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/

Standards for the Collection, Reporting, Verification and Exchange of Data
Annexes

List of Annexes:

Annex A - Vessel Catch and Effort Data

Annex B - Observer Data

Annex C - Specifications for the Exchange of Data

Annex D – Function and tasks of the scientific observer

Annex E - Protocol for documenting whale interaction in deep-sea demersal longline fisheries

Annex A

Vessel Catch and Effort Data

1. Contracting Parties, CNCPs and PFEs shall ensure that the following data on fishing
   activities are collected in the Agreement Area:

For all demersal fishing vessels flying their flag:

Data Set - Fishing activities General (Trip)
Vessel flag CCP (ISO 3-apha) Name of vessel International radio call sign (if any) Vessel Registration number (flag CCP) Lloyd's / IMO /IHS Fairplay Number (if allocated) Vessel size: Gross Tonnage (Gross register tonnage may be used if GT is not available, or both) Name of person filling in the data
Weight Conversion Factor Species Processing type Conversion factor = live weight/processed weight
Haul Information Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
Set Start date and Time (Based on Coordinated Universal Time (UTC)) Recorded at start and end of fishing For longline vessels - record at start and end of setting, in addition to start and end of haul Date format (YYYY.MON.DD) Time format (hh.mm)

Position at start and end of fishing
Latitude
Longitude
 	
    For longline vessels: position is recorded at the start and end of setting
    For bottom trawl fishing: "start" is defined as when the groundrope first touch the bottom, and "end" is when the groundrope leaves the bottom at the beginning of hauling.
    For midwater trawl: "start" is defined as when the fishing gear is at target fishing depth, "end" is when the tow haul begins.
 	
    For handline fishing: record the position of the vessels at the start and at the end of the fishing operation

Bottom Depth (m) As recorded at the start and end of fishing.
Fishing / gear depth (m) As recorded at the start and end of fishing.

For trapping/potting, Actual Fishing / gear depth (m) as recorded at start is required.
Species retained Estimated catch retained on board by taxa (FAO species/group code/scientific name) in green weight (kg).
Species Discarded An estimation of the amount of living marine resources discarded by taxa, if possible, in green weight (kg)

Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern'
Presence: Yes / No
For each species caught
    •   Taxa name
    •   Number alive
    •   Number dead or injured

Incidental bycatch of VME indicator taxa Presence: Yes / No For each species caught   • Taxa name

For all pelagic fishing vessels targeting SIOFA species flying their flag:

Data Set - Fishing activities General (Trip) Vessel flag **CCP** (ISO 3-apha) Name of vessel International radio call sign (if any) Vessel Registration number (flag CCP) Lloyd's / IMO /IHS Fairplay Number (if allocated) Vessel size: Gross Tonnage (Gross register tonnage may be used if GT is not available, or both) Name of person filling in the data
Weight Conversion Factor Species Processing type Conversion factor = live weight/processed weight
Haul Information Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
Set Start date and Time (Based on Coordinated Universal Time (UTC)) Recorded at start of fishing Date format (YYYY.MON.DD) Time format (hh.mm)
Position at start of fishing Latitude Longitude
Species retained Estimated catch retained on board by taxa (FAO species/group code/scientific name) in live weight (kg)
Species Discarded

An estimation of the amount of living marine resources discarded by taxa, if possible, in live weight (kg)
Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern' Presence: Yes / No For each species caught •   Taxa name •   Number alive •   Number dead or injured

2. Contracting Parties, CNCPs and PFEs shall ensure that the following gear-specific data on fishing activities, as applicable, are collected from all fishing vessels flying their flag in the Agreement Area.

Data Set – Gear
Trawl   Cod end mesh Size (mm)   Trawl technique: Type of trawl: (S)ingle, (D)ouble or (T)ripple
Demersal Longline   Type of longline (Spanish, Trotline, Autoline)   Total length (m)   Type of bait   Hook size (mm)   Hook spacing (m)   Hook code or make Length of line (m)   Number of hooks set   Number hooks per cluster (if Trotline)   Number of hooks lost (attached to lost sections of line)
Pelagic Longline   Total length (m)   Total number of hooks in the set   Number of hooks between floats   Number of light-stick used in the set   Type of bait used in the set   Sea surface temperature at noon   (Length of floating line)   (Length of branch line)   (Distance between branch lines)
Trap/Pot   Pot type   Type of line: Dropline or longline Length of line (m)   Pot spacing (m)   Number of pots set   Number of pots lost   Type of bait
Dahn/Drop Line/   Total number of hooks in the set   Total number of line lifts in the set   Number of hooks lost   Hook code or make   Type of leader used   Type of bait used
Handline   Number of ~~fishermen~~ fishers involved   Number of lines per fisher   ~~Number of line lifts per fisherman~~   Number of hooks per line

Squid Jigging
Power of fish lamp (kw)
Use of the fish finder (Y/N)
Number of fishers
Number of line machines
Fishing duration by hand (h)
Fishing duration by machines (h)
Number of hooks on per line

Annex B

Observer Data

1. Contracting Parties, CNCPs and PFEs shall, for all observed trips, collect and provide to the Secretariat the data contained in this Annex in accordance with the format set out below.

2. Contracting Parties, CNCPs and PFEs shall, where appropriate, ensure that observers are briefed and provided with documented length-frequency and biological sampling protocols and the specific priorities for the trip for the sampling activities documented below.

3. Contracting Parties, CNCPs and PFEs shall endeavour to collect tissue, otolith and/or stomach samples in accordance with any research programs developed by the Scientific Committee.

Hierarchies for Observer Data collection

Fishing Operation Information
All vessel and tow / set / effort information.

Reporting of Catches
Record time, weight of catch sampled versus total catch or effort (e.g. number of hooks), and total numbers of each species caught
Identification and counts of endangered, threatened or protected species (ETP), seabirds, mammals, reptiles (e.g., turtles), sensitive benthic species and vulnerable species
Record numbers or weights of each species retained or discarded Record instances of depredation, where appropriate

Biological Sampling
Check for presence of tags
Length-frequency data for Target species (FAO species code)
Basic biological data (sex, maturity) for Target species (FAO species code)
Length-frequency data for main by-catch species
Otoliths (and stomach samples, if being collected) for Target species (FAO species code)
Basic biological data for by-catch species
Biological samples of by-catch species (if being collected)
Take photos

Observer Data Sections Common to all fisheries

Data Set - Observer data
Trip Details Trip Number Cruise details (start and end dates - YYYY.MON.DD) Date report is generated (UTC) Current vessel flag CCP (ISO 3-apha) Name of vessel
Observer Details Observer name and ID Nationality (ISO 3-apha) Employing organisation Contact name in organisation (Address/email/fax) Boarding location (UNLOCODE, if applicable or Latitude/Longitude) Boarding Date (UTC:YYYY.MON.DD) Disembarkation location (UNLOCODE, if applicable or Latitude/Longitude) Disembarkation date (UTC:YYYY.MON.DD) Time Zone (UTC +-)
Length Frequency Data Representative and randomly sampled length-frequency data shall be collected for the target species (FAO species code) Length data shall be collected and recorded at the most precise level appropriate for the species (cm or mm and whether to the nearest unit or unit below) and the type of measurement used (total length, fork length, or standard length) shall also be recorded. Where possible, total weight of length-frequency samples should be recorded, or estimated and the method of estimation recorded Where possible, Observers should determine and record sex of measured fish to generate length-frequency data stratified by sex Where possible, representative and randomly sampled length-frequency data should be collected for other main by-catch species

Biological Sampling
Species
Length (mm or cm) and the type of length measurement used.
      Skates and rays:
      • Maximum disk width shall be measured
      Sharks
      • Appropriate length measurement to be used should be selected for each species. As

a default, total length should be measured.
Weight (kg)
Sex (male, female, immature (optional), unsexed (optional))
Maturity stage (optional) and criteria/schedule used (optional)
Gonad weight (g) (optional)
Otoliths

Seabird & Marine Mammals abundance observation (to be recorded for each operation and for all gears/fisheries):

Operation ID (Set ID, tow ID)
At Setting or At Hauling (At setting/At hauling/Not applicable)
Seabirds present in observation area? (Yes/No/Not Observed)
Species
Estimated numbers of abundance (by species)

Operation ID (Set ID, tow ID)
Marine Mammals present in observation area? (Yes/No/Not Observed)
Species
Estimated numbers of abundance (by species)

Observed catch (to be recorded for each operation and for all gears/fisheries, record weight or number according to the fishery)

Operation ID (Set_ID, Tow_ID)
Observer ID

FAO ASFIS Species code

Species retained
Total Number retained
Weight retained (kg)

Species   discarded
Total Number discarded
Weight discarded (kg)
Number discarded alive
Number discarded dead

Number or weight of fish lost (if applicable)
Number or weight of fish cut off (if applicable)
Number of fish depredated (if applicable)
Comments

Incidental bycatch of ETP species (seabirds, mammals, turtles or 'other species of concern')
The following data shall be collected for all seabirds, mammals, turtles, and other
species of concern caught in fishing operations as much as possible:

- Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult) and size
- Estimated species abundance around fishing vessel
- Species interactions with fishing gear
- Count of the number of each species caught per tow or set
- Fate of bycatch animal(s) (retained or released/discarded)
- If released, life status (vigorous, alive, lethargic, injured, dead) upon release
- If injured, what was the cause of injury?
- If dead, then collect information or samples for onshore identification in accordance with pre-determined sampling protocols. Where this is not possible, observers may be required to collect sub-samples of identifying parts, as specified in biological sampling protocols
    - **o** Record the type of interaction (hook/line entanglement/warp strike/net capture/other) if other, describe
- Sex of each individual for taxa where this is feasible from external observation, e.g. pinnipeds, small cetaceans or *Elasmobranchii* species
- identify any circumstances or actions that may have contributed to the bycatch event? (E.g. tori line tangle, high levels of bait loss)

Tag releases
The following data shall be reported for all tagged fish, seabird, mammal, or reptile

Tag type, wording, and colour
Tag number
Date and time of tagging
Species
Animal length
Type of length
Animal sex (F=female, M=male, I=indeterminate, D=not examined)

Position (Lat/Lon) of release
Animal status at release (injured/uninjured)

Tag Recoveries
The following data shall be collected for all recovered fish, seabird, mammal or reptile tags if
the organism is dead, to be retained, or alive:

- Name of observer
- Name of vessel
- International radio call sign (if any)

- Vessel flag CCP (ISO 3-apha)
- Collect, label (with all details below) and store the actual tags for later return to the tagging agency
- Species from which tag recovered
- Tag colour
- Tag wording and type of tag (spaghetti, archival)
- Tag numbers
- Date and time of capture (UTC)
- Location of capture (Lat/Lon, to the nearest 1 minute)
- Animal length / size (cm or mm) with description of what measurement was taken (such as total length, fork length, etc.)
- Sex (F=female, M=male, I=indeterminate, D=not examined)
- Maturity stage
- Gonad weight (g)
- Tag Site Condition
- Samples retained
- Tag photo (include in cruise report)
- Whether the tags were found during a period of fishing that was being observed (Y/N)

Bird Bands
The following data shall be reported for all seabird bands retrieved or spotted

- Species
- Band identifier
- Date and time of observation (UTC)
- Location of observation (Lat/Lon, to the nearest 1 minute) or Operation ID
- Type of interaction (with gear, with vessel, no interaction with gear or vessel)
- Photo taken? (Yes/No)
- State (likely to survive, injured, dead)

Bird interaction with vessel and collisions (excluding fishing gear)

- Species
- Number of birds
- Date and time of observation (UTC)
- Location of observation (Lat/Lon, to the nearest 1 minute)
- ~~Type of interaction (with gear, with vessel, with mitigation device)~~
- Photo taken? (Yes/No)
- State (likely to survive, injured, dead)
- Vessel activity (steaming, fishing, other)
- Type of interaction (collision, entanglement, bird found landed)
- Description of the interaction (including location of the bird on the vessel)
- Presence of fog (yes/no)
- Wind speed (kts) and bearing (°)

- Sea state (Beaufort)
Description of vessel lighting at the moment of the observation

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Bycatch mitigation gears details

Streamer line

General Streamer Line Description
Number of streamer lines regularly set
Streamer line position (port, starboard, stern)
Streamer line length (m)
Streamer length min/max (m)
Attached height above water (m)
Distance between streamers (m)
Number of streamers
Streamer design (single or paired)
Aerial extent of line (m)
Method used to assess aerial extent
Streamer material
Streamer line diameter (mm)
Streamer colours
Streamer line over bait entry position? (y/n/u)
Distance from stern to bait entry point (m)
Towed object (Y/N)
Horizontal distance from bait entry point to streamer line (m)

Bird baffler

Other bycatch mitigation device
Trotline cetacean exclusion device

Photo taken of the mitigation gear?

Interactions with Vulnerable Marine Ecosystems (VME)

General information
Name of observer
Name of vessel
Date
Trip number
Set number

VME location
Start and end positions of all gear deployments and/or observations.
(Latitude/longitude)
Depth(s) fished (m)

Fishing Gear
Indicate fishing gears used at each location

VME Taxa

Presence: Yes/No
a) Species (identified taxonomically as far as possible or accompanied by a photograph where identification is difficult).
b) An estimate of the quantity (weight (kg) or volume (m3)) of each listed benthic species caught in the tow (and the unit of measurement).
c) An overall estimate of the total quantity (weight (kg) or volume (m3)) of all invertebrate benthic species caught in the tow(and the unit of measurement).
d) Where possible, provide the live or dead status for corals
e) Where possible, and particularly for new or scarce benthic species which do not appear in ID guides, whole samples should be collected and suitably preserved for identification on shore.
e) Collect representative biological samples from the entire VME catch. (Biological samples shall be collected and frozen when requested by the scientific authority in a Contracting Party). For some coral species that are under the CITES list photographs should be taken.

Other sessile benthos taxa

Presence: Yes/No
For each catch of taxa
 Scientific names (identified to the finest taxon level possible)
 FAO code (if available)
 Estimation of the amount caught

Processing Details and Conversion Factors (CF)

Operation ID (setID, towID)
Name of observer
Species Code (FAO species code)
Processing Code
Length Type
Minimum Length (cm)
Maximum Length (cm)
Number of individuals
Total Green Weight (kg)
Weighting Method
Processed Weight (kg)
Size Grade
Quality Grade
Conversion Factor

Observer data sections that are gear and fishery specific

For trawl fishing activities ONLY

Gear details
Net ID
~~Net~~ Gear type (ISSFCV)

Headrope length (m)
Ground rope length (m)
Ground rope bobbins present?
Ground rope bobbins material (steel or rubber)
Ground rope bobbins weight (combined)
Bobbin diameter (cm)
Otter board to wing length (m)
Horizontal Opening, i.e. wingspread (m)
Vertical Opening (m)

Codend mesh
Mesh size (cm),
codend circumference (cm),
Orientation
Mesh type (diamond, square, etc)

Otter board
Type, weight (kg)

Net design
Net design description including make, model etc

Selectivity device present? (Y/N)
Selectivity device description
Net monitoring cables present? (Y/N)

Trawl details
Trawl Number
Bycatch Mitigation Gear used (Y/N)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID

~~Gear~~
Trawl type: Research or Commercial (R/C)
Observed (Yes/No)
Target Species (FAO species code)
Date Start (YYYY.MON.DD)
Date Finish (YYYY.MON.DD)

Time net deployed (hh:mm)
Time net retrieved (hh:mm)

Start and End Fishing

For bottom trawl "start" is defined as when the groundrope is on the bottom, "end" is when the hauling starts.
For midwater trawl "start" is defined as when the fishing gear is at target fishing depth, "end" is when the hauling starts.
Time (hh:mm)
Latitude
Longitude
Trawl Depth (m)
Bottom Depth (m)

Other
Offal discharged during shooting (Y/N)
Offal discharged during hauling (Y/N)
Trawl speed (knots)
~~Horizontal opening (m)~~
Total catch (kg)

Observed catch composition
~~Observer ID~~
Was Haul observed for fish/invertebrate by-catch (Y/N):
Record the total weight of all sub-samples for this shot (kg):

Species:
~~FAO species code~~
~~Scientific name~~
~~Estimated retained catch weight (kg) or number of individuals~~
~~Estimated discarded catch weight (kg) or number of individuals~~

Bycatch mitigation measures employed:
~~Were bird scaring (tori) lines in use? (Yes/No)~~
~~Were bird bafflers in use? (Yes/No)~~

Trawl ~~warp~~ gear strike (to be monitored for 15 minutes immediately after the net has been deployed) (optional):
~~Trawl number (optional)~~
~~Name of observer (optional)~~
Start observation time (hh:mm) (optional)
End observation time (hh:mm) (optional)

Species
Nb of light strikes
Light strikes contact place:
  Number on windward ward
  Number on leeward ward

Number on monitoring cable
 Number on net

Nb of heavy strikes
Heavy strikes contact place:
 Number on windward ward
 Number on leeward ward
 Number on monitoring cable
 Number on net

Heavy strike fate:
 Number aerial
 Number sea surface
 Number submerged
State of the bird(s) after strike
 Number Likely to survive
 Number Injured
 Number Dead
 Number Unknown
Number of heavy warp strikes (record for Albatross, Giant Petrels, White chinned petrels, other petrels):

~~Air~~
~~Water~~
~~Sinker~~

~~Seabird abundance observation:~~
~~Seabirds present in observation area (y/n)~~
~~Estimated numbers of abundance (by species)~~

For Longline fishing activities ONLY

Longline Description:
Longline Type (ISSCFG codes~~FFSSCV~~)
Period in which the gear was used (YYYY.MON.DD)
Start and end date (YYYY.MON.DD)
Target Species (FAO species code)

Main Line:
Material
Diameter (mm)

For Integrated Weight Lines (IWL):

Integrated weight (g/m)

For non-IWL:

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Weight spacing (m)
Number of measured weights
Weight type
Average weight (kg)
Standard deviation (kg)

Branch Lines:
Material
Length (~~M~~m)
Spacing (m)

Branchline weights (kg)
Branchline weight distance from hook (m)

Hooks
Type (e.g.: J shaped, Circular, etc.)
Manufacturer
Marking (vessel mark, leave blank for none)
Model name
~~Make~~
Size (~~inch~~mm)
~~Total length (mm)~~
Shank (mm)
Gape (mm)
~~Throat (mm)~~
~~Front length (mm)~~
Usual setting position
Line off bottom (m) (optional for pelagic longline)
Hooks off bottom (m) (optional for pelagic longline)
Method of baiting (manual/automatic)
Automatic baiting equipment (make and model)

Hook sinkers
Size (g)
Position from hook (mm)
Offal dumping position (port, starboard, stern)
Longline setting position (port, starboard, stern)
Offal dumping during hauling (never, occasionally, always)
Propeller rotation direction (clockwise/anti-clockwise)
Detail the weight and distance between the line weights for the longline system
used
  Single (Auto) Line (kg:m)
  Double (Spanish) Line (kg:m)
  Trotline (vertical droppers/trots attached to a mainline) (kg:m)

~~General Streamer Line Description~~
~~Vessel equipped with a streamer line (y/n)~~
~~Number of streamer lines regularly set~~
~~Streamer line position (port, starboard, stern)~~

~~Streamer line length (m)~~
~~Streamer length min/max (m)~~
~~Attached height above water (m)~~
~~Distance between streamers (m)~~
~~Number of streamers~~
~~Streamer design (single or paired)~~
~~Aerial extent of line (m)~~
~~Method used to assess aerial extent~~
~~Streamer material~~
~~Streamer line diameter (mm)~~
~~Streamer colours~~
~~Streamer line over bait entry position? (y/n/u)~~
~~Distance from stern to bait entry point (m)~~
~~Towed object (Y/N)~~
~~Horizontal distance from bait entry point to streamer line (m)~~

Daily setting observations
Set Number (as referenced in catch and effort log)
Set Type: Research or Commercial (R/C)
Bycatch Mitigation Gear used (Y/N)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID

Longline Type Code (FSSCV)
~~Trotline cetacean exclusion device used (Y/N)~~
Date of observation (YYYY.MON.DD)

Setting information
Vessel setting speed (knots)
Number sets unobserved since last set

Start and End setting for each haul
Date (YYYY.MON.DD)
Time (hh:mm)
Latitude
Longitude
Bottom Depth (m)
Total length of longline set (km)
Total number of hooks for the set

For each Observation
Start date (YYYY.MON.DD)
Start time (hh:mm)
End date (YYYY.MON.DD)
End time (hh:mm)

Details of Longline Setting

Main line length (m)
Number of hooks set
Number of Baskets/Magazines Set
Number of hooks per Basket/Magazine
Percentage hooks baited
Distance between branches (m)
Distance of hooks off bottom (m) (optional for pelagic longline)
Bait species (FAO species code)
Deck lights during setting (On, Off)
Streamer lines used (Yes, No)
Number of streamer lines used Offal dumping during
setting (Yes, No)
Bait entry position (Port, Starboard, Stern)
Clip on Interval (seconds)
Setting Speed (Line setter)

Daily hauling observations
Set number
Date of observation (YYYY.MON.DD)

Hauling Information
Number of hooks observed for seabird and fish by-catch (tally
period)
Offal dumped during hauling (Yes / No)

Interactions with marine mammals

Data is to be collected in accordance with the protocol set out in annex E. For each haul and each species of depredating whales (killer whales *Orcinus orca* and sperm whales *Physeter macrocephalus)*:

 - Priority 1 data to be collected include:

1.   Presence/absence data: Presence / Absence / Not observed;

2.   When presence, photo-identification data: photographs of specific body parts (for killer whales: dorsal fin, saddle patch and eye patches; for sperm whales: tail flukes) visible when whales come to the surface.

 - Priority 2 data to be collected include:

1.   Estimates of the number of individuals present around the vessel in the vicinity of the fishing gear.

 - Priority 3 data to be collected include:

1.   Information about whether or not whales interact with the gear;

2.   Estimate of the time of arrival of whales in the vicinity of the gear.

Gear lost

Number of sections lost
Number of hooks lost that were attached to lost sections of the
longline Number of other hooks lost (excluding hooks attached to
lost sections)

Observed catch composition
Was Haul observed for fish/invertebrate by-catch (Y/N):
Estimate percentage of the haul observed for by-catch (%)

- *Species*
- Species code (FAO species code)
- Total retained catch weight (kg) or total number
- Total discarded catch weight (kg) or total number

- *Species Retained*
- Observed number retained Observed number retained with tags

- *Species Discarded*
- Observed number discarded
- Observed number discarded dead
- Observed number discarded alive
-
- *Species Lost*
- Observed number lost/dropped off at surface
-
- *Specimen cut off (if possible)*
- Yes / No
- For each species caught
- Taxa name
- Number alive
- Number dead or injured

For Trapping/Potting Fishing Activities ONLY

Gear type
pot type (with drawing)
mesh size (mm)
Material

Funnel position
Orientation
Aperture (cm)
Number of chambers
Escape port present (y/n)
Dimensions (cm) of escape port
Weights attached?

Min Weight (kg)
Max Weight (kg)

Processing Details and Conversion Factors (CF)
Haul Number
Name of observer
Species Code (FAO species code)
Processing Code
Length Range (Mininum Maximum)
Number of individuals
Live Weight (kg)
Processed Weight (kg)
Grade
Conversion Factor

Set and haul details
Set Number
Bycatch Mitigation Gear used (Y/N)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID

Date of observation (YYYY.MON.DD)
Set Type: Research or Commercial (R/C)
Target species (FAO species code)
Offal dumped during setting (Yes / No)
Offal dumped during hauling (Yes / No)

Start and End setting. Repeat for hauling
Date (YYYY.MON.DD)
Time (:mm)
Latitude
Longitude
Bottom depth (m)

Gear Details
Length of line (m)
Type of line Pot spacing (m)
Bait type

Setting
Number of pots set
Number of pots observed

Hauling
number of pots hauled
number of pots observed

Was Haul observed for fish/invertebrate by-catch (Y/N):
Estimate percentage of the haul observed for by-catch (%):

For Dahn/Drop lining activity ONLY

Dahn/Dropline Description
Line Type
Period in which the gear was used () Start and end date
Target species (FAO species code)

Main Line
Material
Diameter (mm)
Integrated weight (g/m)

Hooks

Type (e.g.: J shaped, Circular, etc.)
Manufacturer
Marking (leave blank for none)
Model name
~~Make~~
Size (~~inch~~mm)
~~Total length (mm)~~
Shank (mm)
Gape (mm)
~~Throat (mm)~~
~~Front length (mm)~~
Usual setting position
Line off bottom (m)
Hooks off bottom (m)
Method of baiting (manual/automatic)
Automatic baiting equipment (make and model)

Offal
Offal dumping position (port, starboard, stern)
Offal dumping during hauling (never, occasionally, always)
Propeller rotation direction (clockwise/anti-clockwise)

~~General Streamer Line Description~~
~~Vessel equipped with a streamer line (y/n)~~
~~Number of streamer lines regularly set~~
~~Streamer line position (port, starboard, stern)~~
~~Streamer line length (m)~~
~~Streamer length min/max (m)~~
~~Attached height above water (m)~~
~~Distance between streamers (m)~~
~~Number of streamers~~
~~Streamer design (single or paired)~~
~~Ariel extent of line (m)~~
~~Method used to assess aerial extent~~
~~Streamer material~~
~~Streamer line diameter (mm)~~
~~Streamer colours~~
~~Streamer line over bait entry position? (y/n/u)~~
~~Distance from stern to bait entry point (m)~~
~~Horizontal distance from bait entry point to streamer line (m)~~

Details of Dahn/Dropline Setting
Bycatch Mitigation Gear used (Y/N)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID

Main line length (m)
Number of hooks set

Percentage hooks baited
Distance between branches/snoods (m)
Distance of hooks off bottom (m)
Bait species
Bait size
Bait proportion
Deck lights during setting (On, Off)
Streamer lines used (Yes, No)
Number of streamer lines used Offal dumping during setting (Yes, No)
Daylight period
Moonlight
Bait entry position (Port, Starboard, Stern)
Vessel setting speed (knots)

Start and End setting. Repeat for Start and End of hauling
Date (YYYY.MON.DD)
Time (hh:mm)
Latitude
Longitude
Bottom Depth (m)

Gear lost
Number of sections lost
Number of hooks lost that were attached to lost sections of the dahn/dropline
Number of other hooks lost (excluding hooks attached to lost sections)

Observed catch composition
Observer ID
Was Haul observed for fish/invertebrate by-catch (Y/N):
Estimate percentage of the haul observed for by-catch (%)
Species (data shall be collected for each observed species)
Species code (FAO species code)
total retained catch weight (kg)
total discarded catch weight (kg)

Species Retained
observed number retained
observed number retained with tags

Species Discarded
observed number discarded
observed number discarded dead
observed number discarded alive

Specimen cut off (if possible)
Yes / No
For each species caught
- Taxa name
- Number alive

Number dead or injured]

Species Lost
observed number lost/dropped off at surface

Handline fishing activity

Handline Description
Target species (FAO species code)

Main Line
Material
Diameter (mm)
Integrated weight (g/m)

Hooks
Type (e.g.: J shaped, Circular, etc.)
Manufacturer
Marking (leave blank for none)
Model name
Make
Size (inchmm)
Total length (mm)
Shank (mm)
Gape (mm)
Throat (mm)
Front length (mm)
Usual setting position
Line off bottom (m)
Hooks off bottom (m)

Offal
Offal dumping position (port, starboard, stern)
Offal dumping during hauling (never, occasionally, always)
Propeller rotation direction (clockwise/anti-clockwise)

Details of Handline Operation
Target species (FAO species code)
Operation type: Research or Commercial (R/C)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID
Main line length (m)
Number of fishermen fishers operating handlines
Number of line lifts per fisherman (average)
Number of hooks per line
Percentage hooks baited
Bait species
Bait size
Bait proportion

Deck lights during setting (On, Off)

Start and End time of operation.
(An operation is a defined period of fishing between start and end date)
Date (YYYY.MON.DD)
Time (hh:mm)

Time Start (YYYY.MON.DD hh:mm)
Time Finish (YYYY.MON.DD hh:mm)
Operation Latitude
Operation Longitude
Bottom Depth (m)

Gear lost
Number of hooks lost

~~Observed catch composition~~
~~Observer ID~~
Was Haul observed for fish/invertebrate by-catch (Y/N):
Estimate percentage of the haul observed for by-catch (%)
~~Species (data shall be collected for each observed species)~~
~~Species code (FAO species code)~~
~~total retained catch weight (kg)~~
~~total discarded catch weight (kg)~~

~~**Species Retained**~~
~~observed number retained~~
~~observed number retained with tags~~

~~**Species Discarded**~~
~~observed number discarded~~
~~observed number discarded dead~~
~~observed number discarded alive~~

~~**Species Lost**~~
~~observed number lost/dropped off at surface~~

Squid Jigging operation details:

Squid Jigging (operation) Number
Observed (Yes/No)
Target Species (FAO species code)
Time Start (YYYY.MON.DD hh:mm)
Time Finish (YYYY.MON.DD hh:mm)
Latitude of operation
Longitude of operation
Number of fishers
Number of jigging machines
Fishing duration by hand (h)
Fishing duration by machine (h)
Fish lamp used during fishing (Y/N)

Was fishing observed for fish/invertebrate bycatch (Y/N):
Estimated percentage of the operation observed for fish/invertebrate bycatch (%)

Species:
FAO species code
Scientific name
Estimated retained catch weight (kg) or number of individuals
Estimated discarded catch weight (kg) or number of individuals

Interactions with Vulnerable Marine Ecosystems (VME)

General information
Name of observer
Name of vessel
Date
Trip number
Set number

VME location
Start and end positions of all gear deployments and/or observations.
(Latitude/longitude)
Depth(s) fished (m)

Fishing Gear
Indicate fishing gears used at each location

VME Taxa

Presence: Yes/No
• Species (identified taxonomically as far as possible or accompanied by a photograph where identification is difficult).
• An estimate of the quantity (weight (kg) or volume (m3)) of each listed benthic species caught in the tow (and the unit of measurement).
• An overall estimate of the total quantity (weight (kg) or volume (m3)) of all invertebrate benthic species caught in the tow(and the unit of measurement).
• Where possible, provide the live or dead status for corals
• Where possible, and particularly for new or scarce benthic species which do not appear in ID guides, whole samples should be collected and suitably preserved for identification on shore.
e) Collect representative biological samples from the entire VME catch. (Biological samples shall be collected and frozen when requested by the scientific authority in a Contracting Party). For some coral species that are under the CITES list photographs should be taken.

Other sessile benthos taxa

Presence: Yes/No
For each catch of taxa

- Scientific names (identified to the finest taxon level possible)
- FAO code (if available)
- Estimation of the amount caught

Annex C

Specifications for the Exchange of Data

1. Coordinated Universal Time (UTC) shall be used to describe times, using the following submission format: YYYY-MON-DDThh:mm:ss where:

   a. YYYY - represents a 4-digit year e.g. "2007"

   b. MON - represents a 3-character month abbreviation e.g. "APR"

   c. DD - represents a 2-digit day e.g. "05"

   d. T - is a space separator

   e. hh - represents hours based on the 24hr clock (length = 2 digits) e.g. "16"

   f. mm - represents minutes (length = 2 digits) e.g. "05"

   g. ss - represent seconds (length = 2 digits) e.g. "00"

   Example: 2003-JUL-17T13:10:00 = 1.10pm (1310h), 17 July 2003

2. Coordinates are to be used to describe precise locations and the following standards shall be used:
   Degrees minutes seconds (DD°MM'SS'') or Degrees minute decimal (DD°MM.XX) or Decimal degrees (DD.XXXX)
   Add N or S to indicated North or South for latitudes. Add E to indicate the Eastern longitude (the SIOFA Area is always in the Eastern longitudes), for decimal degrees, add minus for southern latitudes.
   Examples:
   Latitude= 42°37'06'' S Longitude= 48°03'58'' E
   Latitude= 35°09.70'' S Longitude= 51°12.94''
   Latitude= -10.0386 Longitude= 61.7088

3. Metric units of measure be used, specifically:

   a. kilograms are to be used to describe catch weight

   b. Metres are to be used to describe height, width, depth, beam, or length

   c. Cubic metres are to be used to describe volume

   d. Kilowatts are to be used to describe engine power

Annex D

Role and tasks of the scientific observer

1. The function of scientific observers on board vessels engaged in harvesting of marine living resources is to independently observe and report on the operation of fishing activities in the SIOFA Area.

2. In fulfilling this function, scientific observers will undertake the following tasks:

    a. Record details of vessel operations, including inter alia, times of, searching, fishing, transit etc., and details of hauls;

    b. Take biological samples of catches;

    c. Record biological data of species caught;

    d. Record by-catch information, such as species, quantity, and other biological data [as specified in Annex B]

    e. Record interactions with seabirds, marine mammals, and marine reptiles

    f. Record information on catch including data relating to processed conversion factors;

    g. prepare reports of their observations for their respective national authorities;

    h. collect and report data on sightings fishing vessels, unmarked fishing gear, and recovery of fishing gear in the SIOFA Area, including vessel type identification, vessel position and activity and gear type;

    i. collect information on fishing gear loss and waste disposal by the fishing vessels at sea.

    1.

Protocol for documenting whale interaction in deep-sea demersal longline fisheries

Priority 1 Data to be collected

Presence

For every haul and for each species:

Haul	Fish Waste discharge	Presence ?	Comment
1	Yes/No	Absent	
2	Yes/No	Present	
3	Yes/No	Present	Night-time, but clearly see them in projectors
4	Yes/No	Not observed	Night-time, can't see them but can't say they are not present around.

Requirement: data mandatory and must be collected for every haul.

"Presence": Favourable conditions (visibility is at least several hundred meters with sufficient light) and observation by the observer (observer can be alerted by the crew when whales are sighted). The presence of whales is confirmed by direct observation of at least one individual at the surface in the vicinity of the vessel at least once during 1 haul. Note that presence can also be observed at night when killer whales come very close to the boat.

"Absence": Favourable conditions and no odontocete spotted at any time during the entire haul.

"Not observed" is used either if the observer did not have time to gather information (e.g. if line broke), or if conditions are too bad to observe (either weather conditions, or hauling at night).

Photos

For every haul and for each species:

Haul	Presence?	Photos?	Comment
1	Absent	No	
2	Present	Yes	
3	Present	No	Night-time: too dark for pictures
4	Not observed	No	Night-time: too dark for pictures

Requirement: data mandatory and must be collected for every haul.

With this additional field, observers indicate whether they took pictures of whales for photo-identification purposes or not during the haul of the set.

Number of individuals

For every haul and for each species:

Haul	Presence?	minimum	maximum	comment
1	Absent	0	0	
2	Present	15	22	
3	Present	1		At least one but too dark for accurate estimate
4	Not observed			

Requirement: data should be collected for every haul to the extent possible.

Providing exact counts of individuals from the surface may be difficult for observers as whales can dive for long periods of time. To account for uncertainty around counts, observers may fill in two fields:

- Minimum estimate of the number of individuals,
- Maximum estimate of the number of individuals.

Priority 3 Data to be collected

Interaction with fishing gear

For every haul and for each species:

Haul	Presence?	Interaction with fishing gear?	Comment
1	Absent	No	
2	Present	Yes	Saw them diving close to the line
3	Present	Yes	Head of fish were observed
4	Not observed		

Requirement: data should be collected for every haul to the extent possible.

When Presence, interaction with fishing gear is taken into account if whales are diving close to the lines or directly observed with fish in their mouths.

Estimated Time of Arrival (ETA)

For every haul and for each species:

Haul	Presence?	ETA	Comment
1	Absent	NA	Not applicable
2	Present	0:30	We were able to haul 30 minutes before they arrive
3	Present	0:00	Saw them in projectors even before first hook came on board
4	Not observed	NA	Not applicable

Requirement: data should be collected for every haul to the extent possible.

The Estimated Time of Arrival here corresponds to the time between the first hook of the line hauled on board and the arrival of sperm whales / killer whales. If whales are already present when hauling starts, then ETA is zero.

Annex E – Flow diagram of the potential timeline for the SIOFA-PAM Projects and related meetings and workshops

SIOFA PAM PROJECTS
TIMELINE

Project Work | SIOFA meetings

2024

OCTOBER–DECEMBER PROJECT(S) START
PAM Project consultants contracted
Data/Information requests actioned

2025

FEBRUARY
SIOFA SC WORKSHOP
Consultants presented approach and methods to SC workshop for advice and feedback

FEBRUARY – JUNE
ANALYSIS AND DRAFTING
PAM01 Preparing Draft Conceptual Framework and Technical Guidelines
PAM 02 preparing BLRPs

March
SIOFA SC
SIOFA SC to consider February SC workshop report. SC to provide feedback as necessary to consultants

June–July
Drafts circulated
PAM 01 and PAM 02 drafts circulated

JUNE
SIOFA MOP
SIOFA MOP will consider the SIOFA SC Report which will provide an update on the PAM projects.

JULY – AUGUST
PAM 03 PREPARATION
PAM 03 will begin preparation informed by PAM 01 and 02.

AUGUST–DECEMBER
PAM 01, 02, 03 REVISION
Consultants to consider SC workshop advice and feedback

TBC July/August
SIOFA SC workshop
Consultants present progress to SC Workshop. SC Members to provide advice and feedback. Members to consider timing to provide feedback on PAM03 draft.

DECEMBER
DRAFT SUBMISSION
Consultants submit final drafts to SIOFA in advance of SIOFA SC 2026.

2026

APRIL
FINAL SUBMISSION
Consultants consider SC feedback and submit PAM 01, 02 and 03 final results

MARCH
SIOFA SC
SIOFA formally considers PAM 01, 02 and 03 outputs

Annex F – Harvest strategies and timeline for the implementation of pre-assessments, assessments, management objectives and implementation

Steps	SC			MoP		
		ORY	TOP		ORY	TOP
Step 1 **Define management objectives**				1. Specify management objectives: ➢ biological (including ecosystem considerations) e.g., ensuring long-term sustainability and productivity; recovering heavily depleted stocks ➢ socio-economic ➢ catch stability (e.g. overs and unders) e.g., maintaining reasonable stability in catches for the industry	☐	☐
	2. Propose reference points based on management objectives: limit reference points (B_{lim} and/or F_{lim}), and target reference points (B_{TARGET} and/or F_{TARGET})	☒ Completed	☒ Completed			
				3. Select reference points	☐	☐
	4. Characterise the sources and values of uncertainties associated with the estimation of reference points (target and limit)	☒ Completed	☒ Completed			
				5. Specify acceptable levels of risk to be used in evaluating possible consequences of management actions, and time horizons for fishing mortality adjustments to avoid stock collapse, breaching limit reference point or achieve the target reference.	☐	☐
Step 2 **Determine appropriate fisheries monitoring regime**	1. Identify data collection and monitoring activities required to reliably evaluate resource status with respect to reference points	☐ Ongoing	☐ Ongoing			
				2. Implement data collection and monitoring programme to deliver consistent, high-quality data into the future.	☐	☐
	3. Determine how frequently to monitor (survey and/or assessments)	☐ Ongoing	☐ Ongoing			

Steps	SC			MoP		
		ORY	TOP		ORY	TOP
Step 3 **Develop candidate Harvest Control Rules**	1. Propose candidate Harvest Control Rules (HCR): actions for controlling fishing mortality (F) or adjusting catch with respect to pre-defined, stock-specific, precautionary reference points for both biomass (B) and fishing mortality (F) were possible.	☐ Ongoing	☒ Completed			
				2. Select HCR	☐	☒ MoP11 Report para 122
	3. Conditions for Re-Evaluating Reference Points and HCR	☐	☐			
Step 4 **Test HCR with MSE**	1. Test HCR and compare expected performance of harvest strategies	☐	☐			
				2. Adopt appropriate harvest strategy	☐	☐
Step 5 **Implement Harvest Strategy**				1. Implement management changes based on HCR	☐	☐
	2. Monitor (survey and/or assessment) and assess stock(s)	☐	☐			
	3. Determine stock status relative to reference points	☐	☐			
				4. Determine if Harvest Strategy delivers the objectives	☐	☐
Step 6 **Improve assessment and harvest strategy**	1. Review reference points and HCR if needed	☐	☐			
	2. Define research requirements to improve the quantification and evaluation of uncertainty (i.e., risk analysis), as well as methodological developments required to reduce uncertainty.	☐	☐			

Annex G – Updated SIOFA protocol for evaluating BPA designation

SIOFA protocol for evaluating BPA designation (updated by SC10 in 2025)

The area should be clearly defined including the coordinates and a detailed map provided and including a shape file for GIS analysis. All subareas for inclusion need to be described. If subareas are substantially different, they should each have their own table (see below).

Objectives
The objective/s for the area must be clearly stated and the proposal clearly demonstrates which of the criteria are met.
The proposal should state which of the evaluation criteria meet the objectives by completing the table below and noting that the evaluation criteria list has no particular ranking of importance.

Evaluation criteria
1. **VMEs are known to occur and/or triggering of VME indicator thresholds reported for the area proposed**
    a. Known or consistent triggering of VME indicator thresholds occur.
    b. VMEs have been observed through non-fishing operations.
2. **Bioregional representation**
    a. Area is known to contain unique, rare or distinct, habitats or ecosystems that fishing operations will disturb.
    b. Area with a comparatively higher degree of naturalness due to zero or a low level of human-induced disturbance or degradation from, for example, historical fishing activity.
3. **Geographic and/or geomorphological representation**
    a. The area provides for important or desirable geographic representation within the SIOFA area.
    b. The area proposed is known to contain unique or unusual geomorphological features that fishing operations may damage.
4. **Biodiversity representation**
    a. The area is known to contain unique or rare (occurring in only a few locations) species, populations or communities.
    b. The area is known to contain a high diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.
    c. The area is known to contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.

5. **Scientific interest**
    a. The area has scientific research interest associated with understanding ecosystem, biological, geological and biodiversity processes in the SIOFA.
6. **Areas of special significance for endangered, threatened and protected (ETP) species or important species or ecosystem properties**
    a. There is evidence that the area is of special importance for critical life history stages of ETP species.
    b. There is evidence that the area contains habitat for the survival and recovery ETP or declining species or is an area with significant assemblages of such species.

Area name	
Proponents	
Geographic description	**Physical description** • **Biological description** • **Coordinates**:
Objectives	• •
Criteria that the area meets	**This proposed area meets the following agreed criteria:** • {eg 4a…} **VMEs are known to occur and/or triggering of VME indicator thresholds reported** • **Biodiversity representation** • • **Geographic and geomorphological representation** • • **Biodiversity representation** • • **Scientific interest** • •

	Area is of special significance for threatened or important species or ecosystem properties •
Fishing activities, fishing history and planned fisheries	**Description of the fisheries operating in (or that have operated and/or plan to operate) the area** • •
Other non-fishing related extractive activities	• •
Social, cultural and economic impacts	• •
Other supporting information (if applicable)	• •
Risks to the proposed area	• •
Review period	
Outline of monitoring and/or research needed	• •

Recommendation summary

Area name			
Risk	**Objectives**	**Recommendation**	**Review**
	• •		

Annex H – Checklist for the Union of Comoros hapuka exploratory fishery

Fisheries Operation Plan Checklist

SUCCINCT DESCRIPTION

Any CP or CNCP or PFE (CCP) seeking to permit a vessel that flies its flag to fish in an exploratory fishery, or to fish in an exploratory fishery with a gear type that has not been used in that fishery for the previous ten years to submit no less than 35 days prior to the next annual meeting of the Scientific Committee a detailed description of their intended Fisheries Operation Plan for evaluation by the SC.

CCP	The Union of Comoros
Area	Subareas 2, 3a, 3b and to a much lesser extend in subarea 4
Target Species	*Polyprion* spp, *P. oxygeneios* and *P. americanus*
Proposed Methods of Fishing	Dropline
Proposed Maximum Catch / Effort Limit	TAC of 500 t/ calendar year; Total Allowable Effort: 270 days/ calendar year; 14 days fishing on one sea mountain per trip
Expected Operation Period	2025-2027
Submission date	06/02/2025

SCIENTIFIC COMMITTEE ASSESSMENT CHECKLIST AND RECOMMENDATIONS

This checklist is for the Scientific Committee to complete to ensure that all aspects of the Fisheries Operation Plan and the Data Collection and Analysis Plan have been assessed.

To assist the Scientific Committee with their deliberations, please pre-fill the Rationale column with a brief justification of how your Fisheries Operation Plan and Data Collection and Analysis Plan address the Scientific Committee consideration. The Scientific Committee will complete the Assessment column.

The SC assigns a status of either Yes, No, or Partial when evaluating the proponent's rationale.

Fisheries Operation Plan checklist

Fisheries Operation Plan Considerations	Rationale from proponent	Assessment by SC
a) A clear objective for the fishery stated in the FOP.	**YES.** In **Section 1** it says "The objective of the FOP (responsive to CMM 17) is to test the fishery potential of *Polyprion* spp, *P. oxygeneios* and *P. americanus* to collect and provide the scientific data for evaluating the sustainable exploitation of the	YES

Fisheries Operation Plan Considerations	Rationale from proponent	Assessment by SC
	population(s) found on the fishing areas within the SIOFA Area."	
b) The FOP includes explicit target, limit and/or threshold reference points.	**YES.** No stock assessment has been completed for hapuka in SIOFA area **(Section 3.2)**. The proposed catch limit for all areas fished is 500 t per calendar year of hapuka (*Polyprion* spp,) hapuku wreckfish (*P. oxygeneios*) and wreckfish (*P. americanus*), which are smaller than the TAC for New Zealand fishery (2182 t) with a smaller fishing ground. **(Section 5)**. The FOP also mentions that the expected period of operation is 3 years (2025-2027). In **Section 3.3** it says: "It is proposed to use up to 10 lines in the water at the same time, with each line containing maximum 100 hooks and fishing between 150 and 750 m with a maximum depth of 1000 m." In **Section 5** to monitor our performance against the objective of to explore the fishery potential of Polyprion species to sustain a commercial fishing operation in the SIOFA Area we propose to use an interim target reference point of 50%B0 and an interim limit reference point of 30%B0 as our initial reference points unless that data analysis undertaken as part of this exploratory fishery suggests alternative reference points may be more appropriate.	Partial

Fisheries Operation Plan Considerations	Rationale from proponent	Assessment by SC
c) Method for evaluating the stock trends against the reference points is clearly stated.	**YES**. Although no stock assessment has been completed for hapuka in SIOFA Area we will used standardized CPUE analysis and a percent change in CPUE (change from $CPUE_{init}$ which we will equate with B_0) as our initial means to monitor changes in biomass, The collection of catch and effort data would allow us correctly evaluate the stock trends against the reference points. **(Section 5).**	YES
d) An appropriate precautionary catch and/or effort limit is included.	**YES**. Six trips are expected to be conducted annually by the f/v Rinascente 9, each lasting for approximately 45 days. The proposed annual catch limit for *Polyprion* spp, P. *oxygeneios* and P. *americanus* is 500 t with a Total Allowable Effort of the proposed vessel fishing for 270 days per calendar year. In **(Sections 1 & 5)**.	Partial
e) Catch/effort limit(s) are spread over areas or will be undertaken in a manner that ensures exploration and is not focused consistently fishing in one small area.	**YES**. The f/v Rinascente 9 will be limited to 14 days fishing per seamount per trip. **(Section 1)**	YES
f) The FOP includes an assessment of the cumulative impacts of all fishing activities in the area of the exploratory fishery.	**YES**. The FOP indicates operational details with considering expected impacts of fishing activities on ecosystems **(Section 3.2)**. In accordance with CMM, Scientific observers follow the specification of the Scientific Sampling Plan detailed in Appendix B.	YES
g) The FOP includes an evaluation of the impact of the proposed fishing on the marine ecosystem including specific risk assessments for SSI, teleost bycatch, shark bycatch and VME impacts.	**YES**. The FOP includes data correction method in accordance with CMMs **(Section 8).** The scientific observed data including bycatch of seabird, mammals, sharks, and VME indicators may contribute to evaluate future	YES

Fisheries Operation Plan Considerations	Rationale from proponent	Assessment by SC
	biomass assessments, geographical distribution of the target species and risk assessment. **Section 10** pays attention to the risk assessment associated with the proposed fishery. In addition to that The Union of Comoros is committed to respect measures recommended by the SC 10 in relation to the Benthic Protected Areas (BPAs) closed for bottom fishing.	
h) If the Data Collection and Analysis Plan is carried out as proposed it will result in sufficient information to inform the level of precaution required and the degree of certainty with which the Scientific Committee's advice could be provided.	**YES**.: The Union of Comoros recognizes this FOP must be conducted in a manner consistent with all relevant Conservation and Management Measures (CMMs) adopted by the SIOFA. **(Section 1)** The fishing log book for dropline fisheries recommended by SIOFA will be used by the Union of Comoros listed in SIOFA CMM 2 to collect and evaluate the data.	YES
i) The degree to which the approach outlined in the Fisheries Operation Plan is likely to ensure the exploratory fishery is developed consistently with its nature as an exploratory fishery, and consistently with the objectives of the Agreement.	**YES**. The FOP says that six trips will be made by the f/v Rinascente 9 annually, each lasting for approximately 45 days with catch limit (500 t) and effort limit (270 days) per calendar year and a maximum of 14 days fishing per seamount per trip **(Section 1).** The vessel will be equipped with no more than 10 droplines for this type of fishery. It is also worth mentioning the Union of Comoros is committed to respect measures recommended by the SC 10 in relation to the Benthic Protected Areas (BPAs) closed for bottom fishing. **Section 7.2** provides information on the observer coverage to ensure the fishing operation is conducted in line with the nature	YES

Fisheries Operation Plan Considerations	Rationale from proponent	Assessment by SC
	of the exploratory fishery. Observer data collection. The Ministry of Agriculture, Fisheries and Crafts of the Union of Comoros has the authority to issue fishing licenses and high seas permit, which, inter alia, enables the authorization of Comorian flagged fishing vessels to fish. Authorised vessels are required to comply with all Comorian laws and the regulations, and all SIOFA Conservation and Management Measures adopted by the Commission **(Section 2.4)**.	
j) If a Fisheries Operation Plan proposes any bottom fishing activities, advice and recommendations in accordance with CMM 01(2023) (Interim Management of Bottom Fishing)[9].	**YES**. Please refer to section g) In addition to that the BFIA for Hapuka Fishery was submitted to SIOFA SC 10 by the Union of Comoros	YES

Data Collection and Analysis Plan checklist

Data Collection Plan considerations	Rationale from proponent	Assessment by SC
a) A description of the catch, effort and related biological, ecological and environmental data are included and are sufficient to address the questions raised in the FOP Checklist, items c, e, f, g and h.	**YES**. **Section 7.1** talks about the vessel monitoring and control. While at sea the vessel must report its location and current activity to Comoros through VMS. While at sea, the Master will be responsible for the day-to-day operations of the vessel and ensuring compliance in accordance with Comorian law and SIOFA CMMs.	Partial

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[9] The Scientific Committee shall undertake a review of the proposed assessment and provide advice to the MoP on:
- i. Whether the proposed bottom fishing would contribute to having significant adverse impacts on deep sea fish stocks for which no stock assessment has been completed, bycatch species and/or VMEs and, if so,
- ii. Whether any proposed or additional mitigation measures would prevent such impacts.
- iii. Whether this proposal overlaps with an existing bottom fishing footprint.

Data Collection Plan considerations	Rationale from proponent	Assessment by SC
	Vessel Monitoring System: the vessel must have on board a VMS system approved by the Union of Comoros.	
	It is proposed that this fishery will be undertaken over three years 2025-2027 inclusive, with annual reporting and amendments following the advice of the SC and Commission.	
	The Union of Comoros anticipates submitting annual Fisheries Operations Plans throughout this endeavour to the SIOFA SC at their annual meetings as well as an analysis of the previous year's catch and effort and report back on the results of biological data analysis.	
	The Union of Comoros endeavours to undertake a VME and benthic footprint analysis of this fishery. The observer coverage is shown in the **Section 7.2.** The data collection method is described in the **Section 8**.	
b) The dates by which the data must be provided to the MoP are included.	**YES**. The Union of Comoros recognizes the FOP must be conducted in a manner consistent with all relevant Conservation and Management Measures (CMMs) adopted by the SIOFA. Therefore, confirming that data will be submitted according to the SIOFA deadlines **(Section 1).** It is proposed that this fishery will be undertaken over three years 2025-2027 inclusive, with annual reporting and amendments following the advice of the SC and Commission **(Section 7.1**).	YES
	The Union of Comoros anticipates submitting annual	

Data Collection Plan considerations	Rationale from proponent	Assessment by SC
	Fisheries Operations Plans throughout this endeavour to the SIOFA SC at their annual meetings as well as an analysis of the previous year's catch and effort and report back on the results of biological data analysis. The Union of Comoros endeavours to undertake a VME and benthic footprint analysis of this fishery.	
c) A plan is included for directing fishing effort in an exploratory fishery to allow for the acquisition of relevant data to evaluate the fishery potential and the ecological relationships among harvested, non-target and associated and dependent populations and the likelihood of adverse impact.	**YES.** To ensure the FOP is developed and implemented in a precautionary and gradual basis according to the best available science, details about data collection is listed **in Section 3.2**. The data Will be reflected in fishing log books.	Partial
d) Where appropriate, the FOP includes a plan for the acquisition of any other research data obtained by fishing vessels, including activities that may require the cooperative activities of scientific observers and the vessel, as may be required by the Scientific Committee to evaluate the fishery potential and the ecological relationships among harvested, non-target, associated and dependent populations and the likelihood of adverse impacts.	**YES**. Section 7.2 indicates observer data collection. In addition to that **Section 10** describes the risk assessment associated with the fishery. The data will be reflected in fishing log books.	Partial
e) The FOP includes a description of the planned analyse of catch and effort data including CPUE, catch distribution of the target and bycatch species; biological analysis including, length, age, growth maturity of target species; environmental impact analysis; VMEs impact assessment (if appropriate); and target species stock delineation. Including a time frame for these	**YES**. In **Section 1** it says the Union of Comoros recognizes the FOP must be conducted in a manner consistent with all relevant Conservation and Management Measures (CMMs) adopted by the SIOFA. Therefore, confirming that data will be submitted according to the SIOFA deadlines including stock assessment reports, fishing log books, observer log books etc….	YES

Data Collection Plan considerations	Rationale from proponent	Assessment by SC
assessments[10] (that is when will data be analysed and available for SC review).		
f) The FOP includes an evaluation of the time scales involved in determining the responses of harvested, dependent and related populations to fishing activities (that is how long do you expect the fished stock to show a stock response to the fishing activities).	YES. The FOP mentions that the expected period of operation for this new exploratory fishery is 3 years (2025-2027)	Partial

Scientific Committee recommendations (SC to complete)

The SC discussed the Union of Comoros Fisheries Operational Plan and Data Collection and Analysis plan and **Agreed** that the approach outlined in the Fisheries Operation Plan is likely to ensure that the exploratory fishery is developed consistently with its nature as an exploratory fishery, and consistently with the objectives of the Agreement, with the following requested modifications:

- the proponents to provide the forms that will be used for data collection to SC11

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[10] Noting that the SC should get annual updates on activities undertaken by the exploratory fishery, but this task is regarding a full analysis of the data, which should be completed prior to any proposed roll-over the exploratory fishery.

Annex I – Implementation plan of the recommendations of the SIOFA Performance Review Panel updated with SC10 comments

№	Performance Review Recommendations	Review Panel Priority (H/M/L)	SC Recommendations (from SC-EXTRA1)	CC07 Recommendations	MoP10 Decision	MoP 10 Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline at MoP10	Notes and Current Status
1	The Panel recommends that the SIOFA SC is tasked with conferring high priority to the improvement of stock assessments in order to reduce uncertainty as a necessary basis for the adoption of harvest strategies. This task should be subject to a target timeline and include a process for an independent peer review of assessment methods and results.	H	11. Regarding Recommendation Nr 1, the SC noted that it has made recommendations to the MoP on the development of harvest strategies and related data collection and stock assessment work at the Joint MoP-SC Harvest Strategies Workshop and at the SC8 meeting including the necessary steps and timelines for the stock assessments of the key SIOFA stocks. 12. The SC recommended that the MoP consider Recommendation Nr 1 in conjunction with paragraphs 166–197 and Annex F (Medium-Term SC8 Workplan) of the SC8 Report. 13. The SC endorsed Recommendation Nr 1 but recommended that the MoP note that it may be difficult to improve some stock assessments and reduce their uncertainty, because even though the catch and effort data collected are accurate, there may only be a limited amount of data available because of the small size of those fisheries. However, it is still possible to develop useful harvest strategies based on stock assessments with a higher level of uncertainty, provided adequate management procedures are used to mitigate the risk and uncertainty. 14. The SC endorsed the high priority assigned to this recommendation.		MoP endorses recommendation 1 as commented by the SC in particular difficulties of improving SA and reducing uncertainty	H	SC	Ongoing, ref timeline recommended	See ORY, TOT, ALF projects in the SC workplan. Note the new (2024-2025) assessment of ORY (SC-10-40). Note new assessment of toothfish biomass (SC-10-23).

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2	The Panel recommends that SIOFA CCPs task the Scientific Committee with assessing the status of key shark stocks in the Area and that their status be kept under constant review over the coming years.	H	15. The SC endorsed Recommendation Nr 2 and noted that it has conducted discussions on assessing the status of key shark stocks in the SIOFA Area. 16. The SC recommended that the MoP consider Recommendation Nr 2 in conjunction with: a. the outcomes of the Intersessional Workshop on Deepwater Sharks in SIOFA Area, particularly the updated ecological risk assessment for deepwater chondrichthyan species (paper SC-08-29 Update on the ecological risk assessment of deepwater chondrichthyan species); b. paragraphs 224–257 of the SC8 Report, noting in particular the limited ability to conduct a stock assessment on shark species in the short-term, especially since the planned measures to reduce shark bycatch will result in less data being available; c. the shark-related scientific work in the Medium-Term SC8 Workplan (Annex F, SC8 Report). 17. The SC endorsed the high priority assigned to this recommendation.		MoP supports this recommendation, work is already ongoing. Key shark stocks for assessment to be defined by SC.	H	SC	ongoing	Task considered, ref SC9 report. Future SC meeting will need to define "key shark" species. Note the update in the shark ERA (SC-10-49).

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3	The Panel recommends SIOFA CCPs ensure that the fisheries summaries developed by the Scientific Committee contain clear information on the stock status of species caught in the SIOFA Area, and that this information is promptly made available to the general public.	M/L	18. The SC endorsed Recommendation Nr 3. The SC noted that stock status will be included in the fisheries summaries and will be reported to the MoP. The SC also noted that the fisheries summaries should be made available to the public (paragraph 129, SC8 Report) and that the continued development of the fisheries summaries is a priority in the Medium-Term SC Workplan (Annex F, SC8 Report). 19. The SC endorsed the medium/low priority assigned to the recommendation.		MoP endorses this recommendation, work is ongoing	M/L	SC / Secretariat	3 - 5 Years	See the fisheries summaries updated in 2025 (SC10 Report)
4	The Panel recommends SIOFA CCPs assess the use of the VME Guide by observers and take action to ensure its use as required, and also implement awareness programmes targeting observers.	M	20. The SC endorsed Recommendation Nr 4 and noted that work is ongoing to make this information available on the SIOFA website and that the SC has discussed developing the VME Guide further with additional species. 21. The SC endorsed the medium priority assigned to this recommendation.		MoP endorses this recommendation	M	SC Secretariat for publication CCPs for implementation	3 - 5 Years	Note work on the SIOFA VME Classification Guide (SC-10-26).
5	The Panel recommends SIOFA CCPs finalise the protocol on VME and protected area designation and speed up the process of progressing the agreed protected areas from their interim nature and identify any further areas in need for protection.	H/M	22. Regarding Recommendation Nr 5, the SC endorsed the recommendation and noted that related work is underway as part of the "PAE2022-MPA1 Protocols to designate and evaluate MPAs" EU funded project, which focuses on the designation and assessment of marine protected areas, and whose outcomes are expected to be delivered at the end of 2023. 23. The SC endorsed the high/medium priority assigned to this recommendation.		MoP endorses this recommendation	H/M	SC MoP	1 - 3 Years	Complete, see SC10 Report on revised protocol and proposed BPAs

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6	The Panel recommends SIOFA CCPs consider capacity building activities for developing States to undertake BFIAs as per the SIOFA standards.	M	24. The SC noted that Recommendation Nr 6 should be considered in conjunction with Recommendation Nr 31. 25. The SC endorsed Recommendation Nr 6 but recommended to the MoP that broader capacity building, particularly data capture, data quality, and data reporting, rather than specifically to BFIAs, would be of greater use to developing States. 26. Regarding the priority assigned to this recommendation, the SC considered it to be of a low priority if it only pertained to BFIAs, but a high/medium priority if it pertained to broader capacity building that included data capture, data quality, and data reporting.		MoP endorses this recommendation	H/M H on data capacity building	SC / Secretariat	1 - 3 years	The Observers' harmonisation framework partially addresses the data capture and quality improvement (SEC2022-OBS1) The MoP tasked the Secretariat for developing a paper on options for facilitating and addressing Capacity Building needs of CCP development states for consideration at its next CC and MoP. The scope of the paper should encompass the broad range of areas as commented by the SC in relation to recommendation 6. See paper SC-10-24.

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7	The Panel recommends either the deadlines for data submission under relevant CMMs or the schedule of the annual meeting of the Scientific Committee be revised to ensure the SC has the most recent data available ahead of its annual meeting.	H	27. Regarding Recommendation Nr 7, the SC noted that it had discussed this issue and reached the conclusion that: a. the current data submission deadline is the only feasible deadline for CCPs, as it comes after the end of the fishing season and that obtaining, entering and checking the data before submission to SIOFA would not be possible at an earlier date. The SIOFA Secretariat noted that, once received, these data are entered into the SIOFA databases, checked and validated, and that final versions of these data are only available for analysis around September, which would be after the MoP. b. rescheduling of the SC to a later date would therefore also not be a feasible option, as there would not likely be enough time to hold the MoP meeting within the same year. 28. The SC noted that it had previously discussed and requested the MoP to consider mechanisms to enable CCPs to submit data on a more frequent basis (e.g., monthly or quarterly reporting) where CCPs were able to (paragraph 64, SC7 Report). 29. The SC noted that the annual national reports provide a mechanism for the SC to have a summary of the most recent data and "could be used to support more informed discussions at the SC meeting" (SC8 para 52). The SC further noted that when conducting stock assessments on long-lived fish, the long-term trend is more important than the terminal year, and not being able to use the most recent data in a stock assessment is therefore not a major issue. 30. The SC recommended that the MoP note that it disagreed with Recommendation Nr 7.		MoP agrees with the concerns expressed by SC. MoP does not endorse this recommendation The MoP would however consider mechanisms to enable CCPs to provide data on a more frequent basis.				N/A

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--	Recommendation Nr 34 on the implementation of reporting requirements, specifically on the development of an IT-platform for the management of data and information submissions also apply to the issues assessed under this criterion.	--							See recommendation 34
8	The Panel recommends SIOFA CCPs task the Scientific Committee to develop a long-term strategic plan with identified priorities for its work and options for the use of independent consultants, academic institutions, private/public organisations and/or CCP expertise resources as feasible, taking into account funding requirements.	M	31. The SC endorsed Recommendation Nr 8. 32. The SC recommended that the MoP note that the SC is prepared to develop a long-term strategic plan with guidance from the MoP, and that a medium term plan had been prepared at SC8 for consideration by the MoP. 33. The SC recommended that the MoP hold a broader discussion on options for the use of independent consultants, academic institutions, private/public organisations and/or CCP expertise resources as feasible. 34. The SC endorsed the medium priority assigned to this recommendation.		MoP encourages SC to develop a long-term strategic plan. Topic will also be addressed at MoP10 under agenda item XX	M	SC	3 years	Complete. Note the SC workplan with priorities developed for up to 5 years

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--	Recommendations nr 7, 10 and 46 concerning, respectively, the scheduling of SC meetings, the development of a framework for Scientific Advice and the management of human and funding resources for its work apply also to the issues assessed under this criterion.	--							
9	The Panel recommends CCPs to launch an exercise of consolidation of the various CMMs into a corpus of SIOFA rules and regulations, with the aim of codifying the applicable rules to make them clearer, easier to interpret and easier to control in terms of compliance. This exercise should identify existing gaps and possible contradictions, issues of interpretation in need of resolving, and a future structure of the corpus that allows the different actors on whom the various obligations fall (from SIOFA´s own bodies, to CCP authorities, to	M	35. Regarding Recommendation Nr 9, the SC endorsed the need to identify existing gaps and possible contradictions, and issues of interpretation in need of resolving, but did not consider there to be a strong need to consolidate the various CMMs. 36. The SC endorsed the medium priority assigned to this recommendation. 37. The SC recommended that the MoP consider changing the naming convention for the CMMs so that the CMM number precedes the year the CMM was updated, e.g., CMM 2020-01 would become CMM 01-2020.	82. Regarding Recommendation Nr 9, the Compliance Committee endorsed the recommendation to identify existing gaps and possible contradictions, and issues of interpretation in need of resolving, while noting that this is part of the ongoing work of the Compliance Committee. The Compliance Committee did not endorse the recommendation to consolidate the various CMMs into a corpus of SIOFA rules and regulations.	MoP does not endorse the recommendation to consolidate the various CMM into a corpus of SIOFA measures. The MoP noted that the CC is continuously revising the CMM. MoP adopts the renaming convention of the CMM.	M	CC / Secretariat	ongoing Oct 2023 for CMMs renaming	A change to the CMM naming convention was adopted at MoP10, and this was implemented by the Secretariat in October 2023 MoP11 notes that the recommendation has been implemented.

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	fishers) to have a clear and user-friendly access to their applicable rules and discipline.								

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10	The Panel recommends SIOFA CCPs undertake the development of a framework for the provision of Scientific Advice that takes into account best international practices, whether or not combined with a framework for decision-making at managerial level in accordance with the Precautionary Approach. This could accompany or complement the already decided work line dedicated to the development of harvest strategies but would provide the basis for an urgent consideration of precautionary measures in the short term.	M	38. The SC endorsed Recommendation Nr 10 and noted that, with the adoption of harvest strategies and defined management targets and risk thresholds, the SC would be able to develop more formal decision-making tools that would be useful for the MoP. 39. The SC endorsed the medium priority assigned to this recommendation. 40. The SC noted that the FAO DSF project is compiling information on how advice is requested and provided at different RFMOs as a way to share ideas and methods among RFMOs. 41. The SC noted that it would also be useful to develop a template or agreed language for framing stock assessment or ecological advice to the MoP.		MoP endorsed recommendation 10.	M	SC	1 - 3 years	Ongoing. See the SC workplan for proposed projects relating to the precautionary approach framework and harvest strategies (SIOFA-PAM)

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11	The Panel recommends SIOFA discusses with CCAMLR concrete options to co-manage toothfish stocks shared between the 2 organisations, and establishes either a prohibition of fishing for this resource outside established toothfish management units or revised the units as required so no activities escape the conservation measures established for this resource.	H	42. The SC endorsed Recommendation Nr 11 and noted that it is consistent with its discussions at SC8 (paragraphs 143–155, SC8 Report). 43. The SC endorsed the high priority assigned to this recommendation.		MoP endorsed recommendation 11.	H	MoP	ongoing	SC has recommended the establishment of a new South Indian Ridge (SIR) management area with an associated catch limit (para 211 of the SC9 report) MoP11 notes that CMM15 was amended in 2023, to extend the scope of the application of provisions concerning observer coverage and toothfish tagging to the all SIOFA area.
12	The Panel recommends SIOFA CCPs to urgently agree on precautionary measures regarding alfonsino in light of the significant level of catches, second in the Area by weight, and of the fact that the stocks´ biological complexity makes it challenging to adopt measures other than precautionary, at least in the short-to-medium term. Effort and catches should be constrained to the lowest possible levels.	H	44. The SC disagreed with Recommendation Nr 12 and recommended that the MoP note that this recommendation was inconsistent with the previous alfonsino stock assessment advice (SC-05-29 Age-Structured Production Model assessments of the Alfonsino, and summarised in paragraphs 116–119 of the SC5 Report) and with the CPUE analyses conducted at SC8 (paragraph 130 and Figure 1, SC8 Report), which indicated that "the stock is fluctuating without trend in recent years". 45. The SC noted that it discussed planned and ongoing alfonsino-related scientific work at SC8 (paragraphs 131–140, SC8 Report).		MoP does not endorse Recommendation 12. MoP noted the lack of management measures for Alfonsino, and requests SC9 to propose potential management measures for Alfonsino				N/A

№	Performance Review Recommendations	Review Panel Priority (H/M/L)	SC Recommendations (from SC-EXTRA1)	CC07 Recommendations	MoP10 Decision	MoP 10 Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline at MoP10	Notes and Current Status
13	The Panel recommends SIOFA CCPs adopt precautionary measures for target stocks other than the three key stocks of toothfish, orange roughy and alfonsino.	H/M	46. The SC endorsed Recommendation Nr 13 and noted that it had discussed and recommended interim Harvest Control Rules (HCRs) for the key SIOFA stocks (paragraph 178, SC8 Report). 47. The SC endorsed the high/medium priority assigned to this recommendation.		MoP endorsed recommendation 13	H/M	SC / MoP	ongoing	Note the development of harvest strategies for key stocks, and note the ERA and proposed updates for future meetings (SC workplan). Note the work on CPUE for oilfish and escolar. Note the catch limits on species not otherwise assessed based on the average catch of a reference period already adopted by the MoP.
14	The Panel recommends SIOFA CCPs engage in discussions towards a future regime for the allocation of fishing rights.	L			MoP endorsed recommendation 14	L	MoP	5 years	MoP11 had discussion on this topic under the SC agenda items. CKI to propose a paper on allocation framework for MoP12.
15	The Panel recommends SIOFA CCPs agree on a definition of new fisheries and discuss a regulatory framework for new and exploratory fisheries incorporating the highest standards derived from international best practices. The framework should make proper use of tools already developed by SIOFA such as the fishing footprint, BFIAs and VME mapping.	H/M	48. The SC endorsed Recommendation Nr 15 and noted that there had been previous work on this matter, although not in recent years. The SC noted that it had recommended an updated bottom fishing footprint to the MoP and recommended that the MoP consider the implications of the bottom fishing footprint once it is agreed, including how new fishing should be considered (paragraphs 95 and 277, SC8 Report). 49. The SC endorsed the high/medium priority assigned to this recommendation.		MoP endorses recommendation 15 Work in ongoing	H/M	SC and MoP	1 - 3 years	Completed. A new CMM has been adopted MoP11 (CMM 17 (2024)).

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--	Recommendations nr 10, 12 and 13, above on the implementation of the Precautionary approach apply also for the purposes of the issues assessed under this criterion.	--							
16	The Panel recommends SIOFA CCPs to make every effort to progress from the current interim arrangements for bottom fishing to permanent rules, retaking discussions on this issue from the proposal tabled in 2019 or an updated version of it. Recommendation nr 9 above, on a corpus of SIOFA rules, applies also for the purposes of the issues at stake here.	H	50. The SC noted that, with the provision of BFIAs in the past years and of an updated footprint presented this year, the MoP could decide to move towards a more permanent management of bottom fishing. 51. The SC also noted its recommendation to the MoP noting that new fishing would need to be considered when the bottom fishing footprint is agreed (paragraph 95, SC8 Report).		MoP endorses recommendation 16 Work in ongoing	H	SC and MoP	1 - 3 years	MoP11 notes that SC9 provided some details on how to address new and exploratory fisheries. By adopting the bottom fishing footprint many provisions in the CMM 01 should not be interim anymore. A new CMM has been adopted MoP11 (CMM 17 (2024)).
17	The Panel recommends the MoP requests from the SC an evaluation of the frequency of VME encounters and of the compliance of fishing vessels with the reporting and move-on rule requirements.	H	52. The SC endorsed Recommendation Nr 17. 53. The SC recommended that the MoP consider this recommendation in conjunction with the outcomes of the VME workshop (paper SC-08-25), the analysis of available VME indicator taxa accidental captures data from the Observer and CatchEffort databases and their usability for setting VME encounter thresholds (paper SC-08-26) presented by the Secretariat at SC8, and the related discussions at SC8 (paragraphs 290-292, SC8 Report). 54. The SC endorsed the high priority assigned to this recommendation.		MoP endorses recommendation 17	H	CC and SC	1 - 3 years	See the SC workplan and the SC VME focused session at SC in 2025. Note the revised guidelines for annual national reports 2025 recommending higher resolution of VME incidental captures reporting. CC notes that this work is ongoing

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18	The Panel recommends that SIOFA CCPs expand their consideration of actions aiming at the conservation of biodiversity to fishing activities other than those using bottom gears, extending the concept of Impact Assessment to such activities as well.	M	55. Regarding Recommendation Nr 18, the SC agreed that fishing activities other than those using bottom gears may affect biodiversity and noted that it could include such considerations in its workplan if requested by the MoP.		MoP endorses recommendation 18	M	SC	3 - 5 years	Note the proposal of new observer logbooks for squid fishing from SC10.
19	The Panel recommends SIOFA CCPs to agree urgently on measures to reduce shark by-catches, in particular by implementing any mitigation measures that identified as effective by the 2023 specific workshop on sharks to take place under the aegis of the Scientific Committee, including precautionary catch limits for Portuguese dogfish. Recommendation nr 2 on the assessment of the status of shark stocks is also relevant for the issues discussed under this criterion.	H	56. The SC endorsed Recommendation Nr 19 and noted that it held extensive discussions on measures to reduce shark by-catch measures at SC8, including the outcomes of the Intersessional Workshop on Deepwater Sharks in SIOFA Area and the SC recommendations to the MoP (paragraphs 225–257, SC8 Report). 57. The SC endorsed the high priority assigned to this recommendation.		MoP endorses recommendation 19	H	SC and MoP	1 - 3 years (work ongoing)	Note the projects in the SC workplan and discussions in the SC10 report

№	Performance Review Recommendations	Review Panel Priority (H/M/L)	SC Recommendations (from SC-EXTRA1)	CC07 Recommendations	MoP10 Decision	MoP 10 Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline at MoP10	Notes and Current Status
20	The Panel recommends the SC effectively use the focused agenda item on seabird by-catch, decided by SC 8 in 2023 for future sessions, to identify necessary by-catch mitigation measures, including in trawl fisheries, as originally proposed at the time CMM 13 was adopted. SIOFA´s cooperation arrangements with ACAP, but also with CCAMLR, should be strengthened including for the purposes of this work.	M/L	58. The SC endorsed Recommendation Nr 20 and noted that it plans to hold a focused agenda item on seabird data collection and bycatch mitigation measures at SC9 (paragraphs 265 and 268, SC8 Report). 59. The SC endorsed the medium/low priority assigned to this recommendation.		MoP endorses recommendation 20	M	SC and MoP	3 - 5 years	This is now a standing item of the SC agenda. Work has substantially progressed during SC10.
21	The Panel recommends SIOFA carries out a review of the effect of effort limits applicable to relevant fleets to determine whether such limits constrain the fishing activity or not, and that a clear determination is made on the potential use of capacity or effort limits as a fishery management tool, especially with regard to fisheries conducted with gears other than bottom gears.	M	60. The SC noted Recommendation Nr 21 and that it could conduct the relevant analyses if requested by the MoP.		MoP endorses recommendation 21	M	SC and MoP	3 - 5 years	[The implementation of this recommendation has not started yet]

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22	The Panel recommends SIOFA CCPs consider incorporating the principles of a flag State performance self-assessment into their compliance monitoring scheme, including by tasking the CC with reviewing the annual national reports submitted by CCPs and currently reviewed only by the SC.	H/M	61. Regarding Recommendation Nr 22, the SC noted that it reviews CCPs' annual national reports to obtain the most recent information fisheries data and to identify any potential new trends or scientifically relevant issues.	83. Regarding Recommendation Nr 22, the Compliance Committee noted that flag State performance self-assessment is already part of the CMS, and that the Secretariat identifies any potential compliance issues from the annual national reports and replies to compliance questionnaire and presents these to the Compliance Committee for its consideration.	MoP endorses the recommendation and notes the comments of the CC and the SC that such assessments are already performed.	M	SC CC MoP	1 - 5 years (and ongoing)	Annual reports are reviewed annually at SC. The SIOFA CMS captures this recommendation
23	The Panel recommends SIOFA CCPs consider the adoption of binding application of the Port Inspection Scheme to all ports of every CCPs, without the condition to apply to those having areas of national jurisdiction adjacent to the Agreement Area.	H/M		84. Regarding Recommendation Nr 23, the Compliance Committee expressed its general support for reviewing the scope of the Port Inspection Scheme. 85. One CCP supported expanding the scope of the Port Inspection Scheme but not to " all ports of every CCP" as stated in the Panel's recommendation, and cautioned that any potential amendment to the current scheme should be carefully considered to avoid adding unnecessary burden on ports not adjacent to the Agreement Area. 86. Australia expressed its intention to prepare a proposal to amend CMM 2020/08 (Port Inspection), based on Recommendation	MoP agrees to review the scope of the PI scheme, and noted the recommendations by the CC	M	CC and MoP	1 - 3 years	CC notes the ongoing work led by Australia on the port inspection scope [MoP notes the ongoing work being led by Australia on the port inspection scope]

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				Nr 23 and the views expressed by CCPs, with the aim to present this proposal at CC8.					
24	The Panel recommends SIOFA adopts at least a minimum standard regarding inspection coverage of all fishing vessels carrying or landing resources of its competence which enter their ports.	H		87. Australia expressed its intention to consider Recommendation Nr 24 when preparing its aforementioned proposal to amend CMM 2020/08.	MoP agrees to consider minimum standards for PI coverage and noted the recommendations from the CC	M	CC and MoP	1 - 3 years	CC notes the ongoing work led by Australia on the port inspection scope [MoP notes the ongoing work being led by Australia on the port inspection scope]

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25	The Panel recommends SIOFA CCPs investigate possible landings or transhipments of SIOFA species at ports placed under the jurisdiction of non-CCPs, and if this is found to happen, initiate demarches with the relevant port States to request they become CCPs or cooperate with SIOFA as appropriate.	H		88. The Compliance Committee expressed its general support for Recommendation Nr 25. Some CCPs had different interpretations of the definition of "demarches" but agreed that, if possible landings or transhipments of SIOFA species are found to have occurred at ports placed under the jurisdiction of non-CCPs, the Secretariat should contact the relevant port States to request they become CCPs or cooperate with SIOFA as appropriate. 89. The Chairperson of the Review Panel clarified that the key element of the investigation is the need to investigate possible landings or transhipments of SIOFA species at ports placed under the jurisdiction of non-CCPs.	MoP endorses the recommendation, noting the comments of the CC	M/L	Secretariat CC MoP	3 - 5 years	The Secretariat sends annual invitations to coastal states to join the Agreement as CP or CNCP. The Secretariat reviews the inspections reports that are provided by other parties CC recommends that the Secretariat widens the scope of information it collects to conduct this analysis, including information already available from other organisations (e.g. FAO statistics)
26	The Panel recommends and encourages SIOFA CCPs to continue their efforts to agree on a SIOFA VMS in order to verify vessels activity in the Agreement Area. The Panel also recommends that CCPs adopt rules for the submission VMS data until such scheme is adopted.	H/M	62. Regarding Recommendation Nr 26, the SC noted that the sharing of VMS data with the SC could be useful for enabling the verification fishing location data for its data checking procedures.	90. Regarding Recommendation Nr 26, the Compliance Committee endorsed the recommendation to continue efforts to agree on a SIOFA VMS and noted that this work is ongoing. 91. One CCP suggested that Recommendation Nr 26 should be assigned a priority of 'H' rather than 'H/M'. 92. Another CCP suggested that the second	MoP endorses the recommendation, noting the statements of some CCPs that the rule of submission of VMS data, should only be considered if and when a SIOFA VMS is agreed upon	H	CC and MoP	1 - 3 years (ongoing)	MoP10 established the VMS WGs, the WGs met several times in the intersessional period. CC8 and MoP11 are reviewing the SSPs

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				recommendation, to adopt rules for the submission of VMS data, should only be considered if and when a SIOFA VMS is agreed upon.					
27	The Panel recommends SIOFA CCPs urgently seek to clarify the various issues of interpretation affecting the implementation of several MCS measures, in particular those related to CMM 06 on the IUU vessel list, CMM 07 on Vessel authorisation and CMM 14 on the HSBI procedures, including by seeking independent legal or technical advice if necessary.	H		93. The Compliance Committee did not express any views regarding Recommendation Nr 27.	MoP endorses the recommendation, and notes that there may not be a need to seek independent legal or tech advice	M	SC CC MoP	ongoing (3 - 5 years)	CMMs are reviewed by the MoP and its subsidiary bodies
--	With regard to SIOFA´s observer programme, and in general with regard to possible technical improvements for the standing measures, Recommendation nr 9 on a corpus of SIOFA	--							

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	CMMs applies also for the purposes of the issues assessed under this criterion								
28	The Panel recommends including in the agenda of the Compliance Committee a specific standing item on follow-up actions in the framework of the CMS for the previous year or years.	H		94. The Compliance Committee endorsed Recommendation Nr 28 and noted that the review of follow-up actions is already part of its CMS framework.	MoP endorsed the recommendation, and noted the comments made by the CC.	H	CC	ongoing	The CC included a dedicated item on its annual agenda. CC8 considered document CC-08-INFO-03.
29	The Panel recommends SIOFA CCPs agree on a review of CMM 11 on a Compliance Monitoring Scheme in order to facilitate its interpretation, taking into account the changes proposed by this Panel, including to the CCR template and the rules regarding follow up action on infringements identified in previous years.	H/M		95. The Compliance Committee noted Recommendation Nr 29 and that the review of CMM 2020/11 (Compliance Monitoring Scheme) is part of its ongoing work. The Compliance Committee agreed to consider the Review Panel's views as part of its CMS review process.	MoP endorsed the recommendation, and notes that work is on-going.	H/M	CC MoP	1-3 years	A new template has been agreed by CC8. CC8 recognized the need for capacity building within CCPs' delegations on the usage of the new CCR template. This is envisaged to be undertaken within one month of the 2025 submission deadline.

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30	The Panel recommends SIOFA CCPs task the Secretariat with an assignment as high priority for the Compliance Officer the strengthening of the Secretariat´s technical capacity to examine, analyse and verify the data collected for the purposes of the Compliance Monitoring Scheme.	H/M		96. The Compliance Committee expressed agreement with Recommendation Nr 30.	MoP endorses this recommendation.	H	Secretariat (ES and CO)	ongoing work (continuous)	CC8 is following this recommendation. A Compliance Officer has been recruited in 2023. CC8 noted that additional activities to enhance the Secretariat capacity in relation to the Compliance Monitoring Scheme would evolve over time.
31	The Panel recommends that SIOFA CCPs task the Secretariat to assess the capacity building needed in order to improve implementation of their obligations by the CCPs, prioritizing the most urgent and providing options to ensure appropriate assistance is provided to CCPs which so require.	M	63. The SC endorsed Recommendation Nr 31 and noted that it should be considered in conjunction with Recommendation Nr 6. 64. The SC endorsed the medium priority assigned to this recommendation.	97. The Compliance Committee endorsed Recommendation Nr 31 and noted that the identification of capacity gaps is an essential part of an effective CMS.	MoP endorses this recommendation. And notes that capacity building was already discussed	H	Secretariat CC SC MoP	1 - 3 years	CC8 recognized the need for capacity building within CCPs' delegations, which in part could be addressed by the workshop on the usage of the new CCR template. See paper SC-10-24.

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32	The Panel recommends SIOFA CCPs discuss the possible adoption of a new measure on a Catch Documentation Scheme, focusing, in particular, on CCAMLR´s DCD, and explore options for its implementation. The Panel recommends SIOFA strengthens its cooperation with CCAMLR in this regard, including by requesting capacity building support for the Secretariat so that it can contribute to future joint work by the two organisations.	H/M		98. The Compliance Committee noted that Recommendation Nr 32 pertains to a Catch Documentation Scheme (CDS) for toothfish, noted that all SIOFA CCPs fishing for toothfish are Members of CCAMLR, where there is already a CDS for toothfish, and are thus already required to document catches of toothfish in the SIOFA Area, and agreed that it is therefore not necessary to establish a SIOFA CDS for toothfish, rather, it is adequate to continue its ongoing cooperation with CCAMLR.	MoP agrees with the recommendation made by the CC, and noted that it is therefore not necessary to establish a SIOFA CDS for toothfish, rather, it is adequate to continue its ongoing cooperation with CCAMLR	H	SC, CC and MoP	ongoing	Collaboration with CCAMLR is ongoing under the SIOFA-CCAMLR Arrangement.
33	The Panel recommends SIOFA CCPs consider the option of developing a SIOFA Reporting Manual to replace the present table of reporting requirements provided for in the organisation´s website. Suggestions as to the structure and contents have been provided in our assessment under this criterion.	M	65. The SC endorsed Recommendation Nr 33 and supported improving communication around data collection, noting that the currently ongoing project on Harmonisation of Scientific Observer Programmes (Annex F, SC8 Report) would address some aspects of this recommendation. 66. The SC endorsed the medium priority assigned to this recommendation.		MoP endorses the recommendation	M	Secretariat, CC, SC	3 years	Project SEC2022-OBS1 and the observer harmonisation workshops (WS2024-OBS and OBS2) have made recommendations for the consideration by SC10 on observer manuals and data reporting systems.

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34	The Panel recommends SIOFA CCPs consider the option of establishing an IT-based data management platform taking into account the experience gained in the design and use of such platforms in other organisations, including in-built protocols for data verification, quality checks and the protection of confidential data. A decision to explore this option should only be taken if CCPs accept and assume the need for investment on capacity building as required.	H	67. Regarding Recommendation Nr 34, the SC noted that it would welcome any systems and processes that would improve the quality of data and allow the SC to conduct verification and quality checks. 68. The SC further noted that it has discussed the protection of confidentiality of data in past SC meetings and that processes that would protect confidentiality would be in line with recommendations that the SC has made previously.		MoP endorses the recommendation. And request the Secretariat to prepare a paper describing implementation possibilities (to SC and MoP)	H	Secretariat, SC, CC	1 - 3 years	The Secretariat has an in-house IT-based platform for managing data, datasets (metadata), and the fisheries (C&E, observer, vessels) databases. This was not designed to have an interface from outside of the Secretariat. The Secretariat currently has a range of data related procedures: data submission, data checks, data release and data backup that could be shared through the SIOFA website.
35	The Panel recommends, in case SIOFA CCPs are not prepared to implement an IT data platform as per Recommendation nr 34, urgent action is taken to ensure appropriate data verification protocols and quality checks are established.	H	69. Regarding Recommendation Nr 35, the SC noted that data verification protocols and quality checks are already in place, but acknowledged that they could be enhanced.		The MoP notes the comments of the SC, and that the work is on-going	-		ongoing	The Secretariat notes that it currently has data check procedures for data submissions. Such procedures could be shared through the SIOFA website or circulated to CCPs.

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36	The Panel recommends SIOFA CCPs agree to share data regarding the implementation of their fisheries control obligations and utilise such data in the framework of CMM 11´s Compliance Monitoring Scheme in order to assess whether SIOFA´s control-related measures are effectively implemented.	H/M		99. The Compliance Committee did not express any views regarding Recommendation Nr 36.	The MoP endorses the recommendation. The MoP noted that further work was necessary on the CMS process.	H/M	CC Secretariat	1 - 3 years	Partially implemented by the Compliance Assessment Process. It will further be reinforced with the new CCR template.
37	The Panel recommends SIOFA CCPs consider strengthening the use of intersessional decision procedures or inter-sessional working groups to facilitate the work of SIOFA as appropriate, in order to focus MoP discussions and make better use of the time available.	M/L	70. Regarding Recommendation Nr 37, the SC noted that it has trialled and recommended the continuation of a new combined SC meeting format, supplemented by workshops and focused agenda items (paragraph 337, SC8 Report).		MoP endorses the recommendation, and notes that Inter-Sessional decision process should used only when exceptional	M / L	MoP	1-5 years	Ref MoP10 decision which address the recommendation.

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38	The Panel encourages SIOFA CCPs to continue and if needed intensify dialogue on matters of concern to different CCPs, where consensus has not been achieved in order to find a common view which can be satisfactory to all CCPs. In particular, the Panel recommends to address bottom fishing activities in the Saya de Malha Bank, the scope of boarding and inspection procedures under CMM 14 and the issue of managing overlapping obligations for vessels arising from both SIOFA and neighbouring RFMOs, in particular the IOTC.	M			MoP endorses the recommendation	M	MoP	ongoing	MoP11 notes that the issue of bottom fishing on Saya De Malha has been discussed at several MoPs without an agreed way forward.. SIOFA and IOTC have been working on establishing a formal cooperation framework but are already cooperating on several matters (data, IUU fishing)
39	The Panel recommends SIOFA CCPs continue to review, clarify and amend as appropriate the relevant data rules or provisions so that all CCPs as well as observers and the general public have better access to data and information for the purpose of discussion and decision-making.	M	71. The SC noted that it has held discussions on rules of data access and dissemination at SC8 (paragraphs 96–108 and 114–119 and Annex E, SC8 Report) and that the development of standardised reports such as fisheries summaries and ecosystem reports should also facilitate better access to data and information.		MoP endorses this recommendation, and notes that this work is ongoing	M	SC, CC and MoP	ongoing	Public data access is governed by CMM 03. Work has been done to improve the access to the RAV information, with the addition of vessels details pages

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40	The Panel recommends SIOFA CCPs task the Secretariat to review the documents and materials on the SIOFA website and make necessary tunings in accordance with any new data rules on dissemination and any relevant decisions of the MoP.	M			MoP supports the recommendation	M	Secretariat	ongoing	The Secretariat notes that the titles and abstracts of all SC restricted access documents have been made public on its website. In addition, versions of SC project reports (where appropriate) have also been made available publicly on the SIOFA website.
41	The Panel recommends SIOFA CCPs engage in discussion on the rules, standards and procedures regarding the granting of CNCP status, including the clarification of the requirements for admission or CNCPs status renewal, in order to ensure a consistent reviewing approach. The adoption of clear rules as well as an application template is also recommended, providing CNCP with general instructions on the required information, actions, and any other criterion.	M			MoP notes that the procedure for becoming CNCP is in the SIOFA RoP, and notes that further discussion would continue if necessary.	L	Secretariat MoP	ongoing	To date, the MoP assesses the CNCP status at its annual meetings. The SIOFA RoP are currently used for this task. MoP recommends that CNCPs attend to the Compliance Committee meetings.

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--	Recommendations nr 11, 20 and 32 on the strengthening of cooperation between SIOFA and CCAMLR also apply to the issues assessed under this criterion.	--							
42	The Panel recommends SIOFA CCPs consider strengthening cooperation with the IOTC, SWIOFC, SEAFO, SPRFMO, and CCSBT, as appropriate.	H	72. Regarding Recommendation Nr 42, the SC noted that for some stocks in some areas, the scientific information and methods applied by these regional fisheries management organisations (RFMOs) may be relevant to SIOFA and cooperation with them would be beneficial.		MoP endorses this recommendation, the MoP notes that cooperation with CCAMLR and other bodies (eg FAO) is also necessary.	H	SC, CC, MoP Secretariat	ongoing	Secretariat has been working intersessionally to conclude the formalisation of cooperation between SIOFA and IOTC. The Secretariat has been working to formalize cooperation with IOC, however its endeavour has not been successful. The Secretariat participates in meetings remotely or in-person of neighbouring RFMOs and CCAMLR to the extent possible.
43	The Panel recommends SIOFA CCPs include a prerequisite in their consideration of CMM new or amended proposals the review of relevant measures adopted by neighbouring international organizations in order to promote a coherent approach and compatibility of fisheries management across RFMO	M			MoP does not endorse the recommendation, and notes that SIOFA should develop its measures independently, especially if they are more effective than those of other RFMOs.				N/A

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	boundaries.								
44	The Panel recommends SIOFA CCPs consider setting up a section on the SIOFA website dedicated to SIOFA´s implementation of Article 13 of the Agreement, presenting the assistance that may be provided individually or collectively by CCPs to meet the special requirement of CCP developing States including, in particular, the least developed among them, and small island developing States.	M	73. Regarding Recommendation Nr 44, the SC noted that it could be tasked with capacity building in scientific areas. The SC noted that the FAO DSF Project may also share objectives that are aligned with this recommendation.		MoP endorsed this recommendation, and notes the comments provided by the SC	M	SC, CC, MoP Secretariat	3 years	The Secretariat notes that the SIOFA website is capable of supporting a dedicated section for the implementation of article 13 of the Agreement, and can be implemented once the content is advised by the MoP. CC8 recommends that the Secretariat develop a paper for CC9 to identify areas where developing states require technical assistance or otherwise in the implementation of obligations arising from the Agreement. This should include the identification of mechanisms to provide such assistance. The Secretariat should consult CCPs for the development of this paper.

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45	The Panel Recommends that SIOFA CCPs agree on a periodical review by the MoP of the organisation´s implementation of Article 13 of the Agreement and encourage CCP developing States to proactively express their needs, challenges and special requirements affecting their contribution to SIOFA´s work. The MoP may thereafter consider establishing a fund dedicated to these purposes or expanding the scope of the current one.	M/L			MoP endorses this recommendation, and notes that CCPs should report issues in regard to the implementation of article 13	L	MoP	ongoing	Some financial support is provided to developing CCPs under article 13 for attendance to SIOFA meetings. No specific support from SIOFA is provided to developing States bordering the Area that are not CCPs. The MoP will establish a standing agenda item relevant to article 13, and tasked the Secretariat to provide a paper on this topics at its SC/CC/MoP meetings.
--	Recommendations nr 6, 31 and 34 on various areas where capacity building assistance could be provided by SIOFA also apply to the issues assessed under this criterion.	--							

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46	The Panel recommends SIOFA CCPs urgently agree on a strategic financial planning for the medium term taking into account the costs incurred over recent years for the funding of the Scientific Committee work, and commit to a fairer sharing of these costs, including by contributing in kind CCP scientific resources.	H/M	74. Regarding Recommendation Nr 46, the SC noted that strategic financial planning for the medium-term would allow the SC to plan and prioritize its work and that the Medium-Term SC Workplan (Annex F, SC8 Report) contributes to the achievement of this recommendation.		MoP endorses this recommendation	H	CCPs MoP	1 - 3 years	At its annual meeting, the MoP adopts the budget for the coming year and considers the forecast budget for at least one additional year. The SC has extended its workplan and associated budget to cover a 3-year timeframe.
47	The Panel recommends SIOFA CCPs discuss in depth the strategic plan presented by the Executive Secretary in 2022 but extend their discussions not just to the funding aspects of it, but also to its role. For this purpose, an analysis should be carried out of the Secretariat´s degree of autonomy to identify areas where it could be allowed to operate in a more agile way.	M	75. Regarding Recommendation Nr 47, the SC noted that the creation of the Science Officer position and the appointment of Dr Marco Milardi has greatly enhanced the ability of the SC to advance its work programme.		MoP endorses this recommendation, MoP notes that is it part of an ongoing process, and notes that the addition of one SO and one CO enhanced the capacity of the Secretariat	M	SC, CC, MoP Secretariat	ongoing	Note the SC workplan CC8 notes that this recommendation is more relevant to the MoP. The role of the Secretariat is determined by the MoP, and the SIOFA RoP. The RoP relevant to the Secretariat have not changed.

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48	The Panel recommends SIOFA CCPs work towards a clear agreement on the use of consultants – or not – for the offices of subsidiary body chairpersons. Were the decision taken to continue using the current contractual arrangements a robust evaluation of the workload and appropriate funding should be agreed, in order to ensure these offices can be effectively and efficiently discharged.	H	76. Regarding Recommendation Nr 48, the SC noted the decisions by the MoP to appoint Mr Alistair Dunn as an independent SC Chair and to extend his term, as well as SC8's recommendation that his term be further extended for two years (paragraphs 361– 363, SC8 Report). 77. The SC had no advice regarding Recommendations Nrs 14, 23–25, 27–30, 32, 36, 38, 40–41, 43, 45, and 49.		MoP has so far agreed to this arrangement, and also notes that further discussion on the workload and appropriate funding is necessary.	H	SC, CC, MoP	ongoing	CC8 notes that this recommendation is more relevant to the MoP. The SIOFA budget provides defined funding for the use of external consultants.
49	The Panel recommends that the term of office of the MoP Chairperson be extended to 2 years at least, to ensure continuity in proceedings.	M/L			The MoP notes this recommendation, and notes that further discussions are planned during the MoP10.				There is no record about this recommendation in MoP10 report To be potentially discussed by MoP11 (RoP)

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0	As a general procedural consideration, the Panel recommends that SIOFA CCPs agree on a clear process for the follow-up of this Performance Review Including the following elements: 1. A formal decision on which Recommendations are accepted; 2. a plan for implementation with time targets; 3. a regular, periodical review of implementation of such accepted Recommendations; 4. a renewal of the Performance Review process within an appropriate time frame, which we would recommend could be 5 years from now, given the fact this Review is the first such process carried out by the organisation.				MoP will review the implementation of the 1st SIOFA performance review at MoP12.				N/A

Annex J – Summary of the SIOFA SC Workplan 2025–2029

Projects in the 2025-2029 Workplan

Projects that were planned at SC9 and have been already initiated are listed in https://siofa.org/science/sc-works. Note that some of these are ongoing projects in subsequent years.

Projects that were planned at the last SC and that could be initiated in the upcoming years are listed below in Tables 6-10. See paper SC-10-35-Rev1 for a full account of project descriptions.

Table 3: 2025 projects identified in the SC10 workplan (black). Priority indicates the priority assigned by SC10.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
DWS-2024-01	EU (Roberto Sarralde)	Quantitative assessment of Portuguese dogfish catch and determination of the level of sustainable catch (a continuation of DWS-2023-01)	In kind	EU internal funding	Ongoing	-
ALF-2024-01	JPN (Takehiro Okuda)/COK (Stephen Brouwer)	Alfonsino age protocol development	Already allocated in 2024	MoP	Ongoing	-
ALF-2025-01	JPN (Takehiro Okuda)	Alfonsino age and growth	25,000 €	MoP	Planned	6.10
CLI-2025-01	AUS (Trent Timmiss)	Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts	25,000 €	MoP	Planned	3.50
NAN-2025-01	FAO (Anthony Thompson)/SIOFA Secretariat (Marco Milardi)/FR-OT (Alexis Martin)/Paul Clerkin	Nansen cruise in the SIOFA area	None needed	FAO Nansen	Planned	None needed
OBS-2025-01	FR-OT (Nicolas Gasco/Charlotte Chazeau)	Development of a SIOFA scientific observer data collection manual	15,000 €	MoP	Planned	6.60

Table 4: 2026 projects in the SC10 workplan (black) and potential projects that will be developed and prioritized at SC11 (red). Priority scores indicated are from SC10 and may be updated at SC11.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2026-01	JPN (Takehiro Okuda)	Alfonsino stock assessment (was formerly scheduled for 2025)	50,000 €	MoP	Planned	7.80
ALF-2026-02	JPN (Takehiro Okuda)	Alfonsino acoustics	10,000 € (+55,000)	MoP + (COK)	Planned	5.00
SAI-2026-01	TBD	Development of management options for preventing SAIs on VMEs with a focus on the precautionary approach, spatial management measures, move-on rules, and identifying risks for determining appropriate measures	25,000 €	MoP	TBD	TBD
HSS-2026-01	TBD	Further development of Harvest Strategies including additional objectives such as bycatch, fisheries impacts, benthic impacts, etc., as part of harvest strategies	20,000 - 40,000 €	MoP	TBD	TBD

Table 5: 2027 planned projects in the SC10 workplan that will be developed and prioritized at SC11 (red).

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2027-01	TBD	Development of harvest strategies for alfonsino and other primary SIOFA species including stock monitoring and the evaluation of performance indicators	20,000 - 40,000 €	MoP	TBD	TBD
OIL-2027-01	Chinese Taipei	Update on the oilfish/escolar CPUE	In kind	National funding	TBD	TBD
BPA-2027-01	COK / JPN / AUS	Develop draft management, research and monitoring plan for BPAs	In kind	National funding	Planned	TBD
OBS-2027-01	TBD	Development of an accreditation process for SIOFA scientific observer programmes	5,000 – 10,000 €	MoP	TBD	TBD
OBS-2027-02	TBD	Documentation describing how the SIOFA scientific observer program is structured and run	5,000 – 10,000 €	MoP	TBD	TBD

Table 6: 2028 planned projects in the SC10 workplan that will be developed and prioritized at SC11 (red).

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
BYC-2028-01	TBD	Bycatch definitions	15,000 €	TBD	Planned	TBD
ORY-2028-01	COK (Stephen Brouwer)	Orange roughy acoustics	TBD	MoP	TBD	TBD
ORY-2028-01	COK (Stephen Brouwer)	Orange roughy ageing	TBD	MoP	TBD	TBD

Table 7: 2029 planned projects in the SC10 workplan that will be developed and prioritized at SC11 (red).

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ORY-2029-01	COK (Stephen Brouwer)	Orange roughy stock assessment (2028-2029)	TBD	TBD	TBD	TBD
BPA-2029-01	TBD	BPA monitoring (evaluate the impact of the closures)	TBD	TBD	TBD	TBD

Annex K – SIOFA SC Budget forecast 2026–2028

Budget forecast study 2026-2028

Scientific budget Proposal 2025-2027

The Executive Secretary, as mandated by MoP8's paragraph 194, has developed an updated provisional three-year plan (2024-2026) for the Secretariat's expenses related to the Scientific Committee and its working groups. The proposed budget adheres to Regulation 3 of the Financial Regulations of the Meeting of the Parties and has been estimated in euros.

Item 3: Meeting Support – Scientific Committee and Working Groups

- In 2026, SC11 is planned to be hosted in La Réunion if there is no proposal to host the meeting.

- A break-down of the estimated costs can be found in Table 2.

- In 2027 and 2028, the location for the SC and WGs have yet to be determined, and may be held in any member country, or failing that, in Réunion.

Table 2: Predicted Costs for Meeting Support – SC and WGs (Item 3)

	2026	**2027**	**2028**
3.1 Venue, Catering	28 000 €	29 400 €	30 870 €
3.2 Secretariat travel and accommodation	20 000 €	21 000 €	22 050 €
3.3 Support staff	13 230 €	13 890 €	14 585 €
3.4 SCC Travel and Accommodation	15 000 €	15 750 €	16 540 €
3.5 Video & broadcasting	7 350 €	7 720 €	8 110 €
Item 3 Total	**83 580 €**	**87 760 €**	**92 155 €**

Item 3.1 (Venue, catering)
- The price for 2026, 2027 and 2027 will vary depending on the location of the meetings, however based on the cost for previous years and preliminary scoping conducted by the Executive Secretary. It is estimated that the price will be approximately 28 000€ increasing each year of 5 % due to the inflation and the rate change.

Item 3.2 (Secretariat travel and accommodation for meetings)
- For 2025, the price of economy travels and accommodation for three SIOFA staff members in Concarneau has been assessed to 17,500€ and has been completely expensed.

- For 2026 to 2027, the price will vary depending on the location of the meetings, however considering the upgrading of the flight costs, the Executive Secretary recommends a budget for 2025 of 17 500€.

Item 3.3 (Support staff)

- Support staff include a rapporteur, and eventually, assistants. This is estimated to cost approximately of 13 230 € for 2026, based on previous years.

Item 3.4 (SC Chairperson and Vice-Chairperson travel and accommodation)

- The cost of travel and accommodation for the SC Chairperson and Vice-Chairperson will be covered if they are from a developing country or if the SC Chairperson is under contract. These costs are estimated to 15 000 € for 2026. This could be paid, if the MoP agree, from the reserve fund.

Item 3.5. (Video and broadcasting installation)

This item includes additional technical and hardware provision for the meeting room, where additional displays are usually required. MOP10 decided to avoid hybrid meetings as far as possible, to encourage face-to-face meetings and limit the high cost of hybrid meetings. However, a video stream of the SC is provided for : (i) Scientific consultants to present their work to the Scientific Committee without incurring travel costs to SIOFA and (ii) for allowing remote participants to observe and listen to the meeting. This provision requires the supply of technical equipment. The cost of the audio-video-broadcasting installation alone is estimated at € 7,350, based on previous years.

Item 9: Contracts for Specific Services

The Scientific project for 2025-2026 are following with the estimate costs associated.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2025-01	JPN	Alfonsino Age and Growth	25,000 €	MOP12	Planned	
CLI-2024-01	AUS	Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts	25,000 €	MoP12	Planned	
OBS-2025-01	FR (OT)	Development of SIOFA Scientific Observer data collection manual	15,000 €	MOP12	Planned	

The estimates for costs listed under Item 9 are given below (Table 3).

Table 3: Predicted Costs of Contracts for Specific Services (Item 9)

	2026	**2027 (indicative cost)**	**2028 (indicative cost)**
9.1 Research activities (6)	*65,000 €*	*115,000 €*	*60 000 €*
9.2 SC Chairperson	44,000 €	46.000 €	48 000 €
9.3 Consultant/ expert/ service outsourced (5)	10,000 €	10,000 €	10,000 €
Item 9 Total	**119,000€**	**156,000€**	**118,000€**

(5) Planned for the recruitment of short-term experts or outsourced to a specialised local company able to support the Secretariat, on specific issue that could scientific, but also lawyer or informatic

Item 9.1 (Research activities)

- The estimated cost of consultants for 2026 is 119,000€. The proposed budget funds the projects the projects. ALF-2025-01, CLI-2025-01 and OBS-2025-01

- For 2027, the proposed budget funds the projects ALF-2026-01, ALF-2026-02, SAI 2026-01, HSS 2026-01

- For 2028, the proposed budget funds the projects ALF-2027-01, OBS-2027-01, OBS-2027-02

Item 9.2 (SC Chairperson)

- The MoP 10 decided to renew the role of SC Chairperson for 2 years (i.e., until the MoP12 , July 2025)

- The Executive Secretary suggests considering an average inflation costs of 5% to be allocated for the SC Chairperson, if in 2025 any SC Chairperson is not nominated by a CCP and if the MoP agrees to renew the SC Chairperson contract for 2 years more.

Item 9.3 (Consultant/Expert/Service Outsourced)

- Costs for contracting services that are not mandatory scientific in nature were estimated at 10,000€ for each year. This budget line has not been validated by MoP 11 and thus, there is no budget for any service outsourced in 2025.

- The budget 2024 supported by a transfer = authorised by the Chairperson allowed the Secretariat to recruit a consultant to upgrade the SIOFA website, in order to respond positively to some request from CCP.