



8th Meeting of the Compliance Committee (CC8) and 11th Meeting of the Parties (MoP11)

Seoul, Republic of Korea, 26–28 June 2024 and 01-05 July 2024

MoP-11-05

Report and Recommendations of the 9th Annual Meeting of the SIOFA Scientific Committee

The SIOFA Secretariat on behalf of the SIOFA Scientific Committee

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Abstract	<p>The 9th Annual Meeting of the SIOFA Scientific Committee (SC9) was held at the Berkeley Hotel Pratunam, Bangkok, Thailand, 18–27 March 2024.</p> <p>The meeting was an in-person meeting, with an online streaming (listen only) service provided for delegates that were unable to attend.</p> <p>The following paper contains the report of the meeting. The report was circulated and published on the meeting page of the SIOFA website on 4 April 2024.</p> <p>The recommendations listed in the first pages of this paper are SC9 recommendations specifically to the SIOFA MoP, as listed in the report.</p>

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² Documents available only to members invited to closed sessions.

Recommendations

The SIOFA Scientific Committee recommended that the Meeting of the Parties:

- **note** the revised guidelines for the Submission of Annual National Reports given in SC-09-INFO-10-Rev1.
- **endorse** the Overview of SIOFA Fisheries 2024 (SC-09-14-Rev1) and requested the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.
- **note** the average catch values in Table 1 [of the SC9 Report].
- **note** that while the submission of observer data is not a requirement for pelagic fisheries, it would be valuable to have this information available in the SIOFA databases.
- **endorse** the SIOFA Ecosystem Summary 2024 (SC-09-15-Rev1) and requested the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.
- **require** that a Fisheries Operation Plan (FOP) be submitted to the SC for approval, and that this be in the format of the template given in Annex G.2. This would ensure the appropriate information was supplied, would enable comparisons between FOPs, and would ensure fair evaluation of each FOP.
 - a. require FOPs to be submitted to the annual meeting of the SC for endorsement.
 - b. request the SC to review each FOP, including the DCAP, and the data and reports from relevant ongoing or completed new and exploratory fisheries, and provide advice and recommendations to the MoP.
 - c. note that the SC recommended the evaluation criteria in Annex G.3 be used by the SC to assess the FOP and determine if the FOP is acceptable, requires modifications, or is not accepted.
 - d. note that the FOP should cover a maximum period of three years, but could be rolled over a maximum of two times, pending the evaluation and approval by the SC at each roll over.
 - e. note that once a FOP expires after 9 years, if the SC has not provided advice to the MoP on how to progress the fishery to a fully commercial operation (thereby being recognised as an established fishery), a new FOP should be submitted to the SC for evaluation.
 - f. the proponents of the exploratory fishery be required to submit annual updates of catch, effort and research work annually to the SC.
- **define** research cruises as single trips conducted by a dedicated research vessel under the scope of an SC activity, where the sale of commercial catch is not the primary objective of the trip.
- **develop** a specific “research cruise CMM” that is separate from the process that is proposed for exploratory fisheries. This would ensure that these activities are appropriately sanctioned prior to the activity being undertaken and subsequently reported. This process should ensure that:
 - a. all research cruises require SIOFA authorisation.
 - b. a research cruise plan is submitted to the SIOFA SC for approval prior to conducting the cruise.
 - c. the MoP considers the recommendation of the SC and authorises the cruise.

- d. the data are submitted to the Secretariat within 9 months of the end of the cruise.
 - e. the results of the research cruise are reported to the SC and the MoP.
 - f. no subsequent research cruise will be permitted by the organisation undertaking the cruise if they do not submit the data emanating from the cruise to the SIOFA Secretariat and a final detailed cruise report is submitted to and accepted by the next SC or within 1 year of completing the cruise.
- **consider** whether paragraph 2c of CMM 03(2016) (Data Confidentiality) should be updated in light of the fact that the SIOFA bottom fishing footprint has now been adopted.
 - **note** that it has considered the potential management objectives and performance indicators for orange roughy that were drafted by the WS2023-HSMO and further refined the performance indicators as described in Annex H.
 - **note** that the development of breakout rules would be a key part of the development of harvest strategies, and that criteria would be developed as part of this process.
 - **note** that it has considered the potential management objectives and performance indicators for toothfish that were drafted by the WS2023-HSMO and further refined them as described in Annex I.
 - **note** that it [the SC] had updated the timeline [of harvest strategies development] by adding the implementation status of each task (Annex K).
 - **note** the proposed draft agenda [of the 2nd Joint MoP-SC Harvest Strategies Workshop] in Annex L.
 - **note** that there was no new information that necessitated any change to the SC's previous advice [on orange roughy] based on the stock assessment from SC7.
 - **note** that the current two-stock approach should be the default assumed stock structure for updating the biological parameters and conducting the next stock assessment for orange roughy in 2025.
 - **note** that the SC has no additional management advice on orange roughy.
 - **endorse** the SIOFA fisheries summary for orange roughy 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
 - **note** that there was no new information that necessitated any change to the SC's previous advice [on alfonsino] based on the most recent stock assessment at SC5.
 - **note** that the eastern and western areas should be treated as separate stocks of alfonsino assessment until further information is received.
 - **endorse** the SIOFA fisheries summary for alfonsino 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
 - **note** that the trend analysis should be used for setting the respective catch limits for the data-limited toothfish MUs [management units] of DC [Del Cano Rise] and SIR [South Indian Ridge].
 - **note** that in the absence of a previous catch limit, the average 5 years' catch is used as a starting point for the SIOFA trend analysis in accordance with the interim harvest control rules endorsed by MoP10.
 - **note** that catch limit advice had been provided for SIR. The SC recommended that the SIR management area should be the area bounded by the box defined in Table 4 defined below, with a catch limit of 78 t in 2025 based on the SIOFA trend analysis.
 - **note** that catch limit advice had been provided for DC. The SC recommended a catch limit of 44 t in 2025 based on the SIOFA trend analysis.

- **endorse** the SIOFA fisheries summary toothfish 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
- **note** that there was no new information for oilfish and escolar that necessitated any change to the SC's previous advice made on the basis of the characterisation at SC8.
- **endorse** the SIOFA fisheries summary for oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
- **endorse** the SIOFA fisheries summary for hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
- **endorse** the SIOFA fisheries summary for common mora (*Mora moro*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
- **update** the list of species at high risk and of concern in Annex 1 of CMM 12(2023) (Sharks) by incorporating the name change of Plunket's shark. The proposed revision to CMM 12(2023) Annex 1 is attached as Annex N.
- **note** the upcoming trial on the impact of using alternative trace types on the bycatch rate of sharks and target species.
- **note** the declining trend in nominal CPUE for *Dalatias licha* and *Deania calceus*.
- **note** that significant catches of species that are managed by SIOFA but taken as bycatch by fisheries managed by other RFMOs, such as IOTC, are not reported to SIOFA, as they are only reported to those RFMOs.
- **note** that SIOFA demersal and pelagic longline fisheries have implemented a number of ACAP best practices for mitigating seabird bycatch, but that the updated best practice from ACAP is that the implementation of line-weighting, night-setting, and bird-scaring lines in combination, which is not currently required by SIOFA CMMs, could further improve SIOFA's mitigation measures.
- **note** that many ACAP best practices for mitigating seabird bycatch have not been officially implemented in SIOFA trawl fisheries, although many are currently in use by some flag States, and that mandating such practices so that they are more widely used would further improve SIOFA's mitigation measures.
- **note** that it intended to hold discussions on options for recording of VME taxa by line or line segment at a focused session at SC10.
- **consider** whether it would be appropriate to forward any SIOFA spatial management measures to the CBD world database on MPAs and OECMs or take any other related conservation measures.
- **note** that it would consider the data submission forms for squid jigging vessel logbooks and observer logbooks at its next meeting.
- **note** that a trial of the new forms for data submission would take place in the coming year. The SC would then consider the results of the trial at its next meeting before formulating its recommendations to the MoP on the adoption of the forms.
- **note** that a CMM on a SIOFA Observer Programme should include elements such as a Code of Conduct for an observer scheme, defined roles and responsibilities of observers, and categories of data that should be collected by observers.
- **note** that specific sampling mechanisms and requirements could be defined in an observer manual that is developed by the SC. This approach would allow greater flexibility in setting and revising specific scientific sampling priorities.

- **consider** mandatory and higher levels of observer coverage, noting that information on distribution and demography and potential impacts on non-target and associated or dependent species is reliant on observer information that is, in some fisheries, not available or very sparse.
- **note** that the SC had provided a summary of progress on the recommendations of the SIOFA Performance Review Panel in 2023 that were adopted at MoP10 (Annex P).
- should **consider** the type of fishing gear, the areas proposed to be fished, potential benthic impacts, the species proposed to be caught and the amount of catch proposed to be taken before approving the R.V. Dr Fridtjof Nansen research cruise.
- **adopts** climate change as a standing item on its agenda.
- **identifies** what advice it would like from the SC on the potential implications of climate change.
- **makes** funding available for the climate change-related work in the SC workplan from 2025.
- that the next SC meeting, including any focused agenda topics, **be held** for 8 days from 17–26 March 2025.
- **note** that the location of the next SC meeting was not yet agreed.
- **consider** this offer [by SIODFA to provide information related to deep-sea fisheries in the Southern Indian Ocean dating back to 1999] and **task** the SC to consider how to utilise this information. The SC suggested that a first step could be to catalogue the information, including identifying any data that are confidential.
- **amend** the Rules of Procedure to add a deadline for the submission of working papers to the SC. The new provision would become paragraph 5bis under Part V - Preparation for Meetings, Rule 10 - Preparation for Ordinary Meetings, and would read as follows:

Proposals to be discussed at the Scientific Committee shall be submitted to the Secretariat no less than 30 days before the date fixed for the opening of the Scientific Committee. The Secretariat shall make proposals and amendments available to Official Contacts as soon as possible after receipt but no later than 25 days before the beginning of the meeting.

- **amend** the Rules of Procedure to add a deadline for the submission of information papers that is specific to the SC. The new provision would become paragraph 6bis under Part V - Preparation for Meetings, Rule 10 - Preparation for Ordinary Meetings, and would read as follows:

Any other document to be tabled at the Scientific Committee shall be submitted to the Secretariat no less than 14 days before the date fixed for the opening of the meeting. The Secretariat shall make such documents available to Official Contacts as soon as possible after receipt but no later than 10 days before the start of the meeting.



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Southern Indian Ocean Fisheries Agreement
Accord relatif aux Pêches dans le Sud de l'Océan Indien

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

Berkeley Hotel Pratunam, Bangkok, Thailand

18–27 March 2024

AGENDA ITEM 1. OPENING.....	5
1.1 WELCOME FROM THE SCIENTIFIC COMMITTEE CHAIR.....	5
1.2 INTRODUCTION OF PARTICIPANTS.....	5
1.3 INTRODUCTION TO THE MEETING FACILITIES AND MEETING ARRANGEMENTS.....	5
AGENDA ITEM 2. ADMINISTRATIVE ARRANGEMENTS.....	5
2.1 ADOPTION OF THE AGENDA.....	5
2.2 SCIENTIFIC COMMITTEE CHAIRS REPORT	6
AGENDA ITEM 3. FISHERIES REPORTS.....	6
3.1 ANNUAL NATIONAL REPORTS 2024.....	6
3.2 SUMMARY OF SIOFA FISHERIES	12
3.3 ECOSYSTEM AND FISHERIES SUMMARIES 2024	13
AGENDA ITEM 4. NEW AND EXPLORATORY FISHERIES	14
4.1 BOTTOM FISHING FOOTPRINT	14
4.2 DEVELOPMENT OF NEW AND EXPLORATORY FISHERIES	14
AGENDA ITEM 5. DATA ACCESS AND DISSEMINATION.....	15
5.1 EXCHANGE OF SCIENTIFIC TOOTHFISH DATA WITH CCAMLR	15
5.2 DEVELOPMENTS TO THE DATA SECTION OF THE SIOFA WEBSITE.....	16
5.3 THE SIOFA STANDARD OPERATING PROCEDURE FOR DATA USE AND DATA REQUESTS.....	17
AGENDA ITEM 6. HARVEST STRATEGIES.....	17
6.1 PRESENTATION OF THE REPORT OF THE JOINT MOP AND SC INTERSESSIONAL WORKSHOP TO DEFINE HARVEST STRATEGY MANAGEMENT OBJECTIVES (WS2023-HSMO).....	17
6.2 DEVELOPMENT OF HARVEST STRATEGIES FOR ORANGE ROUGHY	17
6.3 DEVELOPMENT OF HARVEST STRATEGIES FOR TOOTHFISH	18
6.4 OTHER MATTERS.....	19
AGENDA ITEM 7. STOCK ASSESSMENTS AND ADVICE.....	19
7.1 ORANGE ROUGHY	19
7.2 ALFONSINO.....	21
7.3 TOOTHFISH.....	23
7.4 OILFISH	28
7.5 OTHER SPECIES.....	28
AGENDA ITEM 8. BYCATCH AND INCIDENTAL CAPTURES.....	29
8.1 DEEPWATER CHONDRICHTHYANS.....	29
8.2 DEVELOPMENT OF A SIOFA SKATE TAGGING PROGRAMME.....	33
8.3 IOTC BYCATCH.....	33
8.4 SEABIRDS, MAMMALS, AND BYCATCH OF OTHER SPECIES OF CONCERN	34
AGENDA ITEM 9. VULNERABLE MARINE ECOSYSTEMS (VME).....	35
9.1 ANNUAL REPORT OF VME ENCOUNTERS	35
9.2 VME DATA AND THE SETTING VME OF ENCOUNTER THRESHOLDS	35
9.3 VME MAPPING PROJECT (PAE2021-02).....	36
9.4 MANAGEMENT OPTIONS FOR PREVENTING SAIS ON VMEs	36
9.5 OPTIONS FOR RECORDING OF VME TAXA BY LINE OR LINE SEGMENT	37
9.6 REVISIONS OF THE LIST OF VME TAXA	37
AGENDA ITEM 10. MARINE PROTECTED AREAS	37
10.1 PROTOCOLS TO DESIGNATE AND EVALUATE MPAS	37
AGENDA ITEM 11. DATA STANDARDS	39

11.1 ANNUAL CATCH AND EFFORT DATA SUBMISSION	39
11.2 OBSERVER HARMONISATION	40
11.3 E-MONITORING	44
11.4 LOST GEAR REPORTED UNDER CMM 02(2023) ANNEX A.....	44
11.5 PROPOSALS FOR REVISIONS TO CMM 02(2023) (DATA STANDARDS).....	45
AGENDA ITEM 12. SIOFA PERFORMANCE REVIEW.....	45
12.1 RECOMMENDATIONS	45
AGENDA ITEM 13. COOPERATION WITH EXTERNAL BODIES.....	45
13.1 FIRMS COORDINATION AND WORK	45
13.2 FAO ABNJ DSF ACTIVITIES.....	45
13.3 CCAMLR.....	46
AGENDA ITEM 14. FUTURE WORK	46
14.1 CLIMATE CHANGE.....	46
14.2 PROGRESS OF EU FUNDED SCIENCE PROJECTS	47
14.3 MANAGEMENT AND COORDINATION OF SIOFA SCIENCE PROJECTS.....	47
14.4 SCIENTIFIC COMMITTEE WORKPLAN AND BUDGET	47
14.5 THE 2025 MEETING OF THE SCIENTIFIC COMMITTEE	48
AGENDA ITEM 15. OTHER BUSINESS	48
15.1 ELECTION OF THE SECOND VICE - CHAIR OF SCIENTIFIC COMMITTEE	48
15.2 SIOFA RULES OF PROCEDURE AND THE SCIENTIFIC COMMITTEE.....	48

List of Annexes

- Annex A Opening Statement by Thailand
- Annex B Opening Statement by the SIOFA Executive Secretary
- Annex C List of registered participants
- Annex D Adopted SC9 Agenda
- Annex E List of Meeting Documents
- Annex F Statement by Mauritius
- Annex G Framework and forms for exploratory fisheries
- Annex H Potential management objectives and performance indicators for the assessed management units of orange roughy
- Annex I Potential management objectives and performance indicators for defined toothfish management areas
- Annex J SIOFA SC Acronyms and Definitions
- Annex K Harvest strategies and timeline for the implementation of pre-assessments, assessments, management objectives and implementation
- Annex L Draft agenda for the 2nd Joint MoP-SC Workshop on the Development of Harvest Strategies
- Annex M Summary of the SIOFA SC Workplan 2024-2028
- Annex N Proposed revision to nomenclature in CMM 12(2023) Annex 1
- Annex O Draft agenda for the workshop to progress future protected area designation
- Annex P Implementation plan of the recommendations of the SIOFA Performance Review Panel updated with SC comments
- Annex Q SIOFA SC Budget forecast 2025-2027

Agenda item 1. Opening

1.1 Welcome from the Scientific Committee Chair

1. The Chair of the Scientific Committee (SC), Mr Alistair Dunn, opened the meeting on 18 March at 9.00 local time.
2. Ms Sampan Panjarat, Director of the Fisheries Development Policy and Planning Division, Department of Fisheries, Thailand, warmly welcomed the participants to Bangkok. Ms Panjarat explained that Thailand has been a Contracting Party of SIOFA for the past 6 years and has worked actively to contribute to all aspects of SIOFA, including its scientific work. She highlighted the importance of scientific contributions to the long-term conservation and sustainable use of the fishery resources in the SIOFA Area and to providing sustainable benefits for all stakeholders. Lastly, she wished all the participants a successful and productive meeting, and a happy and pleasant stay in Bangkok. The full statement is available as **Annex A**.
3. The Executive Secretary, Mr Thierry Clot, gave an opening statement. He thanked Thailand and the Thai Department of Fisheries for hosting the meeting and making excellent logistical arrangements. The Executive Secretary also thanked the SC Chair, Mr Alistair Dunn, the SC Vice-Chair, Dr Pavarot Noranarttragoon (Thailand), the Science Officer Dr Marco Milardi, and CCPs for their active engagement in, and support for, the many SIOFA scientific consultancies and projects. In addition, he highlighted the recruiting of the SC Chair, the appointment of SC Vice-Chairs, the appointment of the Science Officer, and the provision of funds by CCPs as facilitating significant progress and called for CCPs' continued engagement and investment. Finally, he wished the participants a fruitful meeting. The full statement is available as **Annex B**.
4. The SC Chair expressed his thanks to Thailand for hosting the meeting and welcomed the participants. He also highlighted the proactive and invaluable contributions of the new SC Vice-Chair, the support of the Chairs of the intersessional workshops, and the continued contributions of the previous SC Vice-Chair, Dr Sebastián Rodríguez Alfaro (European Union (EU)), including serving as convener of the SC Workshop on the Harmonisation of Scientific Observers.

1.2 Introduction of participants

5. The list of meeting participants is attached (**Annex C**).

1.3 Introduction to the meeting facilities and meeting arrangements

6. The Data Officer, Mr Pierre Peries, and the SC Vice Chair introduced the meeting facilities and the meeting practicalities.
7. 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

8. The agenda was adopted (**Annex D**).

2.1.1 Confirmation of meeting documents

9. The table of meeting documents and related items (**Annex E**) was confirmed.

2.1.2 Appointment of rapporteurs

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

2.2 Scientific Committee Chairs report

11. The SC Chair reported on intersessional activities undertaken since SC8, which included various completed and ongoing scientific consultancies, the Joint MoP-SC Intersessional Workshop to define Harvest Strategy Management Objectives (WS2023-HSMO), and the SC Workshop on the Harmonisation of Scientific Observers (WS2024-OBS).

2.2.1 Statements from non-participating CCPs

12. The SC Chair informed the meeting that as Mauritius and Korea had indicated that they were unable to attend the meeting in-person, he had invited both CCPs to make a statement, if they wished, at the beginning of the meeting for consideration by SC during its deliberations.
13. The SC Chair noted that a statement had been received by Mauritius, and he read out the statement to the meeting. The statement from Mauritius is attached as **Annex F**.

Agenda item 3. Fisheries reports

3.1 Annual National Reports 2024

3.1.1 CCP annual National Fisheries Reports 2024

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

Australia Annual National Report: SC-09-01

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 2023. The vessel recorded 31,220 demersal longline hooks (5 sets). The majority of catch comprised *Dissostichus eleginoides*. All catch and effort data for fishing operations during 2023 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 also informed the SC that one of its vessels was recently fishing on William's Ridge and has collected 40 samples as part of the SIOFA genetic sampling programme for toothfish discussed under Agenda Item 7.3.1.
17. The SC noted the National Report provided by Australia.

China Annual National Report: SC-09-02-Rev1

18. China presented its Annual National Report. In the SIOFA Area, China operated three different types of fisheries intermittently from 2000 to 2017: Light seining targeting mackerel and *Bramidae* family; bottom longlining targeting ruby snapper, etc.; and demersal trawling targeting dorids and orange roughy. From 2018-2022, 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 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 2023. As of February 12, 2024, 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.

19. Some CCPs noted that they had only learned of China's research surveys in the SIOFA Area for the first time from China's National Report. The SC discussed the process by which research vessels can conduct activities in the SIOFA Area and the process by which such activities are notified to the Secretariat. The SC noted that there are currently no such processes in place and agreed to discuss this matter further under agenda item 4.
20. The SC recommended that in future, the outcomes of such research activities should be presented in detail and as standalone papers.
21. The SC noted the National Report provided by China.

The Cook Islands Annual National Report: SC-09-03

22. The Cook Islands presented its Annual National Report. In 2023 the Cook Islands authorised one 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 catch obtained from these operations was unloaded in Mauritius and South Africa. 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 within the local markets of Mauritius and South Africa. The catch distribution extended to Thailand, New Zealand, Vietnam, Indonesia, and Australia, ensuring a global reach for the sourced catch.
23. The SC noted the National Report provided by the Cook Islands.

EU Annual National Report: SC-09-04

24. 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 2023. 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 2023 will be submitted to SIOFA in accordance with CMM 02(2023) (Data Standards). EU-France did not request any authorisation in 2023 and did not fish in the SIOFA Area. EU-Spain conducted fishing activities (one active bottom longline vessel using the Autoline system) in the SIOFA Area. No VME indicator thresholds were triggered during 2023.
25. Australia noted with concern the high level of bycatch of Portuguese dogfish in the common mora (*Mora moro*) fishery, which was over 60 times higher than the catch of common mora itself.
26. The EU pointed out that the level of Portuguese dogfish in 2023 was one of the lowest annual levels it has recorded and explained that the efforts the fishery has made to reduce Portuguese dogfish and other shark bycatches has also reduced the

catches of common mora.

27. The SC noted the National Report provided by the EU.

France (Overseas Territories) Annual National Report: SC-09-05

28. France (OT) presented its Annual National Report. The report summarised and updated fishing activity by French OT-flagged vessels in the SIOFA Area for 2023. 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) Annex A. The fishing activity was very low in 2022, with only one longline vessel being operated in the SIOFA Area during one trip for a total of 2 days in the toothfish fishery in Subarea 3b. No VME indicator thresholds were triggered during 2023. All catch and effort data for fishing operations during 2023 will be submitted to SIOFA in accordance with CMM 02(2023) (Data Standards). 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).
29. The SC noted the National Report provided by France (OT).
30. 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.
31. The SC noted that, based on the National Report, the French (OT) BFIA did not need to be updated.

Japan Annual National Report: SC-09-06

32. 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 47 years (1977-2023). 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 (2019-2023). Information through 2022 was compiled based on logbooks, and information for 2023 was tentatively compiled from scientific observer data and may be revised next year.
33. The SC noted the National Report provided by Japan.

Korea Annual National Report: SC-09-07

34. As Korea was unable to attend the meeting, the SC Chair introduced Korea's Annual National Report on its behalf. There were no Korean flagged vessels fishing in the SIOFA Area from 2014 to 2023. Bottom longline fishing vessels targeting Patagonian toothfish (*Dissostichus eleginoides*) and hapuka (*Polyprion* spp, Family *Polyprionidae*) and a trawl vessel targeting splendid alfonsino (*Beryx splendens*) and pelagic armorhead (*Pseudopentaceros richardsoni*) had operated in the SIOFA Area until 2013. Catch and effort data, including fleet composition, CPUE summaries, biological data, and other data of interest, for fishing years were included in the report.
35. The SC noted the National Report provided by Korea.
36. The SC noted that no fishing had been conducted by Korean flagged vessels in 2023.

Mauritius Annual National Report: SC-09-08

37. As Mauritius was unable to attend the meeting, the SC Chair introduced Mauritius' Annual National Report on its behalf. Mauritius conducts three fisheries on the Saya

de Malha Bank, in Subarea 8 of the SIOFA Area: the industrial shallow water banks fishery, the semi-industrial shallow water banks fishery, and the semi-industrial deepwater snapper/grouper 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 2023, the Mauritian fleet was composed of three fishing semi-industrial vessels. All three operated in the semi-industrial deepwater snapper/grouper fishery, and two of them also operated in the semi-industrial shallow water banks fishery. 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.

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

Seychelles Annual National Report: SC-09-09

39. Seychelles presented its Annual National Report. The report described Seychelles' fishing activities within the SIOFA Area. The Seychelles had no locally flagged vessels operating in the SIOFA Area in 2022. Seychelles flagged vessels operating on the high seas consisted of mostly purse seiners and longliners that target tuna and tuna-like species and are therefore operating in the Indian Ocean Tuna Commission (IOTC) area of competence. However, in June 2023, two fishing vessels were licensed to undertake exploratory harvesting of sea cucumber in the Joint Management Area (JMA). The fishing operation consisted of diving using scuba gear to collect sea cucumbers by hand. A total of 64 fishing days was undertaken by the two vessels whereby a total of 16.18 tonnes of sea cucumbers was landed. The fishing activities were concentrated on the Saya de Malha Bank in Subarea 8 of the SIOFA Area.
40. The SC noted that the Seychelles' sea cucumber fishery is an exploratory fishery and agreed to hold further discussions on the development of a framework for new and exploratory fisheries under agenda item 4.
41. The Executive Secretary noted that it would be necessary to determine whether the sea cucumber fishery is a high-value fishery or a low-value fishery, while clarifying that this is a matter for the MoP, rather than the SC, to consider.
42. The Seychelles explained that it considers this to be a high-value fishery.
43. The Data Officer noted that the Seychelles has shared the weight of sea cucumber when they have been salted and gutted and explained that the Secretariat needs to record the greenweight in its database. The Data Officer requested that the Seychelles provide information on the weight conversion factor to the Secretariat.
44. The Seychelles agreed to provide documentation on its weight conversion for sea cucumber to the Secretariat.
45. The SC noted the National Report provided by the Seychelles.

Chinese Taipei Annual National Report: SC-09-10

46. 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 longliners shifted to the southwest Indian Ocean for fishing oilfish seasonally after 2005 to obtain extra earnings. The numbers of longliners fished for oilfish seasonally were between 9 to 51 from 2000 to 2023, and 47 longliners fished for oilfish within the SIOFA Area in 2023. The average catch in the recent 5 years (2019 to 2023) was at around 5,408 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.

47. The SC noted the National Report provided by Chinese Taipei.

Thailand Annual National Report: SC-09-11-Rev1

48. 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 2023. Two vessels actively fished on the Saya de Malha Bank, spanning from latitude 9.00° to 11.00 °S and longitude 60.00° to 62.00 °E, consistent with the previous year's fishing grounds. Otter board trawl was the main fishing gear used, with handline being an alternative gear. There was a decline in trawl fishing effort compared to 2022, resulting in a reduction in trawl catch. Handline effort decreased slightly but the catch increased significantly due to rising domestic demand. Trawl catch was 1,667.52 tonnes, with lizardfish, scads and threadfin breams being the dominant species in the trawl catch, while the handline catch was 308.33 tonnes, with trevallies being prominent. Onboard observers were present on every fishing trip in 2023, constituting 100% coverage for both fishing gears. A total of 61.35 kg of vulnerable marine species and 658.35 kg of incidental bycatch were reported. No VME thresholds were triggered during the year and there were no reports of gear interaction with seabirds or marine mammals during fishing. 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.
49. The Deep Sea Conservation Coalition (DSCC) asked if Thailand has any information on the potential impact of its shallow water fishery on seagrasses, which the DSCC considers to be an indicator species for VMEs.
50. Thailand answered that observers confirmed that there was no seagrass in the catch from this fishery.
51. The SC noted the National Report provided by Thailand.

Comoros Annual National Report: SC-09-12

52. As no representative from Comoros was at the meeting, the SC Chair introduced Comoros' Annual National Report on its behalf. Since 2022, Comoros has not conducted any fishing activity in the SIOFA Area.
53. The SC noted the National Report provided by Comoros.

India Annual National Report: SC-09-13

54. As no representative from India was at the meeting, the SC Chair introduced India's Annual National Report on its behalf. There were no Indian flagged commercial fishing vessels fishing in the SIOFA Area in 2023. However, India indicated that it has plans to expand the fishing areas of its fisheries to the SIOFA Area in the near future.
55. The SC noted the National Report provided by India.

3.1.2 CPUE for primary species

56. The Science Officer presented SC-09-24, which provided guidelines for the standardization of CPUE in SIOFA fisheries, including example code and reference to previous attempts at standardization in SIOFA. As background, the Science Officer explained that, in line with the SC8 recommendation to add generalised linear model (GLM) standardisations of CPUE to the Overview of SIOFA Fisheries 2024, the Secretariat worked with an informal technical group on CPUE standardization composed of relevant SC Heads of Delegation (HoDs). The informal group concluded

- that the development of GLM standardized CPUEs could not be fully undertaken by the Secretariat and recommended instead that the Secretariat prepare a generic “guideline paper” on CPUE standardization with example R code.
57. The SC requested the Secretariat to notify members of the SC of any developments relating to such informal technical groups in order to enable SC members to more easily monitor progress and potentially provide input.
 58. The SC Chair informed the SC that the following paper may be another potentially useful resource for CCPs conducting CPUE standardisations: Hoyle, S.D.; Campbell, R.A.; Ducharme-Barth, N.D.; Grüss, A.; Moore, B.R.; Thorson, J.T.; Tremblay-Boyer, L.; Winker, H.; Zhou, S.; Maunder, M.N. (2024). Catch per unit effort modelling for stock assessment: A summary of good practices. *Fisheries Research* 269, 106860. <https://doi.org/10.1016/j.fishres.2023.106860>.
 59. The SC noted two potential uses of CPUE data that warranted different treatments and would yield different insights. One use would be to develop an unstandardized annual index of CPUE data to monitor the stock and identify any developing trends that might be an indicator of a potential emerging issue. The other use would be to develop standardized CPUE indices for use as inputs for stock assessments. In light of the amount of work this would involve and its use in stock assessments, these indices would not need to be updated annually.
 60. The Science Officer presented SC-09-INFO-12, which outlined the recommendations on definitions of SIOFA primary and secondary species endorsed by MoP10 and given in the SC8 Report, Annex I. SC-09-INFO-12 also suggested a draft bycatch definition project that could be included in the future SC workplan.

3.1.3 Guidelines for the submission of National Reports

61. The Science Officer presented SC-09-INFO-10, the current Guidelines for the Submission of Annual National Reports to the SIOFA SC and explained that no changes have been made to them since SC8. The Science Officer invited the SC to consider whether any further updates to the Guidelines are required.
62. The SC agreed that it would be useful to include a map of fishing activities, at an appropriate temporal and spatial resolution, such as an aggregated fishing footprint, in National Reports.
63. The SC agreed that, where feasible, it would be useful to provide standardized CPUE for key species in National Reports.
64. The SC agreed that it would be useful to include information on tagging programs, including tag releases and overlap statistics by Management Area and by trip, where available, in National Reports.
65. The SC agreed that it would be useful for descriptions of catch and effort data verification mechanisms to explain how they address data completeness, data consistency, and data accuracy.
66. The SC agreed that it would be useful for CCPs to provide relevant information on any activities at other regional fisheries management organisations (RFMOs) or external bodies to which their observers are accredited in National Reports.
67. The Data Officer suggested that CCPs should be encouraged to share information about how the catch from their fisheries are marketed and commercialised as some have done in their presentations.
68. The SC reviewed and updated the Guidelines for the Submission of Annual National Reports (SC-09-INFO-10-Rev1).
69. The SC recommended the MoP note the revised guidelines for the Submission of

Annual National Reports given in SC-09-INFO-10-Rev1.

70. The DSCC urged the SC to consider subdividing Subarea 8 to separate the Saya de Malha Bank from the rest of the area and thus divide shallow water fisheries from deeper water fisheries.
71. Some CCPs noted that the Saya de Malha Bank was easily distinguishable by fishing depth.

3.2 Summary of SIOFA fisheries

3.2.1 Overview of SIOFA fisheries 2024

72. The SIOFA Science Officer presented a draft Overview of SIOFA Fisheries (SC-09-14), which summarised recent years' fishing activities, main species catch and other aspects of scientific interest. The first version of this document, which included data up to 2020, was originally prepared by the SIOFA Secretariat, endorsed by SC7 and MoP9, and published in 2022. This new version included figures with data updated to 2022.
73. The SC noted that the data in Tables 1 (Historical summary of active vessels by CCP and gear in the SIOFA Area) and 3 (Summary of fishing effort by each CCP, main gear and year) were taken from the National Reports. The SC noted that the same information could also be derived the catch and effort database, which contains verified data, whereas some data from the National Reports may still be preliminary, and that this process would be easier to automate. The SC therefore agreed to update Tables 1 and 3 using data from the Catch Effort database for next year's SC meeting and to evaluate the effectiveness of doing so.
74. The SC agreed to keep written descriptions of the data presented to a minimum in the Overview of SIOFA Fisheries so as to avoid the risk of inadvertently including interpretive or descriptive text from past years that may not be correct due to changes in trends over time.
75. The SC further updated and finalised the Overview of SIOFA Fisheries 2024 (SC-09-14-Rev1).
76. The SC recommended that the MoP endorse the Overview of SIOFA Fisheries 2024 (SC-09-14-Rev1) and requested the Secretariat to make a public version of it, with confidential information removed, available on the SIOFA website.
77. The Science Officer presented SC-09-23, which provided detailed catch and effort information, including average annual catch for SIOFA species of interest, extracted from the Overview of SIOFA Fisheries 2024. The Science Officer invited the SC to further consider this information when formulating its advice to the MoP, noting that MoP10 endorsed the recommendation by SC8 regarding candidate Harvest Control Rules for interim management to maintain catches at present levels.
78. The SC reviewed and revised the paper (SC-09-23-Rev1) and agreed to use the species of interest average catch figures in the paper when providing advice to the MoP regarding candidate Harvest Control Rules for interim management. The table with average catch for the species of interest is shown in Table 1.
79. The SC recommended the MoP note the average catch values in Table 1.
80. The SC noted that the mean catches for 2018-2022 for each of the three areas for toothfish are tabulated under Agenda Item 7.3.3.

Table 1: Average annual catch of different species during the recent period. The reference period in this table was taken from the MoP decision reported in paragraph 79a of the MoP10 Report.

Species	Period	Average catch
Alfonsino	(2018–2022)	3698.2 t
Orange roughy	(2015–2020)	1010.7 t
Toothfish	(2018–2022)	257.2 t ¹
Hapuka	(2018–2022)	82.1 t
Oilfish	(2018–2022)	13529.6 t

1. Note that the average catch is based on three areas: Del Cano, Williams Ridge, and South Indian Ridge.

3.2.2 CCP fishery characterisations

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

3.3 Ecosystem and Fisheries Summaries 2024

82. The Science Officer presented the SIOFA Ecosystem Summary 2024 (SC-09-15), which described the main known effects of SIOFA fisheries on ecosystems and species in the SIOFA Area and summarised the available data with an emphasis on the most recent five years. The first draft of this document was originally prepared by the SIOFA Secretariat and presented during PAEWG4 and at SC7. SC8 further reviewed and endorsed this document, recommending its publication to MoP10, and the Summary was first published in 2023. This new version includes figures with data updated to 2022.
83. The SC noted the difficulty of assessing Scientific Observer coverage in SIOFA because of the current lack of linkage between fishing events in the Observer and Catch Effort databases. The SC noted that the Secretariat is currently addressing this issue and that once such linkages are established, it would enable more meaningful analyses.
84. The SC agreed to showcase the data currently available in the Observer database in the Ecosystem Summary 2024 (Table 2), while recognising its limitations, especially regarding estimates of observer coverage for pelagic fisheries, which represented the proportion of observed events where catch and effort data was reported, not the proportion of all fishing events that had observer coverage. The SC recommended that this table be revised for the next edition of the Ecosystem Summary using the linked catch/effort and observer data.
85. The SC recommended that the Secretariat work to link catch/effort and observer data at the fishing operation level (haul by haul, tow by tow, etc.).
86. The SC recommended that Table 2 from the Ecosystem Summary report be revised for the next edition of the Ecosystem Summary using the linked catch/effort and observer data.
87. The SC noted that there are some Chinese Taipei observer data on incidental captures of endangered, threatened or protected (ETP) species that are not held by the Secretariat.
88. The SC recommended the MoP note that while the submission of observer data is not a requirement for pelagic fisheries, it would be valuable to have this information available in the SIOFA databases.
89. The SC further updated and finalised the Ecosystem Summary 2024 (SC-09-15-Rev1).
90. The SC recommended that the MoP endorse the SIOFA Ecosystem Summary 2024 (SC-09-15-Rev1) and requested the Secretariat to make a public version of it, with

confidential information removed, available on the SIOFA website.

91. The SC reviewed and updated SIOFA Fisheries Summaries for individual species under agenda item 7.
92. 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.

Agenda item 4. New and exploratory fisheries

4.1 Bottom fishing footprint

93. The Science Officer informed the SC that MoP10 adopted the updated bottom fishing footprint. The Secretariat made the data layer of the footprint, along with the SIOFA Subareas, available in the SIOFA Secretariat GitHub account, as requested. The Science Officer noted that the MoP agreed to initiate an intersessional process to discuss the implications of the bottom fishing footprint, including for CMM 01(2023) (Interim Management of Bottom Fishing) and how new fishing should be considered.

4.2 Development of new and exploratory fisheries

94. The SC considered new and exploratory fisheries based on the discussions of previous SIOFA SC meetings, the Annual National reports, and the outcomes of the SIOFA Scientific Committee Workshop on the Harmonisation of Scientific Observers (WS2024-OBS).
95. The SC noted that there were two frameworks to consider: The first for fisheries that were "new and exploratory" and another one for "research cruises". The SC recommended that separate frameworks and processes would be needed for each. The SC further recommended that both frameworks should apply to all gears for any fishery falling under SIOFA's competence.
96. The SC noted that, in order to sustainably manage fish stocks and protect VMEs, the frameworks should consider the International Guidelines for the Management of Deep-sea Fisheries in the High Seas (United Nations Food and Agriculture Organization (FAO), 2009).
97. The SC recommended that the framework for exploratory fisheries given in **Annex G.1** for "new and exploratory" fisheries (hereinafter referred to as "exploratory fisheries") be used.
98. The SC recommended that the MoP require that a Fisheries Operation Plan (FOP) be submitted to the SC for approval, and that this be in the format of the template given in **Annex G.2**. This would ensure the appropriate information was supplied, would enable comparisons between FOPs, and would ensure fair evaluation of each FOP.
99. The SC recommended that the FOP include a data collection and analysis plan (DCAP) describing the scientific information and analysis that are planned as a part of the exploratory fisheries proposal.
100. The SC recommended that the MoP:
 - a. require FOPs to be submitted to the annual meeting of the SC for endorsement.
 - b. request the SC to review each FOP, including the DCAP, and the data and reports from relevant ongoing or completed new and exploratory fisheries, and provide advice and recommendations to the MoP.
 - c. note that the SC recommended the evaluation criteria in **Annex G.3** be used by the SC to assess the FOP and determine if the FOP is acceptable, requires

- modifications, or is not accepted.
 - d. note that the FOP should cover a maximum period of three years, but could be rolled over a maximum of two times, pending the evaluation and approval by the SC at each roll over.
 - e. note that once a FOP expires after 9 years, if the SC has not provided advice to the MoP on how to progress the fishery to a fully commercial operation (thereby being recognised as an established fishery), a new FOP should be submitted to the SC for evaluation.
 - f. the proponents of the exploratory fishery be required to submit annual updates of catch, effort and research work annually to the SC.
101. The SC noted it would review the annual updates against progress on the FOP. A final “Exploratory Fishing Report” should be provided to the SC at the completion of each 3-year cycle to the SC’s next meeting after completion of the exploratory fishing activities.
102. The SC recommended that any exploratory fisheries where fishing gear could touch the seabed should not take place in any established benthic protected area.

Research Cruises

103. The SC noted that scientific research is considered in the SIOFA Agreement and noted the need to ensure consistency in approaches for research cruises and scientific research.
104. The SC recommended that the MoP define research cruises as single trips conducted by a dedicated research vessel under the scope of an SC activity, where the sale of commercial catch is not the primary objective of the trip.
105. The SC recommended that the MoP develop a specific “research cruise CMM” that is separate from the process that is proposed for exploratory fisheries. This would ensure that these activities are appropriately sanctioned prior to the activity being undertaken and subsequently reported. This process should ensure that:
- a. all research cruises require SIOFA authorisation.
 - b. a research cruise plan is submitted to the SIOFA SC for approval prior to conducting the cruise.
 - c. the MoP considers the recommendation of the SC and authorises the cruise.
 - d. the data are submitted to the Secretariat within 9 months of the end of the cruise.
 - e. the results of the research cruise are reported to the SC and the MoP.
 - f. no subsequent research cruise will be permitted by the organisation undertaking the cruise if they do not submit the data emanating from the cruise to the SIOFA Secretariat and a final detailed cruise report is submitted to and accepted by the next SC or within 1 year of completing the cruise.
106. The DSCC welcomed the development of the new and exploratory fishery framework and urged that it be based on the precautionary approach with a clear objective to gain sufficient information to provide management advice to the MoP, and should avoid VMEs including seamounts.

Agenda item 5. Data Access and Dissemination

5.1 Exchange of scientific toothfish data with CCAMLR

107. The Science Officer presented SC-09-26, which summarised the exchange of scientific toothfish data with the Commission for the Conservation of Antarctic Marine Living

Resources (CCAMLR). Of the total 27 tagged individuals that were recaptured in the SIOFA Area, information could be matched for 22 while 5 individuals could not be reliably matched with any record, likely due to mismatches between timelines of dataset updates. Of these 22 toothfish recaptures, 15 were originally released in the CCAMLR Convention Area, while 7 recaptures originated from releases within the SIOFA Area.

108. The Science Officer also highlighted the extensive cooperation and support extended by the CCAMLR Secretariat in preparing paper SC-09-26.
109. The SC noted that the data exchange with CCAMLR is working as planned and that the task assigned to the SIOFA Secretariat during the previous SC meeting was completed.
110. The SC noted that such cooperation with CCAMLR will be crucial for the management of toothfish fisheries in the SIOFA Area.
111. The SC noted a small revision was required in SC-09-26. This was updated as SC-09-26-Rev1 on the website.
112. The SC requested the Secretariat investigate and retrieve historical data that is held by CCAMLR that could be added to the SIOFA database.
113. The SC requested the SIOFA Secretariat to submit relevant contents of this paper on its behalf to the CCAMLR Scientific Committee meeting in 2024 (SC-CAMLR-43).
114. The SC thanked the CCAMLR Secretariat for its continued cooperation with SIOFA.
115. The Data Officer presented SC-09-INFO-05-Rev1, which summarised the exchanges of scientific data with other organizations to complement the data collected in SIOFA. In 2023, data were exchanged with CCAMLR as a bordering organization, for the management of toothfish, and for information exchanges about the fish that have been tagged. Data were also exchanged with the IOTC, as SIOFA and IOTC have a large overlapping area (but different species mandates). The data exchanged with IOTC were used to produce a paper about IOTC bycatch in the SIOFA Area (SC-09-36), which was presented under agenda item 8.3.

5.2 Developments to the data section of the SIOFA website

116. The Data Officer presented SC-09-31, which summarised the data and security audit recommendations endorsed by the MoP and provided an update on the implementation status of each recommendation. In 2024, most of the recommendations have been considered and implemented. However, a few items are still in progress or partially implemented for practical, workload or cost reasons, and a few of them require action on the part of the MoP and its subsidiary bodies to act on.
117. The SC thanked the Secretariat for its comprehensive update on the implementation status of the data and security audit recommendations. The SC requested that the Secretariat continue to provide similar reports at future meetings of the SC.
118. The Data Officer highlighted that the first recommendation concerning the definition of confidential data in paragraph 2b of CMM 03(2016) (Data Confidentiality) could be revised to permit presenting catch and effort data in public reports, for example that species catches aggregated over one year could be published, even if the catch is from one vessel only.
119. The SC noted that paragraph 2c of CMM 03(2016) (Data Confidentiality) states that the Secretariat shall keep “public domain catch and effort data” confidential until the MoP has acted on the advice of the SC in relation to a SIOFA Bottom Fishing Impact Assessment and SIOFA bottom fishing footprint.

120. The SC recommended that the MoP consider whether paragraph 2c of CMM 03(2016) (Data Confidentiality) should be updated in light of the fact that the SIOFA bottom fishing footprint has now been adopted.
121. The SC requested the Secretariat to provide a document with the data scheme of the SIOFA databases, similar to Figure 1 (Main table relationships in the three main database tables) in MoP-09-08, to each meeting of the SC, noting that this would help the SC better understand these data, as well as facilitate the work of consultants and others who are accessing and utilising SIOFA data for their analyses.
122. The SC and Secretariat welcomed the offer by Dr Alexis Martin (France (OT)) to support the Secretariat with automating the data quality assurance process.
123. 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.
124. The SC requested the Secretariat to add a subsection to the website where technical resources could be downloaded, such as identification guides, handbooks, manuals, sampling protocols, and data submission forms.
125. The SC noted that it would be worthwhile developing a location on the SIOFA website for observers, either in the data section or the science section.

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

126. The Data Officer presented SC-09-INFO-06, which provided a summary report of data and document release requests that have been received in 2023. A total of 20 requests have been received. Most of the requests were about releasing data. When the requests concerned public data, the time between the data request and the data release was short, whereas when the approval of the data owner was required, the time between the data request and the data release was about 30 days.
127. The SC requested the Secretariat to distinguish between CCP requests, SIOFA consultant requests, and public/external requests in future summary reports.
128. The SC noted that in some cases, like for project DWS-2023-01 (paper SC-09-42), it can take a long time for a data request to be approved. The Data Officer explained that several factors can affect processing of the request, such as holiday periods, CCPs accidentally overlooking the emailed request, the 3-week notices that are given to CCPs for providing their feedback, etc. The SC requested the Secretariat to review the data request/release process, identify potential ways in which the process could be streamlined and improved, and present a paper with its ideas at the next SC meeting.

Agenda item 6. Harvest strategies

6.1 Presentation of the Report of the Joint MoP and SC Intersessional Workshop to Define Harvest Strategy Management Objectives (WS2023-HSMO)

129. The SC Chair presented the WS2023-HSMO Report (SC-09-34).

6.2 Development of harvest strategies for Orange Roughy

6.2.1 Consideration of potential management objectives

130. The SC noted that it did not have new comments on the potential management objectives for orange roughy.

6.2.2 Consideration of potential performance indicators

131. The SC recommended the MoP note that it has considered the potential management objectives and performance indicators for orange roughy that were

drafted by the WS2023-HSMO and further refined the performance indicators as described in **Annex H**.

132. The SC noted that for unassessed areas of orange roughy, it may be necessary to develop low-information harvest strategies and to develop suitable proxies of B_0 .

6.2.3 Development of the Orange Roughy fisheries monitoring regime and assessment approaches

133. The SC anticipated that monitoring and assessment would consist of the continued collection of catch and effort data, length-frequency data, and otoliths, as well as acoustic information, for conducting stock assessments using a statistical catch-at-age model.

6.2.4 Management Strategy Evaluations

134. The SC noted that the details of the Management Strategy Evaluations for orange roughy would be considered as a part of the development of the harvest strategy process.

6.2.5 Breakout rules

135. The SC recommended that the MoP note that the development of breakout rules would be a key part of the development of harvest strategies, and that criteria would be developed as part of this process.

136. These criteria would need to include aspects that allow for consideration of the types of events listed in paragraph 31 of the WS2023-HSMO Report. Further consideration would also be needed of the specific stock hypotheses and harvest strategy used for orange roughy, and these would be considered in the process of the development of harvest strategies.

6.3 Development of harvest strategies for Toothfish

6.3.1 Consideration of potential management objectives

137. The SC noted that it did not have any new comments on the potential management objectives for toothfish.

6.3.2 Consideration of potential performance indicators

138. The SC recommended the MoP note that it has considered the potential management objectives and performance indicators for toothfish that were drafted by the WS2023-HSMO and further refined them as described in **Annex I**.

6.3.3 Development of the Toothfish fisheries monitoring regime and assessment approaches

139. The SC anticipated that monitoring and assessment would follow tagging-based estimates, combined with CPUE, which would be evaluated by following trend analysis rules, such as those used in CCAMLR.
140. The SC noted that CCAMLR is beginning to conduct management strategy evaluations of the trend analysis rules (see CCAMLR SC-42 Report). The SC noted that as SIOFA has a similar toothfish assessment for South Indian Ridge (SIR) and Del Cano Rise (DCR), and fisheries monitoring regime to CCAMLR, CCAMLR's management strategy evaluation work would likely be very relevant to the work of SIOFA.

6.3.4 Management Strategy Evaluations

141. The SC noted that the details of the Management Strategy Evaluations for toothfish would be considered as a part of the development of the harvest strategy process.

6.3.5 Breakout rules

142. The SC noted that the development of breakout rules would be a key part of the development of harvest strategies, and that criteria would need to be developed as part of this process. These criteria would need to include aspects that allow for consideration of the types of events listed in paragraph 31 of the WS2023-HSMO

Report. Further consideration would also be needed with respect to the specific stock hypotheses and harvest strategy used for toothfish.

6.4 Other matters

6.4.1 Additional species that would be amenable to the development of monitoring programmes and harvest strategies

143. The SC agreed that the harvest strategy development work should first focus on toothfish and orange roughy, as was agreed at MoP10 (paragraph 76, MoP10 Report), noting that this could require at least two years' work. The SC agreed to identify other species that may be amenable to the development of harvest strategies as the opportunity arises.

6.4.2 Definitions of the quantitative terms that used for describing probabilities

144. The SC endorsed the definitions of quantitative terms for describing probabilities (e.g., 'very likely') that were drafted by the WS2023-HSMO. The SC agreed to include an annex (**Annex J**) with acronyms and definitions in each year's annual report, to regularly review and update this annex, and to include the table of definitions of quantitative terms for describing probabilities in this annex.

6.4.3 Development of generalised approaches for stock maintenance and rebuilding approaches

145. The SC agreed to continue to consider the development of generalised approaches for stock maintenance and rebuilding approaches as part of the harvest strategy development process.

6.4.4 Updates to the timeline for the development of harvest strategies

146. The SC reviewed the harvest strategy development timeline that was developed by SC8 (**Annex G**, SC8 Report).
147. The SC recommended that the MoP note that it had updated the timeline by adding the implementation status of each task (**Annex K**).
148. The SC noted that allocation of catch or effort limits would be a necessary part of any harvest strategy implementation and that the SC would undertake any analyses as directed by the MoP to inform future discussions on allocations.

6.4.5 Development of the agenda for the 2nd Joint MoP-SC Harvest Strategies

Workshop

149. The SC developed a potential agenda for the 2nd Joint MoP-SC Harvest Strategies Workshop (**Annex L**).
150. The SC recommended that the MoP note the proposed draft agenda in **Annex L**.
151. The SC encouraged participants to submit papers to the workshop, particularly on potential harvest control rules.
152. The SC recommended that document WSHSPA-2023-01, the workplan and projects for the development of harvest strategies from SC9, and the harvest strategy development timetable (**Annex K**) be submitted to the workshop. In addition, the SC recommended that a timetable be included with the circular on the agenda with the tasks of the workshop and the anticipated inputs from the SC and the MoP highlighted.

Agenda item 7. Stock assessments and advice

7.1 Orange roughy

7.1.1 Descriptive characterisation

153. The SC recommended the MoP note that there was no new information that necessitated any change to the SC's previous advice based on the stock assessment

from SC7.

7.1.2 Stock monitoring and data collection (including acoustics)

154. The Science Officer reminded the SC that there are two ongoing scientific projects of relevance: ORY-2023-01 on age and growth of orange roughy, and ORY-2023-02 on orange roughy acoustics. ORY-2023-01 has been slightly delayed due to a delay in locating the otolith samples but is expected to be completed this year. ORY-2023-02 is proceeding in accordance with the original timeline. The final reports for both projects are expected to be presented at SC10.
155. The SC noted that it would be timely and useful to get an age-otolith weight regression from the current analysis and this should be requested from the analyst undertaking the work under ORY-2023-01.
156. The Cook Islands informed the SC that it has made greater efforts to collect more otoliths from the Southwest Indian Ridge, where there have been data gaps in the past. The Cook Islands further explained that it has modified its otolith collection protocol to ensure that twice the number of otoliths are collected from areas that are less frequently fished and that have therefore tended to yield fewer otoliths.
157. The SC agreed that it would be useful to conduct non-extractive acoustic work so that orange roughy stock biomass in the BPAs can be monitored and included in the stock assessments. These acoustic surveys could be undertaken by the R.V Fridtjof Nansen.

7.1.3 Stock assessment

158. The Science Officer introduced the final report for Project SER2022-ORY1 on the stock structure of orange roughy in the SIOFA Area (SC-09-28). The consultant (Pisces Research) examined the spatial patterns in the SIOFA trawl fisheries and determined that the two-stock approach (i. SIOFA Subarea 2, and ii. SIOFA Subareas 3a and 3b) used in the most recent SIOFA assessment for orange roughy, conducted in 2022, is appropriate given the available data.
159. The SC recommended the MoP note that the current two-stock approach should be the default assumed stock structure for updating the biological parameters and conducting the next stock assessment for orange roughy in 2025.
160. The SC agreed that if it decides to conduct genetic sampling of orange roughy in the future, it should do so at the locations and according to the protocol recommended in SC-09-28.
161. The SC thanked Dr David A. J. Middleton, Ms Tyla Hill-Moana, and Dr Philipp Neubauer of Pisces Research for conducting this work.
162. The SC thanked the EU for funding this work.
163. The SC discussed potential sensitivity analyses that may be worthwhile conducting as part of the next stock assessment, including examining the impact/influence of CPUE data, the effect of including/excluding acoustic information, and the impact/influence of ageing data and the extent of ageing error.
164. The ongoing and planned SC projects relevant to conducting the stock assessment update (otolith ageing, acoustic survey, stock assessment) and corresponding budgets are included in the SC workplan (**Annex M**; SC-09-INFO-01-Rev1).
165. The SC recommended that the MoP note that the SC has no additional management advice on orange roughy.

7.1.4 Updates to the fisheries summary

166. The Science Officer presented SIOFA Fisheries Summary: orange roughy (*Hoplostethus atlanticus*) 2024 (SC-09-16). The first draft of this fisheries summary

was considered and endorsed at SC8 and MoP10, and first published in 2023. This new version included figures with data updated to 2022.

167. The SC further updated and endorsed the SIOFA fisheries summary for orange roughy (SC-09-16-Rev1).
168. The SC recommended that the MoP endorse the SIOFA fisheries summary for orange roughy 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
169. The SC noted that it would be useful to include observer coverage summaries in all fisheries summaries, where possible, and if time allows, once linkages between fishing events in the Observer and Catch Effort databases are established.

7.2 Alfonsino

7.2.1 Descriptive characterisation

170. The SC recommended the MoP note that there was no new information that necessitated any change to the SC's previous advice based on the most recent stock assessment at SC5.

7.2.2 Stock monitoring and data collection (including acoustics)

171. The Science Officer introduced the final report for Project SER2022-BYS2 on bomb radiocarbon ageing of alfonsino (SC-09-29). The consultant, Dr Allen H Andrews (Scientific Inquiries and Innovations), investigated splendid alfonsino using thin-sectioned otoliths, derived an age reading protocol that agreed with whole otolith ages, and used bomb radiocarbon ageing to investigate the validity of splendid alfonsino age estimates using whole and thin-sectioned otoliths. The study found that several individuals of alfonsino were much older than originally estimated from visual reading of otoliths. The consultant recommended a detailed investigation of splendid alfonsino otoliths of fine-scale growth zone structure in transversely sectioned otoliths. This could be used to create an age reading protocol that would provide more accurate ageing for this long-lived species.
172. The SC agreed that the project results are strongly indicative that the current ageing for alfonsino is inaccurate and should be updated.
173. The SC agreed to redefine Project ALF-2024-01 based on the findings in SC-09-29, and that the revised project would consist of the following two parts: 1. develop an ageing protocol based on known age fish, and 2. develop updated growth parameters from a larger set of sectioned otoliths read using the new protocol.
174. The SC agreed to also investigate the feasibility of using otolith weight to estimate the ages of alfonsino and how this information could be used in the next stock assessment.
175. The SC thanked Dr Andrews for conducting this work.
176. The SC thanked the EU for funding this work.
177. Dr Ross Shotton (Southern Indian Ocean Deepsea Fishers Association (SIODFA)) presented SC-09-INFO-22, which provided a review of the potential of methods of acoustic stock assessment of SIOFA-Area alfonsino targeted by SIODFA trawlers. The review indicated that the logistical and operational requirements to undertake such surveys are satisfied, in that vessels are equipped with the required acoustic systems and vessel bridge officers have the technical skills to undertake quantitative acoustic surveys. However, a valid determination of the backscattering cross section required to convert the recorded echo intensity to fish biomass has not yet been established for alfonsino. There is also potential bias in a population total estimate due to lack of knowledge of the fraction of an alfonsino stock that is available/unavailable for

acoustic survey. In addition, fish flight from an approaching, or nearby, surveying vessel means that repeating transects to increase estimate precision may increase total error arising from increased bias caused by fish leaving the survey area during the survey period.

178. The SC noted that there remains uncertainty about the feasibility of acoustic surveys for alfonsino. The SC agreed to hold a workshop with invited experts to investigate the feasibility of such surveys based on analyses of data from surveys that will be undertaken in 2024 by the Cook Islands.
179. The SC noted the possibility that acoustic surveys for alfonsino may not be feasible and agreed to prepare for that possibility by estimating CPUE indices as an alternative input for the next stock assessment.

7.2.3 Stock assessment

180. The Science Officer introduced the final report for Project SER2022-BYS1 on the stock structure of alfonsino in the SIOFA Area (SC-09-28). The consultant (Pisces Research) examined the spatial patterns in the SIOFA trawl fisheries and determined that the two-area approach (i. Western: SIOFA Subareas 2, 3a and 3b, and ii. Eastern: SIOFA Subareas 4 and 5) used in the most recent SIOFA assessment for alfonsino, conducted in 2020, is appropriate. However, the consultant also noted that connectivity between the western and eastern fishery areas is possible. A genetic study, ideally based on whole genome sequencing, could be undertaken to investigate stock connectivity and stock structure. However, a lack of genetic differentiation would not necessarily indicate a lack of stock structure relevant to fishery management. Examination of abundance trends and, ideally, age compositions at a range of spatial scales would assist in further resolving stock structure while contributing to future assessment modelling.
181. The SC agreed that the eastern and western stocks should continue to be treated as separate stocks in the next stock assessment, while noting that there is some uncertainty around assuming that they are separate stocks.
182. The SC recommended that the MoP note that the eastern and western areas should be treated as separate stocks of alfonsino assessment until further information is received.
183. The SC thanked Dr Middleton, Ms Hill-Moana, and Dr Neubauer of Pisces Research for conducting this work.
184. The SC thanked the EU for funding this work.
185. The SC recommended that the fisheries summary for alfonsino should present the biological data by stock (eastern and western), where appropriate, in future updates.
186. Dr Shotton (SIODFA) presented SC-09-INFO-29, which provided a review of the past catch and fishing effort of the operations of the F.V. Will Watch in the SIOFA alfonsino fishery. These operations have used the same fishing methods, same fishing grounds, and gear configuration and many of the same crew since 1999. The record shows a variable catch history that reflects market demand in the fishery, the complex behaviour of alfonsino and the effects of oceanographic variability in regard to alfonsino availability. Based on the review the authors concluded that, for this fishery, the best basis for alfonsino assessment is to exclusively use the catch history of this vessel and the best measure of abundance is catch per tow averaged over the year, complemented with age composition data. Further, there should be cognizance of the oceanographic environment and activities of all the vessels in the fishery that should be considered. It is also important not to combine different vessels' data,

which would introduce further error. In addition, SIODFA noted that the fishery could be managed as a single resource, i.e., combining 90° E, Southwest Indian Ridge, and Walters Shoal given that fishing effort moves around this area in response to changing catch rates.

187. The ongoing and planned SC projects (otolith ageing, acoustics, stock assessment) relevant to conducting the next stock assessment and corresponding budgets are included in the SC workplan (**Annex M**; SC-09-INFO-01-Rev1).

7.2.4 Updates to the fisheries summary

188. The Science Officer presented Fisheries Summary: alfonsino (*Beryx* spp., *B. splendens*, *B. decadactylus*) 2024 (SC-09-17). The first draft of this fisheries summary was considered at SC8 but was not ready for publication at that time.
189. The SC updated and endorsed the SIOFA fisheries summary for alfonsino 2024 (SC-09-17-Rev1).
190. The SC recommended that the MoP endorse the SIOFA fisheries summary for alfonsino 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.

7.3 Toothfish

7.3.1 Descriptive characterisation

191. Dr Anne-Elise Nieblas and Dr Dominique Cowart (Company for Open Ocean Observations and Logging (COOOL)) presented the SER2022-TOP1 Final Report on the feasibility study for genetic analysis to inform the stock structure of Patagonian toothfish (SC-09-30). They explained that the objectives of the project were to review literature, SIOFA catch and effort data, and environmental data; develop a sampling design and protocol; and assess the feasibility of conducting a genetic analysis. The literature and data review revealed clear patterns in line with ontogenetic migration, with size and sex ratio distributions found to be linked to maturity, depth, slope, and bottom temperature. Furthermore, it revealed that mixing between SIOFA fishing hotspots and between the SIOFA Area and CCAMLR Convention Area is possible, with three main sites for fishing (DCR, SIR, and William's Ridge (WR)) being clearly defined by bathymetric features, these bathymetric features straddling the boundary between the two Areas, and tagging studies appearing to show movement between the Kerguelen Plateau and DCR and between the Kerguelen Plateau and WR.
192. Dr Nieblas and Dr Cowart hypothesised that the most representative sampling of the full population should target mixed-sex spawning grounds and developed a sampling and sequencing strategy accordingly. They recommended that a dataset composed of Single Nucleotide Polymorphisms (SNPs) loci using a "reduced representation approach", such as Restriction Site Associated DNA marker sequencing (RADseq) or Genotyping-by-sequencing (GBS), be generated for Patagonian toothfish in the southwest Indian Ocean to provide a more representative sample of the entire genome and a possibly clearer resolution of population structure. They also recommended that ideally, at least 100 samples per fishing zone should be collected, with an even sex ratio where possible, but noted that the budget for the SER2022TOP2 Project is limited to analysing about 30 samples per fishing zone. This will not likely be sufficient to precisely define population structure across the SIOFA regions and should be considered as a preliminary, or even a pilot, project, with the ability to recommend management units will likely be limited.
193. Dr Nieblas and Dr Cowart reported that they have developed a detailed sampling protocol upon which the onboard observers will be trained, as well as outlined a

shipping protocol that partners should use to send their samples, and a laboratory protocol for the preparation of the samples for sequencing. Ideally, samples should be collected from November 2023 to March 2024, aligning with the planned fishing for the austral summer season.

- 194. Dr Nieblas and Dr Cowart reported on the SER2022-TOP2 project, which involves the next steps of the collection of samples, analysis, and a full review of the stock structure of Patagonian toothfish, under agenda item 7.3.3.
- 195. The SC thanked Dr Nieblas and Dr Cowart for their work.
- 196. The SC thanked the EU for funding this work.

7.3.2 Stock monitoring and data collection

- 197. The SC noted that, as shown in Tables 2 and 3 below, a number of tags released in the CCAMLR Convention Area have been recaptured in the SIOFA Area, which suggests connectivity between the toothfish populations in the two areas.

Table 2: Summary of Patagonian toothfish tag releases in the SIOFA Area, by Subarea and year (source: SIOFA Observer database/CCAMLR database 2003-2023).

Year	SIOFA Subarea 3b	SIOFA Subarea 7	Total
2020	0	175	175
2021	745	194	939
2022	840	149	989
Total	1585	518	2103

Table 3: Summary of Patagonian toothfish tag recaptures in the SIOFA Area, by Subarea (source: SIOFA Observer database/CCAMLR database 2003-2023). Numbers of recaptured tags originating from the CCAMLR subareas are provided in separate columns.

Year	All recaptures in SIOFA Subarea 3b	All recaptures in SIOFA Subarea 7	CCAMLR tags recaptured in SIOFA Subarea 3b	CCAMLR tags recaptured in SIOFA Subarea 7	Total
2019	0	1	0	1	1
2020	3	1	2	1	4
2021	6	3	3	3	9
2022	6	6	1	4	12
Total	15	11	6	9	26

- 198. Dr Nieblas and Dr Cowart (COOL) presented the preliminary results from Project SER2022-TOP2 on the stock structure of Patagonian toothfish (SC-09-INFO-18), which builds on the SER2022-TOP1 project with the aim of designing 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. They reported that, thus far in SER2022-TOP2, a detailed sampling protocol has been communicated to onboard observers from EU-Spain and Australian vessels that had planned to fish the three fishing zones over the austral summer. Spanish vessels were noted to fish in SIR and DCR, but not in adjacent CCAMLR zones. Australian vessels were noted to fish in WR and adjacent CCAMLR

sites where possible. The search for samples from CCAMLR sites adjacent to DCR is ongoing. Sampling kits were dispatched in August 2023. The observer on the Spanish vessel has since returned metadata of 200 successfully sampled individuals from SIR and DCR (100 samples each site). A preliminary assessment of the returned metadata indicated that the recommended sampling strategy has been achieved for these samples. The vessel is expected to return to port in early March 2024. However, the Australian vessel experienced significant delays to fishing at WR and fished this area in March 2024, with an expected return to port in May 2024.

199. Dr Nieblas and Dr Cowart reported that returned fin clips will be prepared for sequencing and sent to Diversity Arrays Technology (DArT), which has a lower price per sample and faster turnaround time than the previous company quoted in SER2022-TOP1. The project timeline has been updated to include the significant delay in fishing of the Australian vessel. An extension of the deadline for the final report from May 2024 to 1 November 2024 has been requested.
200. The SC requested the Secretariat to carry out the necessary administrative procedures to extend the end date of the EU grant for this project.
201. The SC thanked Dr Nieblas and Dr Cowart for the update and looked forward to receiving the final report.

7.3.3 Stock assessment

202. Dr Jules Selles (France (OT)) presented research conducted together with Mr Roberto Sarralde (EU) and Dr Félix Massiot-Granier (France (OT)) as part of Project TOT-2023-01 on trend analysis for SIOFA toothfish to develop a framework designed to determine appropriate catch limits in data-limited fisheries, where a data collection for stock assessments is in place, in the interim of having a stock assessment (SC-09-35). The objectives of the project are to develop a CPUE-by-analogy assessment of the data-limited SIOFA toothfish fisheries in Subarea 3b, develop a Chapman mark recapture estimator for data-limited SIOFA toothfish fisheries in Subarea 3b, and consider how CCAMLR trend analysis rules might be adapted and applied to the SIOFA Area.
203. Dr Selles explained that the framework estimated biomass using two methods, the CPUE-by-seabed-area analogy and the Chapman mark recapture estimation. Biomass estimates were used to recommend an update of the catch limits using a trend analysis decision rule adapted from CCAMLR. Results indicated that the trend analysis is a good candidate as an interim ad-hoc harvest control rule that could be used for managing data-limited stocks and to adjust future catch limits based on trends in biomass estimated from CPUE and tagging data.
204. Dr Selles further explained that, as a first step, this approach was applied to SIOFA data-limited toothfish fisheries in the Del Cano management unit (DC MU), where conservation measures have been in force since 2020, and to the SIR, which was not yet agreed as a MU. Based on the trend analysis for SIOFA data-limited toothfish fisheries, using a target harvest rate between 4 to 10% (within the bounds of a 20% increase or decrease in the previous catch limit or the mean catch over the last five years), derived catch limits advice for 2025 would be 44 t for DC MU and 78 t for SIR.
205. The SC requested that the Secretariat obtain a copy of the code to conduct the SIOFA trend analysis and upload it to the SIOFA Secretariat GitHub repository.
206. The SC requested the Secretariat to update the toothfish catch estimates using the analysis code described in paper SC-09-35. The SC requested that from 2025, the Secretariat would run these analyses annually, using all data available from the

previous year and providing estimates by Management Units. The Secretariat should provide analysis outputs to CCPs prior to the deadline for the submission of working papers to the SC using the data from the most recent available year.

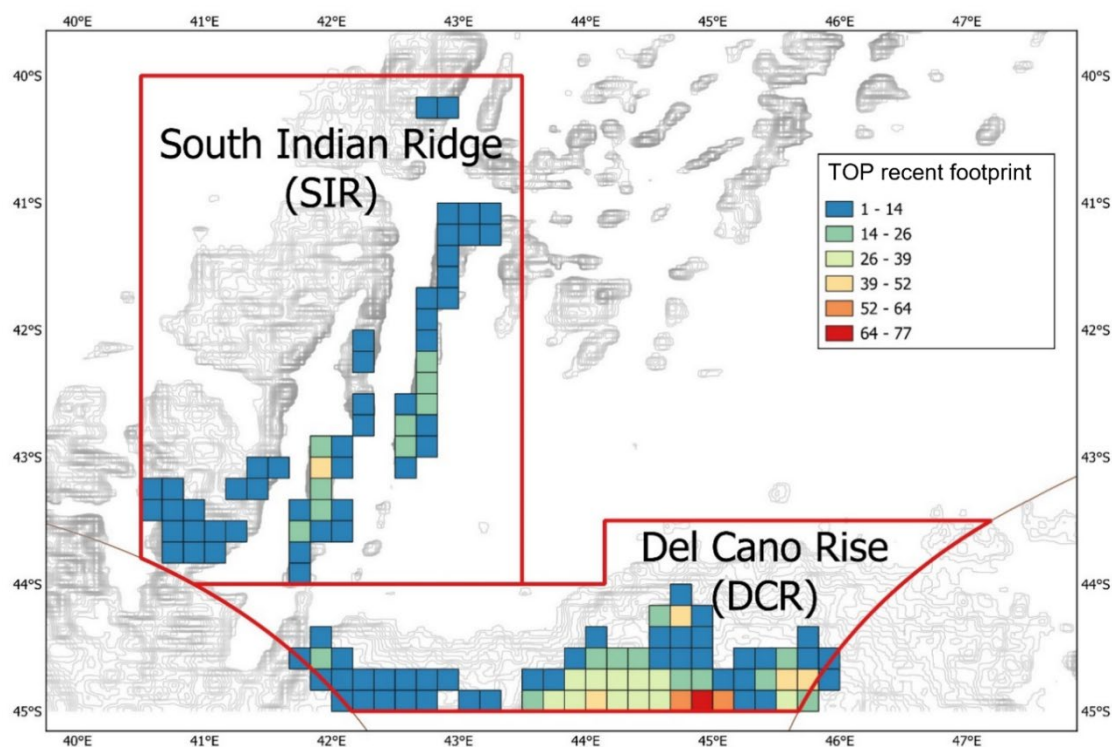
207. The SC noted that the 4% harvest rate was the default value used by CCAMLR and recommended that the biological parameters for the SIOFA Area be used to update the estimates of the harvest rate and to assess the impact of this on the trend analysis.
208. The SC recommended estimating the toothfish removals resulting from marine mammal predation in the management area with fisheries targeting Patagonian toothfish and that these estimates be included in future assessments.
209. The SC recommended that the MoP note that the trend analysis should be used for setting the respective catch limits for the data-limited toothfish MUs of DC and SIR.
210. The SC recommended the MoP note that in the absence of a previous catch limit, the average 5 years' catch is used as a starting point for the SIOFA trend analysis in accordance with the interim harvest control rules endorsed by MoP10.
211. The SC recommended the MoP note that catch limit advice had been provided for SIR. The SC recommended that the SIR management area should be the area bounded by the box defined in Table 4 defined below, with a catch limit of 78 t in 2025 based on the SIOFA trend analysis.
212. The SC recommended the MoP note that catch limit advice had been provided for DC. The SC recommended a catch limit of 44 t in 2025 based on the SIOFA trend analysis.

Table 4: 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

Shown in Figure 1, with the recent fishing footprint.

Figure 1: Proposed SIR and the DCR with recent fishing footprint (colours indicate the number of sets in each square)



213. The SC noted that CPUE-by-area analogy and Chapman mark recapture require good spatial representation within an area to avoid bias and provide sufficient recaptures, and that representative data collection in each toothfish management area must therefore be ensured.
214. The SC noted that the use of CPUE-by-seabed-area analogy, whilst uncertain, does provide a mechanism for developing catch advice in low-information areas based on information from stocks in other areas. The SC encouraged CCPs to explore the development of this method for targeted species other than toothfish.
215. The SC encouraged CCPs to explore the use of CPUE-by-seabed-area analogy to develop a management rule for WR that would provide some certainty or understanding about how a catch limit would be derived, while noting that catch taken from WR is accounted for in CCAMLR's stock assessment for Heard Island and McDonald Islands, which is currently undergoing a review.
216. The SC noted that the CCAMLR trend analysis rule methodology is currently being reviewed using a management strategy evaluation. The SC agreed to consider the outcomes of the review when they become available.
217. The SC noted that the current fishing season of 1 December to 30 November was introduced to align seasons with the CCAMLR season, but that there is no strong scientific reason for the choice of this period.
218. The SC thanked Dr Selles (France (OT)), Mr Sarralde (EU), and Dr Massiot-Granier (France (OT)) for this work.

7.3.4 Updates to the fisheries summary

219. The Science Officer presented Fisheries Summary: toothfish (*Dissostichus* spp., *D. eleginoides*, *D. mawsoni*) 2024 (SC-09-18).
220. The SC updated and endorsed the SIOFA fisheries summary for toothfish 2024 (SC-09-18-Rev1).
221. The SC recommended that the MoP endorse the SIOFA fisheries summary toothfish 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
222. The SC requested that the Secretariat add tagging rate required and achieved and the tag overlap statistics achieved, where possible, in next year's update.
223. The SC requested that the Secretariat separate out the biological data summaries by species in next year's fishery summary for toothfish.

7.4 Oilfish

7.4.1 Descriptive characterisation

224. The SC recommended that the MoP note that there was no new information for oilfish and escolar that necessitated any change to the SC's previous advice made on the basis of the characterisation at SC8.

7.4.2 Stock monitoring and data collection

225. The SC noted that SIOFA has sufficient length and weight observations to generate length-weight frequencies.
226. The SC noted that otolith sampling and maturity observations are not currently being collected and agreed that these should be a priority for monitoring programmes going forward.

7.4.3 Stock assessment

227. The SC welcomed the offer from Chinese Taipei to present papers on CPUE standardisation for its oilfish fishery and preliminary biological parameters for oilfish at SC10.

7.4.4 Updates to the fisheries summary

228. The Science Officer presented Fisheries Summary: oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) 2024 (SC-09-19).
229. The SC revised the SIOFA fisheries summary for oilfish and escolar (SC-09-19-Rev1). The SC updated and endorsed the 2024 SIOFA fishery summaries for oilfish and escolar (SC-09-19-Rev1).
230. The SC noted that it would be useful to expand the section on catch and effort in future years to include oilfish bycatch data from the IOTC.
231. The SC requested that the Secretariat separate out the biological data tables and figures by species in next year's fisheries summary for oilfish and escolar.
232. The SC recommended that the MoP endorse the SIOFA fisheries summary for oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.

7.5 Other species

7.5.1 Preliminary quantitative assessment of Portuguese Dogfish

7.5.2 Other species

7.5.3 Updates to the fisheries summaries

233. The Science Officer presented SIOFA Fishery Summaries: hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2024 (SC-09-20).
234. The SC updated and endorsed the 2024 SIOFA fisheries summary for hapuka (SC-09-

- 20-Rev1).
235. The SC requested that the Secretariat separate out the biological data tables and figures by species in next year's fishery summary for hapuka.
236. The SC recommended that the MoP endorse the SIOFA fisheries summary for hapuka (*Polyprion* spp., hapuku wreckfish *P. oxygeneios*, wreckfish *P. americanus*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
237. The Science Officer presented Fisheries Summary: common mora (*Mora moro*) 2024 (SC-09-21). The creation of this fisheries summary was recommended by SC8.
238. The SC updated and endorsed the 2024 SIOFA fisheries summary for common mora (SC-09-21-Rev1).
239. The SC noted that there is a paucity of biological information collected on common mora primarily due to observers' focus on shark data collection in this fishery. The SC noted that more active monitoring may be warranted as this is a targeted species.
240. The SC recommended that the MoP endorse the SIOFA fisheries summary for common mora (*Mora moro*) 2024 and make a public version of it, with confidential information removed, available on the SIOFA website.
241. The SC recalled that it had reviewed and updated a SIOFA fisheries summary for tarakihi (*Nemadactylus macropterus*) at SC8. The SC reaffirmed that, due to the low amount of reported catch of this species, the updating of this fisheries summary was a low priority, and future updates of the report will be considered at a future date.
242. The SC thanked the Science Officer for the updated fisheries summaries and noted that there was a large amount of work involved in creating these. The SC noted that it would need to carefully consider the Secretariat's workload and the prioritisation of tasks when considering the development of additional fisheries summaries.

Agenda item 8. Bycatch and incidental captures

8.1 Deepwater chondrichthyans

8.1.1 Review of progress against CMM 12(2023) (Sharks), including development of precautionary bycatch limits

243. Dr Krystle Keller (Australia) presented SC-09-37, which provided an update on the ecological risk assessment (ERA) of deepwater chondrichthyan species. Dr Keller explained that this study assessed how the availability attribute (i.e., horizontal overlap between a species' distribution and fishing effort) within the Sustainability Assessment for Fishing Effects (SAFE) methodology may be sensitive to the underlying distribution mapping source used. Vulnerability scores for 94 deepwater chondrichthyan species in the SIOFA Area were compared across demersal trawl, midwater trawl, and demersal longline gears using three species distribution mapping sources: AquaMaps, FAO GeoNetwork and International Union for Conservation of Nature (IUCN) Red List where data were available. Several species were considered by the SAFE to be at either extreme or high vulnerability in the SIOFA Area, especially in demersal longline and demersal trawl fisheries. There are fundamental differences between the three mapping sources in terms of how distributions are derived (e.g., model-based or expert-based). Most studies do not consider the limitations of the chosen mapping source or compare multiple mapping sources as a sensitivity when undertaking an ERA. The choice of one mapping source over the other should thus be carefully considered, as the availability score in the SAFE has a large influence on the resulting vulnerability score.

244. The SC thanked Dr Keller and the paper's authors for conducting this work.
245. The SC noted Australia's update to the chondrichthyan ERA by investigating the different mapping sources (AquaMaps, FAO GeoNetwork and IUCN RedList) to assess the underlying reliability of their predicted distributions.
246. The SC noted that the choice of distribution mapping source was found to have a significant effect on the SAFE vulnerability score across all three gears, with results using the IUCN Red List having a greater number of species classified as high or extreme vulnerability than results using the other two mapping sources.
247. The SC noted that these findings highlight the importance of considering the appropriateness of predicted distributions from these mapping sources when conducting an ERA.
248. The SC agreed that comparing SIOFA catch data against each of the mapping sources (at 20' scale) would assist future risk assessments choose the most appropriate mapping source for each species and agreed to add this task to the SC workplan.
249. SC noted that there would be value in future ERA analyses in having gear separated and an all-fishery-combined analysis.
250. The SC noted that in paper SC-09-37 the nomenclature of Plunket's shark (*Centroscymnus plunketi*) has been updated to largespine velvet dogfish (*Scymnodon macracanthus*) following the official name change in 2023.
251. The SC recommended that the MoP update the list of species at high risk and of concern in Annex 1 of CMM 12(2023) (Sharks) by incorporating the name change of Plunket's shark. The proposed revision to CMM 12(2023) Annex 1 is attached as **Annex N**.
252. Mr Paul J. Clerkin (SIODFA) presented SC-09-INFO-21, which provided an update on the progress of the Project DWS-2023-02 on identification and trends in deepwater sharks. The project aims to compare the 2012 and 2014 shark species and capture rates to current species and rates, collect samples and data for future studies, and develop an improved shark identification guide. The project is on schedule and the field studies are expected to take place on the F.V. Will Watch during the vessel's August-September 2024 trip. A multi-axis, digital and downloadable identification key is currently being developed in cooperation with FAO and is scheduled to be prepared for the August-September 2024 trip. Sampling protocols, digital information management systems, and specialised equipment are being developed.
253. SIODFA informed the SC that Mr Clerkin has also collected detailed biological samples from sharks from two previous trip on the F.V. Will Watch in 2012 and 2014, and offered to make the data available to the SC.
254. The SC welcomed the offer and encouraged interested CCPs to follow up with SIODFA on how to access and utilise these data.
255. Mr Trent Timmiss (Australia) presented SC-09-38, which summarised the available research on the efficacy of utilising gear modifications such as trace type and hook shape to mitigate catches of deepwater sharks in response to the tasking from MoP10. Mr Timmiss explained that the use of monofilament traces (branch or leaders) in longline fisheries has been widely recommended as an effective tool to reduce bycatch of sharks and improve catch rates of the target species. There is substantial literature and studies on the use of monofilament trace to mitigate shark catches in pelagic longline fisheries. This research was only briefly summarised in the paper. The paper instead focussed on the limited number of studies available on the effectiveness of the type of leaders or branch lines material (wire or monofilament)

- in demersal longline fisheries.
256. Mr Timmiss further explained that these studies support the conclusions of the pelagic research suggesting that the use of monofilament traces can be an effective mitigation measure for reducing the bycatch of deepwater sharks in demersal longline fisheries. In particular, one study in the Northeast Atlantic Ocean (Menezes et al. 2009) showed that catch rates of Portuguese dogfish (*Centroscymnus coelolepis*) were almost eliminated with monofilament trace compared to wire trace fishing in the same area. This study also indicated that catches of many other deepwater shark species are reduced with monofilament traces. Hook shape was not found to have a significant effect on deepwater shark catch rates in the available literature.
257. Mr Timmiss noted that, whilst there is a need for further research addressing bycatch mitigation measures for deepwater sharks and identifying efficient strategies, the available literature suggests that the prohibition of wire traces could be effective in reducing the bycatch of the most commonly caught species and genus of deepwater shark in the SIOFA Area.
258. The SC noted that :
- a. most research on the use of wire or monofilament traces has been focussed on pelagic sharks in tuna fisheries.
 - b. there are a limited number of studies investigating different trace types on demersal longlines, but one study in the North Atlantic Ocean indicated wire traces were among the causes of increased shark bycatch rates.
 - c. line construction can have an influence on shark catch rates and needs to be considered.
 - d. the use of circle hooks has not been found to have a significant impact on reducing shark catch rates in deepwater fisheries.
259. The SC noted that there was limited information available on the impact of wire traces on deep water bycatch rates in bottom longlines.
260. The SC recommended further research be conducted during 2024 on trace type in the SIOFA Area. The trial should be a well-designed experiment that will provide a statistically robust test on the impact of using alternative trace types on the bycatch rate of sharks and target species. The results of this trial together with the final results of the DWS-2023-01 project should be presented during a focused topic at SC10.
261. The SC recommended that a project advisory group be set up to review the experimental design and then the preliminary outcomes to help ensure the project's success.
262. The SC recommended that the MoP note the upcoming trial on the impact of using alternative trace types on the bycatch rate of sharks and target species.
263. The SC thanked Mr Timmiss and the other authors for conducting this work.
264. Mr Roberto Sarralde (EU) presented SC-09-40, which outlined preliminary analyses on the biological information of the main species of deepwater sharks sampled in Spanish SIOFA fisheries. Mr Sarralde explained that while there are regulations to preserve deep-water chondrichthyans, the lack of basic information (biology, ecology, and population status) makes the management and conservation strategies difficult. Furthermore, the taxonomy of several groups of deep-water sharks remains unresolved, with recurrent misidentification in certain genera. Thus, the EU, under the EU project DWS-2023-01 "Improving scientific advice on deepwater sharks in the

SIOFA Area”, is working to improve the understanding of the deepwater sharks’ life history traits through the analysis of biological data sampled by F.V. Ibsa Quinto in the SIOFA Area, including length data, length-weight relationships, sex ratio, maturity stages, size at maturity, depth distribution, and nominal CPUE. The most abundant shark species caught, *C. coelolepis*, shows a stable trend in the nominal CPUE. On the contrary, other species like *Dalatias licha* and *Deania calceus* show a decreasing trend in the nominal CPUE in the latest years and *C. granulosus* shows an irregular pattern in the CPUE trend. Furthermore, molecular identification of the specimens sampled will be conducted, with the preliminary results to be presented at SC10 and the final results to be presented in the final project report.

265. The SC recommended that the MoP note the declining trend in nominal CPUE for *Dalatias licha* and *Deania calceus*.
266. The SC thanked Mr Sarralde and the other authors for presenting the preliminary results and looked forward to receiving the final report.
267. Mr Sarralde (EU) presented SC-09-42, which provided an analysis on the determination by species of shark of the ratio of live and dead individuals observed on-board, as well as their condition at release, from Trip 41 (from 20/07/2022 to 10/10/2022) and trip 43 (from 25/03/2023 to 09/07/2023). Most sharks released in Trips 41 and 43 were in SIOFA Subarea 2 and a few individuals of *D. licha* were also released in SIOFA Subarea 1. Out of the 60 individuals released (33 in Trip 41 and 27 in Trip 43), 13 were released in a moderate condition, with minor damage, and 47 individuals were released in excellent condition without any damage. Out of the 4 different species released, none of them presented a worse condition at release than the others.
268. The SC noted that the results of this study indicate that most sharks that were caught were dead, and very few sharks were alive and in a condition to be returned to the water. However, Mr Sarralde noted that there was also anecdotal evidence to suggest that the reverse may be true on some trips.
269. The SC thanked Mr Sarralde and the other authors for this work.
270. Dr Cristina Rodriguez-Cabello (EU) presented SC-09-41, which summarized the preliminary results obtained from tagging deepwater sharks in the Indian Ocean (SIOFA Area). Nineteen sharks were tagged, twelve with electronic popup tags type Benthic survival (n=9) and MiniPATs (n=3). Analysis of the tags released provided information on the survival after release of three species: *Centrophorus squamosus*, *C. granulosus* and *Squalus mitsukurii*. All the tags were released (pop-up) in the proximity of the tagging area. Findings showed that benthic survival tags are not the most appropriate for survival studies on deepwater sharks. No depth is recorded and thus they do not fully enable the interpretation of the behaviour of the deepwater sharks. A priori none of the benthic SPAT tags remained at surface after release, which indicates that the sharks dived and did not die directly. The MiniPAT attached to a *Centrophorus squamosus* clearly indicated that the shark died immediately. The benthic tags attached to *Centrophorus granulosus* suggest the sharks might not die immediately but after 12 days. *Squalus mitsukurii* results suggest that it might have survived but the activity recorded is very low, although the swimming behaviour of this shark is unknown.
271. The SC thanked Dr Rodriguez-Cabello and the other authors for conducting this work and looked forward to further results from additional planned tagging studies.
272. Dr Laurence Kell (EU) presented SC-09-39, which provided an update on the

hierarchical stock assessment risk framework and discussion of potential management measures for deepwater sharks, initially proposed at the Workshop on deepwater sharks in the SIOFA Area (WS2023-DWS). Dr Kell highlighted problems with conducting stock assessments for deepwater sharks as they were a bycaught species with low productivity. Dr Kell summarised a range of potential approaches that could improve the understanding and management of these species, particularly in data-limited scenarios, such as enhancing biological data collection, tagging studies, using environmental DNA (eDNA) to model habitat suitability and interspecies correlations, and spatial analyses.

273. The SC noted that the following work would contribute to strengthening the knowledge base and enhancing management measures for deepwater sharks in the SIOFA Area:
- a. Enhancing the collection of biological data, especially ageing data, to assess biomass trends and establish sustainable catch levels for species like the Portuguese dogfish.
 - b. Gathering additional spatial distribution data to identify aggregation areas for potential spatial management.
 - c. Conducting tagging studies for data on vulnerable species.
 - d. Utilising eDNA to improve knowledge of spatial and depth data.
 - e. Implementing spatial analyses to inform move-on rules for fisheries, reducing the impact on vulnerable sharks.
 - f. Exploring gear modifications to mitigate the effects of fisheries on these sharks, including defining gear types in line with SC8 recommendations.
 - g. Evaluating the effectiveness of the interim management measures for species like the Portuguese dogfish through Monte-Carlo simulations and CPUE depletion analyses.
274. The SC thanked Dr Kell for presenting this work.

8.2 Development of a SIOFA skate tagging programme

275. The SC recalled that the MoP had endorsed the recommendation from SC8 to consider developing and implementing a tagging programme as soon as possible for skates caught alive and with a high probability of survival on longline vessels.
276. The SC welcomed the offer from Australia to work with interested CCPs to prepare a proposal for a SIOFA skate tagging programme and present it at SC10.
277. The SC welcomed the offer from Australia to include information that summarises the skate tagging programme operated by CCAMLR, including procedures, methodologies, and data collection forms.

8.3 IOTC bycatch

278. The Data Officer presented SC-09-36-Rev1, which provided the SIOFA Secretariat with an update of catch figures up to 2022 reported to IOTC by its Members, including 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 flagged to countries that are not SIOFA CCPs caught significant quantities of species that fall under the SIOFA management mandate. Several SIOFA CCPs also have significant catches which have not been reported.
279. The SC requested that the Secretariat continue to report IOTC bycatch for species that are managed by SIOFA.
280. The SC recommended that the MoP note that significant catches of species that are managed by SIOFA but taken as bycatch by fisheries managed by other RFMOs, such

as IOTC, are not reported to SIOFA, as they are only reported to those RFMOS.

281. The SC welcomed the offer from the Seychelles to provide a summary of its oilfish fishery and associated data at SC10.
282. The SC noted that if CCPs report their relative catches of SIOFA key species to both the IOTC and SIOFA, this could potentially result in double-counting of the same data. The SC requested CCPs to identify whether they report any data simultaneously to IOTC and SIOFA, and inform the SIOFA Secretariat if they do so.
283. The Executive Secretary informed the SC that he is continuing to communicate with the IOTC Secretariat regarding a formal cooperation arrangement between SIOFA and the IOTC.

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

8.4.1 Report on observations of marine mammals interacting with fishing gear

284. The Data Officer presented SC-09-INFO-08, which summarised information about interaction with whales in SIOFA demersal longline fisheries as recorded in the observer databases. In 2022, 3 CCPs used demersal longlines and 2 CCPs reported observations of whales. The observations were mostly reported in Subarea 3b and consisted mostly of sperm whales (*Physeter macrocephalus*).
285. The SC welcomed the offer from France (OT) to present a paper at SC10 on the observed decline in the killer whale population around Crozet Island and an investigation of possible causes.
286. The EU offered to contribute to this study by sharing photos and data related to interactions between killer whales and fishing gear in the area.

8.4.2 Seabird mitigation measures and seabird data collection

287. On behalf of the Secretariat, the SC Chair presented SC-09-22, a paper co-authored by the SIOFA Secretariat and the Agreement on the Conservation of Albatrosses and Petrels (ACAP) Secretariat. The paper provided a comparison of SIOFA's seabird interactions and mitigation measures with those of other RFMOs and identified outstanding ACAP advice.
288. The SC requested that the Secretariat, once it has established a linkage between the Observer database and the Catch Effort database, provide a summary of incidental bycatches reported from the vessel logbooks and the observer logbooks. The SC requested that the Secretariat identify any potential data gaps, potential improvements that could be made for data collection and reporting by CCPs, and potential amendments to CMM 02(2023) that would clarify what information should be collected from the two types of logbooks.
289. The SC noted that the collection of data on incidental bycatches of seabirds is not mandatory for non-demersal longlines or trawls.
290. ACAP presented SC-09-INFO-24, which provided an update on ACAP activities since March 2022 and advice on reducing the bycatch of albatrosses and petrels in SIOFA fisheries. ACAP advised that six of the eight ACAP High Priority Populations assessed occurred in the SIOFA Area, demonstrating the high importance of the area to these High Priority Populations and the need to continually review and update SIOFA's seabird bycatch mitigation measures. ACAP also explained that one of the key outcomes of its review of its best practice advice is that the combined implementation of line-weighting, night-setting, and bird-scaring lines is particularly effective for mitigating seabird bycatch. Other important updates to ACAP's best practice advice can be found in the following seabird bycatch mitigation advice documents: ACAP 2023 Trawl mitigation review and best practice advice, ACAP 2023

Demersal Longline mitigation review and best practice advice, and ACAP 2023 Pelagic Longline mitigation review and best practice.

291. The SC recommended that the MoP note that SIOFA demersal and pelagic longline fisheries have implemented a number of ACAP best practices for mitigating seabird bycatch, but that the updated best practice from ACAP is that the implementation of line-weighting, night-setting, and bird-scaring lines in combination, which is not currently required by SIOFA CMMs, could further improve SIOFA's mitigation measures.
292. The SC recommended that the MoP note that many ACAP best practices for mitigating seabird bycatch have not been officially implemented in SIOFA trawl fisheries, although many are currently in use by some flag States, and that mandating such practices so that they are more widely used would further improve SIOFA's mitigation measures.

Agenda item 9. Vulnerable Marine Ecosystems (VME)

293. Agenda item 9 was chaired by the SC Vice-Chair.

9.1 Annual report of VME encounters

294. The Data Officer presented SC-09-INFO-09, the report on notifications of VME encounters for 2023 fishing activities. In accordance with CMM 01(2023) (Interim Management of Bottom Fishing), CCPs shall report to the Secretariat any encounter of VMEs, as defined in para 12. In 2023, no such encounters have been reported to the Secretariat by any of the 6 CCPs having bottom fishing operations with trawls or longlines gears.

9.2 VME data and the setting VME of encounter thresholds

295. The Science Officer presented SC-09-25, which provided a review of VME encounter thresholds, and methods for their definition, in other RFMOs and organisations with a mandate to manage bottom fisheries, namely CCAMLR, Fisheries Committee for the Eastern Central Atlantic (CECAF), General Fisheries Council for the Mediterranean (GFCM), Northwest Atlantic Fisheries Organization (NAFO), North-east Atlantic Fisheries Commission (NEAFC), North Pacific Fisheries Commission (NPFC), South-east Atlantic Fisheries Organisation (SEAFO), SPRFMO, and Western Central Atlantic Fishery Commission (WECAFC). For each organisation, thresholds for different types of fishing gear (usually longlines and trawls) are reported separately. Of all the organisations reviewed, CECAF, GFCM, and WECAFC have not adopted individual encounter thresholds resulting in a move-on rule and were thus included in a separate subsection.
296. The SC agreed to hold a focused session at SC10 to discuss encounter thresholds and other VME-related issues.
297. France (OT) suggested that separate VME encounter thresholds should be developed for different VME taxa groups. France (OT) noted that it records all benthic organisms on each line from its demersal longline fishery, including volume and weight, and has started calculating the probability of detecting organisms on various thresholds. The preliminary results have been presented to CCAMLR as paper WG-EMM-2019/52.
298. The SC welcomed the offer by France (OT) to present a paper with the final results to SC10.
299. The DSCC presented SC-09-INFO-28, which proposed further action needed to protect VMEs, including all seamounts. The DSCC noted the progress made by SIOFA

with respect to the management of bottom fishing, and the interim measures adopted to protect vulnerable marine ecosystems from significant adverse impacts (SAIs). The DSCC suggested that SIOFA conduct a substantive review of SIOFA bottom fishing and interim measures to identify progress made and gaps remaining, including with regard to enhancing biodiversity protection, progressing VME protection, reviewing and updating the benthic fishery impact assessment standard (BFIAS) and BFIAAs, updating the VME indicator taxa definitions and encounter thresholds, and taking into consideration the special circumstances of the Saya de Malha Bank.

9.3 VME mapping project (PAE2021-02)

300. The Science Officer introduced the PAE2021-01 Final Report on bioregionalisation and management of VMEs (SC-09-27). The project was conducted by Dr Berta Ramiro Sánchez, Dr Skipton Woolley, and Dr Boris Leroy (Laboratory of biology of aquatic organisms and ecosystems (BOREA), Muséum d'Histoire Naturelle). It involved the use of predictive modelling approaches to develop bioregionalisations of the SIOFA Area based on VME indicator taxa. The draft report was submitted and discussed at SC8 and the report authors have incorporated the comments made at SC8 into their final report.
301. Dr Martin (France (OT)) pointed out that the authors noted that the study was based on the very limited availability of data in the SIOFA Area, that interpretation must be exerted with caution, and that more data on deep-sea benthic taxa need to be collected in the SIOFA Area. Dr Martin introduced examples of work that could be done to improve the bioregionalisation, such as using benthos bycatch data from commercial fisheries and scientific surveys to improve VME mapping based on species and density, using deep-learning to develop automated systems for identifying VMEs from image data, and developing automated “cheap” deep-sea benthic cameras to collect in-situ photos.
302. The SC agreed to discuss techniques for improved mapping and recording of VMEs as part of a focused session on VMEs at SC10.

9.4 Management options for preventing SAIs on VMEs

303. The SC recalled that it had previously recommended that the MoP consider a table of expected performance of different management measures and voluntary industry actions intended to minimise trawling effects with potential timelines (SC8 Report, Annex L) and that the MoP had requested the SC to discuss 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 (MoP10 Report, para 137). The SC noted that precautionary approach, spatial management measures, move-on rules, and identifying risks for determining appropriate measures represented a very broad range of approaches and that providing meaningful analysis of the various options available for each would require a great deal of time and resources that is currently beyond the SC's short-term capacity. The SC recommended that the MoP reconsider the table and narrow down the types of approaches that it considers to be appropriate to streamline the number of management options that the SC should discuss and provide advice on.
304. The SC agreed to hold further discussions on management options for preventing SAIs on VMEs as part of a focused session on VMEs at SC10.

9.5 Options for recording of VME taxa by line or line segment

305. The SC recalled its previous discussions at SC8 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(2023) (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 noted that amending the data collection requirement so that data would be recorded at the line segment level would be difficult for some CCPs as it would require amendments to domestic observer protocols. The SC noted that an alternative solution would be to remove the word “segment” from paragraph 12a of CMM 01(2023), but that this would effectively change the VME encounter threshold and the SC has not undertaken any analysis to confirm the appropriateness of the resulting new threshold. The SC agreed to discuss this issue further as part of a focused session on VME at SC10.
306. The SC recommended that the MoP note that it intended to hold discussions on options for recording of VME taxa by line or line segment at a focused session at SC10.

9.6 Revisions of the list of VME taxa

307. The SC agreed to discuss potential revision to the list of VME taxa, including the potential inclusion of seagrass and rhodoliths, as part of a focused session on VME at SC10.

Agenda item 10. Marine protected areas

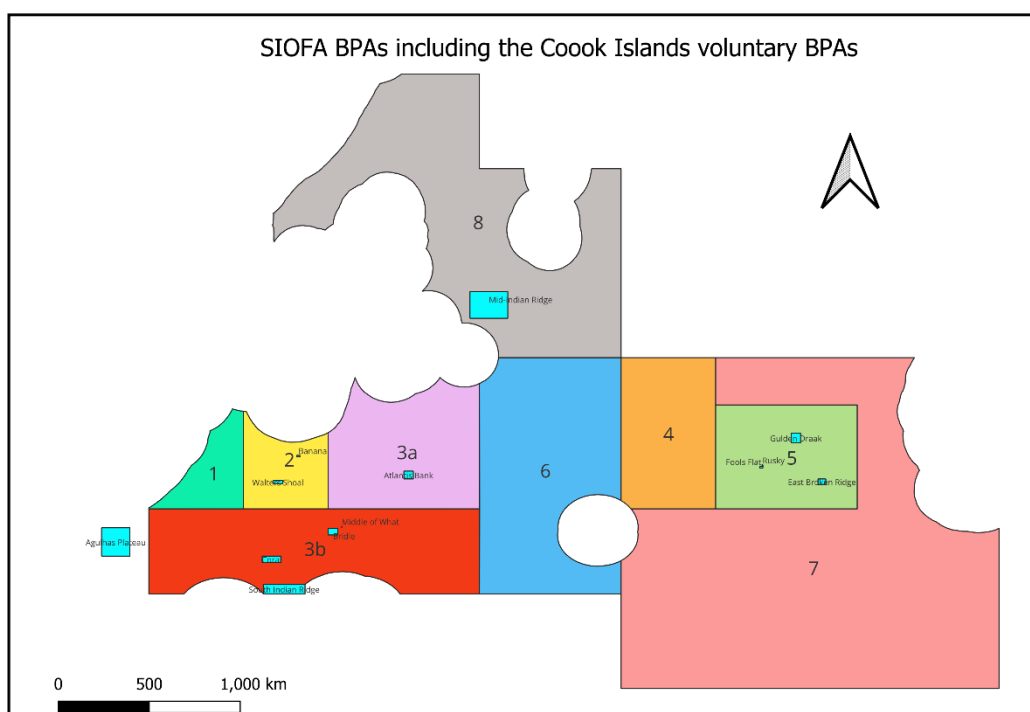
10.1 Protocols to designate and evaluate MPAs

308. The Executive Secretary presented SC-09-INFO-16, a policy brief written by Dr Amber Himes Cornel on other effective area-based conservation measures (OECMs). The OECM concept is in line with the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity (CBD) (target 3) and the Sustainable Development Goals (SDGs) adopted by the United Nations in June 2023 (SDG 14.5). The policy brief explained what OECMs are and why they are important, and offered some steps to identify, assess and report OECMs fisheries.
309. The SC noted the information in SC-09-INFO-16 about the OECM process, encouraged CCPs to investigate this process as an option for providing scientific information and approaches, and suggested that this process may be of interest to the MoP.
310. The SC recommended that the MoP consider whether it would be appropriate to forward any SIOFA spatial management measures to the CBD world database on MPAs and OECMs or take any other related conservation measures.
311. The DSCC presented SC-09-INFO-27, which proposed implementing area protection in the SIOFA Area. The DSCC noted and welcomed the inclusion of ‘Marine protected areas’ on the SC-09 Agenda, including the proposed consideration of the outputs of project PAE2022-MPA1. The DSCC noted the considerable progress made on mechanisms to identify and manage protection of VMES, and significant advances made in other international fora relating to the identification and implementation of marine area protection, including for reasons beyond the protection of vulnerable marine ecosystems from SAIs. The DSCC recommended that SIOFA conduct a review of interim BPAs and their protection plans, Ecological or Biologically Significant Areas (EBSAs) in the SIOFA Area, Important Marine Mammal Protected Areas (IMMAs) in

- the SIOFA Area, and VMEs identified in the SIOFA Area.
312. The SC considered a proposal from Australia for an intersessional workshop to progress the development of work to designate and evaluate marine protected areas (**Annex O**). Australia proposed a 4-hour virtual session in mid-November 2024. The SC agreed that the focus of such a workshop, should it proceed, would be on a review of the protocol for future marine protected areas designation, and the development of a workplan, building on substantive work undertaken by SIOFA.
 313. Dr Rubén H. Roa-Ureta presented the draft report for Project PAE2022-MPA1 on protocols to designate and evaluate marine protected areas (MPAs) in the SIOFA Area (SC-09-INFO-19). Dr Roa-Ureta reported that he and the other consultants have conducted an extensive literature review related to MPAs, covering the history of the use of the term; MPA-related discussions in past meetings of SIOFA; the reports of other organisations, including the IUCN, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the FAO, NAFO, and SEAFO; and research articles in peer-reviewed scientific journal. The consultants also reviewed publicly available bathymetric data, and species composition data from SIOFA's Catch Effort and Observer databases and found that there are sufficient data to conduct advanced spatial analysis with statistical models. Nevertheless, these databases need some more variables to cross-reference between them and build more complete data sets for modelling and additional environmental variables that need to be recorded. In addition, the databases need correction of incorrect records and point spatial data for all hauls.
 314. Dr Roa-Ureta explained that for the evaluation and monitoring of MPAs, two methodologies have been demonstrated to work well with the kind of data collected by SIOFA: a one-stage method called the Species Archetype Model (SAM) and a two-stage method using Spatial Generalised Linear Models (SGLM). The SAM method conducts simultaneous analysis of all species and their connection with environmental covariates while the SGLM method involves first selecting a group of species of interest and then building the spatial distribution. The consultants applied the SAM method to spatial block data in the Observer database and the SGLM method to point spatial data in the Catch Effort database. The SAM method modelled benthic species and the SGLM method modelled some IUCN flagged cartilaginous fish and demersal fish. Both methods yielded consistent results, indicating the existence of two hot spots of diversity south of Madagascar.
 315. Dr Roa-Ureta explained that the consultants also conducted a review of the protocols for the designation of MPAs from the IUCN, the United States of America (USA), the EU and Australia. The consultants recommended the IUCN protocol as it offers various management categories with different degrees of protection, which permits flexibility and gradual implementation, IUCN management categories fit the areas of interest of SIOFA, the 'shared governance' approach fits with SIOFA's status, and other protocols are essentially similar.
 316. The SC suggested that the final report should include an evaluation of the SIOFA interim protocol for the designation of protected areas against the protocols considered by the consultants.
 317. The DSF Project suggested that the IUCN MPA criteria and protocols were intended to support the CBD from a purely biological biodiversity conservation standpoint and may be less applicable to RFMOs, which work with fisheries and avoiding SAIs. The DSF Project informed the SC that many other RFMOs have sought to develop their

- own protocols in line with the FAO Code of Conduct and the Deep-sea Guidelines.
318. The SC noted the information in the preliminary report and noted the need to consider the outcomes of the final report together with the SC’s other work related to BPAs and MPAs in a comprehensive and cohesive manner.
 319. The SC noted that the evaluation of the SIOFA interim protocol could be considered at the proposed MPA workshop.
 320. The SC thanked Dr Roa-Ureta and the paper’s authors for this work and looked forward to receiving the final report.
 321. The Cook Islands suggested that any future analyses related to BPAs and MPAs should take into consideration the Cook Islands voluntary BPAs that overlap with SIOFA (shown in Figure 2 below).

Figure 2: SIOFA BPAs (CMM 01(2023)) including the Cook Islands voluntary BPAs



Agenda item 11. Data standards

11.1 Annual catch and effort data submission

322. The Data Officer presented SC-09-INFO-04, which summarised the CCP data submission that was performed under the requirements of CMM 02(2023) (Data Standards). In 2023, eight CCPs provided data to the Secretariat for fishing activities performed in 2022. Most of the datasets received followed the requirements. For the next data submission (deadline 31 May 2024), the Secretariat will update the data submission templates to accommodate the changes in CMM 02(2023). The changes mostly consist of clearly recording the presence/absence of benthos bycatch for each bottom fishing operation, which applies to the catch and effort data and to the observer data.
323. The SC requested that once the Secretariat has been able to link the Observer and

Catch Effort databases, it should add a column indicating the percentage of effort that has observer data associated with it to the table of data submitted per CCP and main gear in future summaries of CCP data submissions.

324. The Data Officer informed the SC that the data that it receives from the IOTC are not yet stored in the SIOFA database as they have a different format and specifications.
325. The SC requested the Secretariat to present a paper to SC10 describing the SIOFA databases structure to provide some insight to people receiving data from the Secretariat regarding the data.
326. The SC thanked the Secretariat, and the Data Officer in particular, for their work preparing and managing the data.
327. The SC welcomed the offer by China that it will submit data submission forms for squid jigging vessel logbooks and observer logbooks at SC10.
328. The SC recommended that the MoP note that it would consider the data submission forms for squid jigging vessel logbooks and observer logbooks at its next meeting.

11.2 Observer harmonisation

11.2.1 Presentation of the report of the Workshop on Harmonisation of Scientific Observers (WS2024-OBS)

329. The Convener of the SIOFA SC Workshop on the Harmonisation of Scientific Observers (WS2024-OBS), Dr Sebastián Rodríguez Alfaro (EU), presented the WS2024-OBS Convener Report (SC-09-33), as well as a summary of the Workshop's inputs based on the Workshop's recommendations and participants' further comments on logbooks, the draft CMM for an observer framework and the cruise report (SC-09-43).
330. The SC thanked the participants of the workshop for their attendance, the invited experts for their contributions, and the Convener and the Secretariat for organising the workshop and preparing the report.

11.2.2 Harmonisation of Scientific Observer programmes

331. The SC Chair introduced SC-09-INFO-13, which was first presented at SC7 as SC-07-INFO-08. The paper summarised the key principles for the development of a SIOFA Observer Code of Conduct, including requirements for independence, managing conflicts of interest, and health and safety considerations for Scientific Observers, so as to ensure the collection of high-quality, reliable data from CCPs' Scientific Observers.
332. Dr Keith Reid (Ross Analytics) presented SC-09-INFO-20, which provided a draft report on Project SEC2022-OBS1 on the establishment of a framework for scientific observation of SIOFA fisheries, a project being conducted as part of a consultancy also involving Mr Sihle Victor Ngcongco (Imvelo Blue Environment Consultancy). The draft report was first presented at WS2024-OBS.
333. Dr Reid explained that the envisioned framework would follow a hierarchical structure as follows: 1. SIOFA agreed data requirements, 2. A CMM that would provide the policy-level framework for the Observer Scheme, 3. Detailed description of data requirements, 4. Operation of a SIOFA Observer Scheme, 5. Technology and new sampling methods. The guiding principles of the framework are that a harmonised Observer Programme should be the inter-section of the different observer programmes and should not require large-scale change in individual CCP's observer programmes, and that observer data should only be data that can be collected independently by observers.
334. Dr Reid explained that the consultants have proposed logbook forms and instructions

- and that these were considered at WS2024-OBS. It is recommended that SIOFA determine what data are mandatory, preferably “all” data as a default, trial the use of the proposed logbooks for 1 year to evaluate complete data lifecycle processes, and develop a SIOFA Observer Manual that describes how data should be collected.
335. Dr Reid further explained that the consultants have proposed a SIOFA Observer CMM based on the existing CMM 02(2023) with annexes that include a Code of Conduct for an observer scheme, roles and responsibilities of observers, and categories of data that should be collected by observers. It is recommended that SIOFA develop the CMM to outline categories of data required; specify the detailed sampling mechanisms and requirements through delegated responsibilities, i.e., “as agreed by the Scientific Committee” to allow greater flexibility in setting and revising scientific sampling priorities; and ensure an iterative process that aligns the requirements in the CMM with the data in Observer Logbooks, Instructions and Observer Manual.
 336. Concerning the operation of the Observer Programme, Dr Reid recommended that from a strategic standpoint, observer coverage levels should be defined for all gear types. From an operational standpoint, he recommended that minimum standards be defined for operation and training in CCP Observer Programmes, and that a SIOFA-level accreditation process be established, involving a review process, self-reporting and assessment.
 337. With regard to technology and new sampling methods, Dr Reid explained that the consultants reviewed the potential role of “currently implementable Electronic Monitoring (EM) systems” as part of the observer data collection. It is recommended that SIOFA encourage CCPs to implement/develop EM processes where appropriate, and that the objective should be to submit data to SIOFA on Observer logbook forms and clearly indicating that such data have been collected using EM systems.
 338. Dr Reid also explained that the consultants have drafted recommendations for future work that are divided into ‘structural’ recommendations relating to policy decisions on the obligations of CCPs for data reporting in SIOFA, and ‘scientific’ recommendations relating to the detailed description of how those data reporting obligations are met.
 339. Dr Reid also offered to provide the SC with an annotated version of SC-09-43 to facilitate further discussion, which the SC welcomed.
 340. The SC thanked Dr Reid and Mr Ngcongong for their work.
 341. The SC considered the recommendations from the WS2024-OBS report (SC-09-33), the Workshop Convener’s summary of inputs for further consideration by the SC (SC-09-43), and the recommendations from the consultants (SC-09-INFO-20), together.
 342. The SC noted that the proposed observer logbook forms are intended as a minimum set of data that should be collected and for use for the data submission from CCPs to the Secretariat, but the SC also noted that for data collection, CCPs can choose to use these forms or their own data collection systems.
 343. The SC supported the structure and content of the new observer logbook forms presented in paper SC-09-INFO-20 and considered at SC.
 344. The SC recommended that the MoP note that a trial of the new forms for data submission would take place in the coming year. The SC would then consider the results of the trial at its next meeting before formulating its recommendations to the MoP on the adoption of the forms.
 345. The SC recommended that, where possible, CCPs trial the submission of their 2023 observer logbook data using the new forms.

346. The Data Officer noted that CCPs could trial the new forms for the submission of the data required by 31 May 2024, or as an informal test following formal submission of their 2023 data. The Data Officer confirmed that data fields in the new forms are consistent with the data requirements set out in CMM 02(2023) (Data Standards).
347. The SC requested that the Secretariat and participating CCPs identify and document any issues with the new forms, and that these be summarised for consideration at a SC workshop on the observer forms.
348. The SC recommended that a Scientific Observer Form Workshop be held near the end of the 2024 calendar year to identify and resolve any issues with the new forms and the data submission process. The SC suggested that this workshop be convened by the SC Chair and a Convener's report summarising the workshop outcomes be submitted to SC10 along with any proposed revisions to the forms.
349. The SC considered the recommendation in paragraph 31a of the WS-2024-OBS report that the SC identify those fields in the cruise report that are to be considered as essential and that should be transmitted to the SIOFA Secretariat to be included in the SIOFA database. The SC also considered the recommendation in paragraph 31b that the SC discuss and identify the recipients and nature (voluntary/compulsory) of the observer cruise report, and the process by which the cruise report is electronically transmitted after being compiled. The SC agreed that the submission of observer cruise reports to the Secretariat should remain voluntary. The SC agreed to review examples of CCPs' cruise reports or CCPs' cruise report templates at the proposed Scientific Observer Form Workshop and identify elements that should potentially be included in observer logbook forms.
350. The SC considered the recommendation in paragraph 31c of the WS-2024-OBS report that the SC discuss the additional information that could be required to be recorded by observers. The SC noted that such information is already captured to some extent in the "comments" column of the data submission forms, while recognising that this topic could be further discussed at the proposed Scientific Observer Form Workshop.
351. The SC considered the recommendation in paragraph 31d of the WS-2024-OBS report that the SC further consider the consistency and overlap between the observer and the vessel logbooks. The SC noted that it would be difficult to progress discussions on this without conducting a deeper review as the two types of logbooks inherently serve different purposes and therefore require the collection of different data.
352. The SC recommended that the MoP note that a CMM on a SIOFA Observer Programme should include elements such as a Code of Conduct for an observer scheme, defined roles and responsibilities of observers, and categories of data that should be collected by observers.
353. The SC recommended that the MoP note that specific sampling mechanisms and requirements could be defined in an observer manual that is developed by the SC. This approach would allow greater flexibility in setting and revising specific scientific sampling priorities.
354. The SC noted that, in line with the recommendation in paragraph 32a of the WS-2024-OBS report, it has considered the information that it realistically needs for its work and would need to be collected by scientific observers, and how to ensure that there would be the capacity to collect and process those data, as part of its discussion at SC9. The SC noted that it would also be important to consider observers' workloads and the prioritisation of observer tasks.

355. The SC did not endorse the recommendation in paragraph 32b of the WS-2024-OBS report that the SC consider revising observer data submission timelines, recalling its discussions at SC8 that there are various constraints to achieving this, including the time required by both CCPs and the Secretariat to process, verify and finalise data submissions and their respective capacities to complete these processes more quickly (SC8 Report, paragraph 48).
356. The SC endorsed the recommendation in paragraphs 32c of the WS-2024-OBS report and agreed to review the proposed CMM and the observer logbooks to ensure that they are aligned at the proposed Scientific Observer Form Workshop.
357. The SC endorsed the recommendation in paragraph 39 of the WS-2024-OBS report and agreed to consider specific observer-related topics for its medium-term workplan under agenda item 14.4.
358. The SC endorsed the recommendation in paragraph 47 of the WS-2024-OBS report and agreed to discuss the potential future work identified by the SEC2022-OBS1 project, prioritizing the Scientific rather than the Structural list of projects, as part of its workplan under agenda item 14.4.
359. The SC endorsed the recommendations in paragraph 48 of the WS-2024-OBS report that a prioritization and tentative timeline (e.g., a staged process) of the projects would be beneficial in drafting a mid-term plan for the SC to address observer harmonisation and that the timeline for these projects would be on the scale of 2 years.
360. The SC endorsed the recommendation in paragraph 49 of the WS-2024-OBS report that it will be important to keep this process of development as iterative, with periodic checks and reassessment, including on the timeline, to optimize the outcomes given the available resources.
361. The SC endorsed the recommendation in paragraph 50 of the WS-2024-OBS report that the SC consider further work on developing an accreditation process for SIOFA.
362. The SC strongly encouraged CCPs to include information on the accreditation of their observers and/or observer programs in next year's National Reports to facilitate discussions on the SIOFA-level observer accreditation options.
363. The SC noted that the establishment and operation of a SIOFA-level accreditation system would be beyond the current capacity of the Secretariat, and it would be worthwhile exploring the use of an accreditation agent. Noting the SC's already full workload, the SC agreed to defer further discussion of this topic to SC10.
364. The SC welcomed the offer from the Deep-sea Fisheries Under an Ecosystem Approach (DSF) Project, FAO, to provide funding from the DSF Project to support eligible CCPs in relation to both training observers and to preparing and improving documentation to support observer programmes.
365. The SC noted that, in line with the recommendation in paragraph 51 of the WS-2024-OBS report, it has considered the requirements for observer coverage in all its fisheries as part of its discussions at SC9. The SC noted the other recommendation in paragraph 51 that it should also consider the requirement for observer coverage for exploratory fisheries once the MoP progresses this topic.
366. The SC recommended that the MoP consider mandatory and higher levels of observer coverage, noting that information on distribution and demography and potential impacts on non-target and associated or dependent species is reliant on observer information that is, in some fisheries, not available or very sparse.
367. The SC noted that the consultants recommended that 100% observer coverage be

considered.

368. The SC noted the recommendation in paragraph 52 of the WS-2024-OBS report and requested the SC Chairs and the Secretariat to present a document describing the status of progress towards establishing and operating a SIOFA observer programme and outstanding issues at SC10.
369. The SC noted that, in line with the recommendation in paragraph 53 of the WS-2024-OBS report, it has considered how the proposed data to be collected by observers will be used in fisheries assessment or other analyses relevant to SC work as part of its discussions at SC9. The SC further noted that it has a standing agenda item on data collection processes and agreed to create an additional standing sub-agenda item to review potential changes to logbook data forms.
370. The SC endorsed the recommendation in paragraph 57 of the WS-2024-OBS report on the development of an Observer Code of Conduct. The SC noted that a proposal for an Observer Code of Conduct would need to be progressed by a CCP to the MoP, and recommended that the drafts in WS2024-OBS-01 and SC-07-INFO-08 be considered in the development of such a proposal.

11.3 E-monitoring

371. The SC noted the recommendation from the consultants that some observer logbook information could be collected using electronic monitoring (EM) systems but that this would require considerable post-processing and agreement on the analysis methods and standards to be used if implemented across the range of fisheries managed by SIOFA.
372. The SC supported the development of EM processes, while noting that it is necessary to take into consideration various cost/effort trade-offs.
373. The SC did not recommend the replacement of observers with EM systems for new and exploratory fisheries.
374. The SC agreed that SC10 should include an agenda item on EM.
375. The SC welcomed Australia's offer to present a paper at SC10 on the IOTC's standards for EM systems and associated processes for EM data to be considered equivalent to observer data.
376. The SC welcomed the offer from the DSF Project, FAO, to provide support to trial development of EM systems and technologies and encouraged CCPs to communicate with the DSF Project on how to access and utilize such support.

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

377. The Data Officer presented SC-09-INFO-07-Rev1, which summarised all lost gears as reported for 2022 fishing activities under CMM 02(2023) (Data Standards). In 2022, only the demersal longline fisheries recorded loss of gears in the SIOFA Area. Most of these losses were individual hooks. However, in Subarea 7, two larger sections of longline were lost.
378. The SC requested that the Secretariat include the following additional information in next year's summary of lost gears:
 - a. the subarea where the gears from a particular fishery were lost.
 - b. the percentage of gears lost.
 - c. information from past years.
379. The SC noted that some information on lost gears is also recorded in observer logbooks and that the linking of the Observer and Catch Effort databases may facilitate a more accurate understanding of the number of gears lost.

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

- 380. No proposals for revisions to CMM 02(2023) were received.
- 381. The SC requested that the Seychelles consider whether any new or amended data recording forms would be required for dive-caught species such as sea cucumber.

Agenda item 12. SIOFA Performance Review

12.1 Recommendations

- 382. The Science Officer presented SC-09-INFO-11, which provided a summary of the recommendations proposed by the SIOFA Performance Review Panel in 2023 and adopted at MoP10, including new information that has become available since MoP10. The Science Officer highlighted the recommendations relevant to the SC and invited the SC to provide further comments as appropriate.
- 383. The SC reviewed the implementation plan adopted by MoP10 and added further comments, including cross-references to the SC workplan. The updated implementation plan is attached as **Annex P**.
- 384. 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 2023 that were adopted at MoP10 (**Annex P**).

Agenda item 13. Cooperation with external bodies

- 385. Agenda item 13 was chaired by the SC Vice-Chair.
- 386. The SC noted the preliminary report of the Monaco Exploration research cruise on the Saya de Malha Bank in 2022 (SC-09-INFO-25).
- 387. The SC thanked Monaco Exploration for submitting the preliminary report.
- 388. The SC requested the Seychelles and Mauritius to continue efforts to contact Monaco Exploration, through the JMA, on accessing the data collected by the research cruise.

13.1 FIRMS coordination and work

- 389. An update on SIOFA activities related to the FAO Fisheries and Resources Monitoring System (FIRMS) is available in SC-09-INFO-03.

13.2 FAO ABNJ DSF activities

- 390. The DSF Project presented SC-09-32-Rev1, which provided an update on the DSF Project (2022–2027), particularly opportunities for partnership with SIOFA. The DSF Project has four key components: enhancing governance; strengthening effective management of deep-sea fisheries; improving understanding and management of cross-sectoral interactions with deep-sea fisheries; and knowledge management, communication, and monitoring and evaluation. SIOFA is a DSF project partner, together with six other RFMOs, two industry groups (SIODFA and the International Coalition of Fisheries Associations (ICFA)), International Council for the Exploration of the Sea (ICES) and the National Oceanic and Atmospheric Administration (NOAA). The DSF Project plans to support 3-4 regional studies to review the existing and potential modalities for incorporating climate change effects into the work of RFMOs that have a mandate for the management for deep-sea fisheries and hopes to fund a consultancy. The DSF Project hopes to collaborate with SIOFA on climate change in a manner that would support SIOFA's work. Other DSF Project activities of particular relevance to SIOFA include assessment of data-limited stocks and monitoring of rapid change, work with FAO on stock status for the State of World Fisheries and Aquaculture (SOFIA) 2026, identification of deepwater chondrichthyans, plans to

hold a symposium on the ecosystem approach to fisheries management in 2025, a review of the implementation of the DSF Guidelines, R.V. Dr Fridtjof Nansen research cruises, an e-learning course on deep-sea fisheries management in areas beyond national jurisdictions, and support for training/capacity development.

391. The SC noted the proposal for a research cruise for the R.V. Dr Fridtjof Nansen to be conducted in June 2025. The SC noted that the research vessel could provide valuable data for SIOFA but that there was currently limited information available on its activities for SIOFA SC to consider.
392. The SC requested that the proponents of the research cruise provide a more detailed cruise plan to the MoP for consideration.
393. The SC recommended that the MoP should consider the type of fishing gear, the areas proposed to be fished, potential benthic impacts, the species proposed to be caught and the amount of catch proposed to be taken before approving the R.V. Dr Fridtjof Nansen research cruise.
394. The SC endorsed the proposal by the DSF Project for collaboration on climate change work.
395. The SC requested that the DSF Project communicate with the SIOFA Secretariat and relevant experts on progressing this work.
396. The SC requested that the DSF Project work with the SIOFA Secretariat to assess the interest level among SIOFA CCPs to engage in:
 - a. partnering in stock assessment/rapid change work with DSF Project/ICES.
 - b. working with FAO on stock status for SOFIA 2026.
 - c. planning a joint R.V. Fridtjof Nansen cruise in the SIOFA Area.
 - d. identifying opportunities for training/capacity development.

13.3 CCAMLR

397. An update on cooperation with CCAMLR is available in SC-09-INFO-03.
398. The exchange of scientific toothfish data with CCAMLR was discussed under agenda item 5.1.

Agenda item 14. Future work

14.1 Climate change

399. The DSCC presented SC-09-INFO-26, which proposed ways to integrate climate change impacts into SIOFA decisions. The DSCC encouraged the SC to act on the climate-change related issues and recommendations identified by the FAO 2023 International Workshop for Regional Fisheries Bodies and incorporate the relevant work in its workplan. These include establishing a dedicated working group or permanent agenda item on climate change, incorporating climate change considerations into stock assessment processes, requiring fisheries-specific decisions to be regularly reviewed, contributing to the development of overarching climate change policy or strategy, and undertaking research projects with a focus on climate change.
400. The Executive Secretary presented SC-09-INFO-17, which provided a summary of the FAO Workshop on Mainstreaming Climate Change into International Fisheries Governance. The Workshop was held on 17-19 October 2023 at Mahabalipuram, India. Its objectives were to take stock of good practices and lessons learnt from regional fisheries bodies (RFB) that have the most advanced experience in implementing risk-based management approaches to account for changes in ecosystem states, including climate change impacts; to provide the basis for the

development of a set of tailored solutions to implement risk-based management that considers data-poor contexts and uses the best available science, which also considers regional differences; to outline a roadmap to develop a risk management/decision framework on climate resilient management; to outline the need for a capacity-building program in this arena; and to provide an additional channel to foster exchanges of views and enhance cross-fertilisation among RFBs.

401. The SC discussed how to further progress its work related to the impacts of climate change.
402. The SC noted the need for the SC to inform the MoP of the potential implications of climate change on relevant science-based decisions and to note the work done by other RFMOs, CCAMLR, and the FAO.
403. The SC noted that there is a section on climate change and environmental variability in the SIOFA Ecosystem Summary 2024, but that this section only states that no information is currently available on the impacts of climate change or environmental variability on SIOFA fisheries.
404. The SC agreed to include a project on the assessment of SIOFA species and ecosystems for vulnerability to climate change impacts in its workplan (**Annex M**; SC-09-INFO-01-Rev1).
405. The SC welcomed the offer from Australia to provide a summary of processes and assessments where climate change considerations could be incorporated.
406. The SC recommended that the MoP:
 - a. adopts climate change as a standing item on its agenda.
 - b. identifies what advice it would like from the SC on the potential implications of climate change.
 - c. makes funding available for the climate change-related work in the SC workplan from 2025.
407. The SC welcomed the offer from the DSF Project to present additional information on climate change-related work being conducted by the DSF Project and other deep-sea RFMOs at SC10.

14.2 Progress of EU funded science projects

408. The Science Officer provided an update on the progress status of projects funded by the SIOFA EU grants, as described in SC-09-INFO-03.
409. The SC expressed its gratitude to the EU for making those funding opportunities available for enhancing the scientific work of SIOFA.

14.3 Management and coordination of SIOFA science projects

410. The Science Officer provided an update on the progress status of other SIOFA science projects, as described in SC-09-INFO-03.

14.4 Scientific Committee workplan and budget

411. SIODFA presented a proposal for the holding of a regional meeting to review fisheries related aspects of the oceanography of the Indian Ocean or the Western Indian Ocean (SC-09-INFO-23). SIODFA suggested that a review of the oceanographic factors that are important to the management of the fisheries that it is involved in could make a major contribution to effective management actions for ensuring the sustainability of these fisheries. SIODFA invited the SC to consider the potential merits of such a review and invited SIOFA to express any interest it may have in playing an initial role to investigate the feasibility of such a regional meeting.
412. The SC agreed that oceanographic factors are an important consideration in the

management of the fisheries.

413. The SC encouraged SIODFA to summarise information on the international organisations and groups working in this area and the research that they have done, and to present that information at SC10 for further discussion.
414. The Science Officer presented the draft SIOFA SC workplan for 2024-2028 (SC-09-INFO-01-Rev1).
415. The Executive Secretary presented the draft Scientific Research Budget for 2025–2027 (SC-09-INFO-02-Rev1).
416. The SC reviewed and revised the draft SIOFA SC workplan for 2024–2028 list of proposed research activities with estimated budgets (summarised in **Annex M**; SC-09-INFO-01-Rev1) and the associated scientific budget in **Annex Q**.
417. The SC requested that the SC Chair distribute a circular following the close of the meeting outlining the process for the management of the Precautionary Approach and Management (PAM) projects, including a call for a project lead and project advisory group members.

14.5 The 2025 meeting of the Scientific Committee

418. The SC reaffirmed that the new combined SC meeting format, begun in 2023, continues to work well.
419. The SC recommended to the MoP that the next SC meeting, including any focused agenda topics, be held for 8 days from 17–26 March 2025.
420. The SC recommended that the MoP note that the location of the next SC meeting was not yet agreed.

Agenda item 15. Other business

421. The SC Chair announced the 2024 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 Zhou Fang, Sabrena Lawrence, Rodney Govinden, Pavarot Noranarttragoon, Charles Heaphy, Anthony Thompson, and Alex Meyer.
422. The SC congratulated the recipients for their service and contributions to the work of the SIOFA SC.
423. SIODFA explained that it has information related to deep-sea fisheries in the Southern Indian Ocean dating back to 1999 and offered to share this information with SIOFA.
424. The SC welcomed the offer and noted that this information would be very valuable.
425. The SC encouraged SIODFA to present a paper to MoP11 outlining its proposal and providing further details on the information available.
426. The SC recommended that the MoP consider this offer and task the SC to consider how to utilise this information. The SC suggested that a first step could be to catalogue the information, including identifying any data that are confidential.

15.1 Election of the Second vice-Chair of Scientific Committee

427. The SC Chair noted that one of the SC Vice-Chair positions remains open.

15.2 SIOFA Rules of Procedure and the Scientific Committee

428. The SC noted that the Rules of Procedure were not clear for the dates for the submission of documents to the SC. Given the time between the end of the year and the SC meeting, CCPs noted that additional time was required to prepare and finalise National Reports.

429. The SC recommended that the MoP amend the Rules of Procedure to add a deadline for the submission of working papers to the SC. The new provision would become paragraph 5bis under Part V - Preparation for Meetings, Rule 10 - Preparation for Ordinary Meetings, and would read as follows:
- Proposals to be discussed at the Scientific Committee shall be submitted to the Secretariat no less than 30 days before the date fixed for the opening of the Scientific Committee. The Secretariat shall make proposals and amendments available to Official Contacts as soon as possible after receipt but no later than 25 days before the beginning of the meeting.
430. The SC recommended that the MoP amend the Rules of Procedure to add a deadline for the submission of information papers that is specific to the SC. The new provision would become paragraph 6bis under Part V - Preparation for Meetings, Rule 10 - Preparation for Ordinary Meetings, and would read as follows:
- Any other document to be tabled at the Scientific Committee shall be submitted to the Secretariat no less than 14 days before the date fixed for the opening of the meeting. The Secretariat shall make such documents available to Official Contacts as soon as possible after receipt but no later than 10 days before the start of the meeting.
431. The SC thanked the Secretariat and the Department of Fisheries of Thailand for providing and managing the meeting facilities.
432. The SC thanked the SC Chair and Vice-Chair for their constructive and effective leadership throughout the meeting.
433. The SC thanked the rapporteur for his support.
434. The SC adopted the report of its 9th meeting.
435. The SC Chair brought the meeting to a close on 27 March at 15.30 local time.

Annex A – Opening Statement by Thailand

Welcome Remarks

Excellencies,
Chairperson of the SIOFA Scientific Committee, Mr. Alistair Dunn
Executive Secretary of the SIOFA, Mr. Thierry Clot, and
The Secretariat teams
Distinguished Heads of Delegations, Delegations
All Participants, and observers
Ladies and Gentlemen,

Good morning

As the host of the 9th Annual Meeting of the SIOFA Scientific Committee (SC9), scheduled to take place from 18 to 27 March 2024, in the vibrant city of Bangkok, Thailand, I am honored to extend a heartfelt welcome to all participants joining us for this significant gathering.

Our SIOFA is an intergovernmental organization established in 2012. It functions as a collaborative framework among member States to collectively conserve and manage fisheries resources for the sustainable utilization within the area of its competence in the Indian Ocean. Currently, SIOFA comprises 10 Contracting Parties, namely Australia, China, the Cook Islands, the European Union, France on behalf of its Indian Ocean Territories, Japan, the Republic of Korea, Mauritius, the Seychelles, and Thailand.

We also have Chinese Taipei as Participating Fishing Entity, and the Union of the Comoros and the Republic of India as Cooperating Non - Contracting Parties. Therefore, this is another great time of the reunion of our SIOFA family members.

Thailand joined SIOFA since 2017 that for over the past six years, Thailand has actively worked with SIOFA colleagues in all aspects, and scientific activities is also a key role to serve the conservation and management efforts of SIOFA that we also dedicated to the 9th Annual Meeting of the SIOFA Scientific Committee aims to enhance scientific involvement among SIOFA member states. The SC9 will review and assess the status of marine species in the SIOFA area of competence, as well as identify scientific challenges and obstacles encountered during the past year.

As a member of SIOFA, Thailand reiterates its commitment to fully support SIOFA activities to facilitate knowledge exchange and scientific collaboration among us and international organizations. We believe that our support contributes to the sustainable benefits for all stakeholders involved.

On behalf of the Department of Fisheries, Thailand, I wish for the success of the SC9 meeting to achieve its objectives. Ultimately, I sincerely hope that all participants will have the opportunity to enjoy delicious Thai cuisine, explore beautiful tourist destinations, relax and stay in Thailand with happiness.

Thank you.

Annex B – Opening Statement by the SIOFA Executive Secretary

Dear Scientific Committee Chair and Vice Chair,
Distinguished members of the Scientific Committee
Dear Observers and colleagues,

First of all, I would like to thank the Department of Fisheries of Thailand for hosting the 9th annual meeting of the SIOFA Scientific Committee in the wonderful city of Bangkok. It was a very welcomed news from, Dr Pavarot Noranarttragoon, acting as HoD of Thailand for the SC during our previous meeting in Tenerife, and thanks to the central and closer location of Bangkok for most SIOFA CCPs, more attendants could come in person.

Secondly, I would like to highlight the excellent logistical arrangements made by Dr Pavarot Noranarttragoon, and his team to put this meeting together, taking care of the booking of the meeting room, the coffee breaks and lunches during our working days, as well as the visit to the very famous Royal Palace, scheduled for next Saturday.

I would also like to thank the Chair, the Vice-Chair, the Science Officer and all the CCPs who have endeavoured to take part in all the consultations requested by the Secretariat under the aegis of the SC Chair.

This involvement of the CCPs is very important for the scientific follow-up, particularly when recruiting consultants and/or evaluating their reports.

The scientific work carried out by the Secretariat has developed considerably in recent years as a result of the recruitment of the SC Chair, then of a Science Officer at the SIOFA secretariat and the granting of several funds. All this has led to significant progress in terms of assessing resources and their impact on neighbouring ecosystems.

Since SC8, the Secretariat has organised two workshops and this year 43 working documents and 29 information documents are to be presented to this meeting. Now more than ever, we need the support and investment, of each of you, based on your respective areas of expertise.

I would also like to thank the European Union, which enables the SIOFA to benefit from European grants dedicated to strengthening the scientific works of SIOFA. These funds enable us to finance consultants who provide valuable information on the scientific studies required by the Scientific Committee and validated by the MoP.

And finally, I would like to wish all delegates, and participants a very fruitful and interesting meeting, and I leave the floor to our precious Chairperson of the Scientific Committee, Mr Alistair Dunn.

Annex C – List of registered participants

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Korea	Dr	Hyejin	Song	Alternate	Distant Water Fisheries Resources Division, National	hyejinsong@korea.kr

Report of the 9th annual meeting of the SIOFA Scientific Committee (2024)

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Observers SIODFA	Mr	Charles	Heaphy	President	SIODFA	charles.heaphy@sealord.co.nz
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Observers DSCC	Mr	Duncan	Currie	Alternative HOD	Deep Sea Conservation Coalition	duncanc@globelaw.com

Report of the 9th annual meeting of the SIOFA Scientific Committee (2024)

Delegation	Title	First name	Last name	Position	Organisation	Email
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Invited experts	Dr	Viktor	Nkongo	Director	Imvelo Blue Environment Consulting	sihle@imveloblue.co.za
Invited experts	Ms	Janice	Molloy	Director	Southern Seabirds Trust (NZ)	janice@southernseabirds.org
Invited experts	Dr	Anne-Elise	Nieblas	Director	COOOL	anne.elise.nieblas@company-coool.io
Invited experts	Dr	Dominique	Cowart	Consultant	COOOL	d.cowart.coolresearch@gmail.com
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SIOFA Secretariat	Dr	Marco	Milardi	Science Officer	SIOFA Secretariat	marco.milardi@siofa.org

Annex D – Adopted SC9 agenda

AGENDA ITEM 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

AGENDA ITEM 2. ADMINISTRATIVE ARRANGEMENTS

- 2.1 Adoption of the agenda
- 2.2 Scientific committee chairs report

AGENDA ITEM 3. FISHERIES REPORTS

- 3.1 Annual national reports 2024
- 3.2 Summary of SIOFA fisheries
- 3.3 Ecosystem and fisheries summaries 2024

AGENDA ITEM 4. NEW AND EXPLORATORY FISHERIES

- 4.1 Bottom fishing footprint
- 4.2 Development of new and exploratory fisheries

AGENDA ITEM 5. DATA ACCESS AND DISSEMINATION

- 5.1 Exchange of scientific toothfish data with CCAMLR
- 5.2 Developments to the data section of the SIOFA website
- 5.3 The SIOFA standard operating procedure for data use and data requests

AGENDA ITEM 6. HARVEST STRATEGIES

- 6.1 Presentation of the report of the Joint MoP-SC Intersessional Workshop to Define Harvest Strategy Management Objectives (WS2023-HSMO)
- 6.2 Development of harvest strategies for orange roughy
- 6.3 Development of harvest strategies for toothfish
- 6.4 Other matters

AGENDA ITEM 7. STOCK ASSESSMENTS AND ADVICE

- 7.1 Orange roughy
- 7.2 Alfonsino
- 7.3 Toothfish
- 7.4 Oilfish
- 7.5 Other species

AGENDA ITEM 8. BYCATCH AND INCIDENTAL CAPTURES

- 8.1 Deepwater chondrichthyans
- 8.2 Development of a SIOFA skate tagging programme
- 8.3 IOTC bycatch
- 8.4 Seabirds, mammals, and bycatch of other species of concern

AGENDA ITEM 9. VULNERABLE MARINE ECOSYSTEMS (VME)

- 9.1 Annual report of VME encounters
- 9.2 VME data and the setting VME of encounter thresholds

- 9.3 VME mapping project (PAE2021-02)
- 9.4 Management options for preventing SAIs on VMEs
- 9.5 Options for recording of VME taxa by line or line segment
- 9.6 Revisions of the list of VME taxa

AGENDA ITEM 10. MARINE PROTECTED AREAS

- 10.1 Protocols to designate and evaluate MPAs

AGENDA ITEM 11. DATA STANDARDS

- 11.1 Annual catch and effort data submission
- 11.2 Observer harmonisation
- 11.3 E-monitoring
- 11.4 Lost gear reported under CMM 02(2023) Annex A
- 11.5 Proposals for revisions to CMM 02(2023) (Data Standards)

AGENDA ITEM 12. SIOFA PERFORMANCE REVIEW

- 12.1 Recommendations

AGENDA ITEM 13. COOPERATION WITH EXTERNAL BODIES

- 13.1 FIRMS coordination and work
- 13.2 FAO ABNJ DSF activities
- 13.3 CCAMLR

AGENDA ITEM 14. FUTURE WORK

- 14.1 Climate change
- 14.2 Progress of EU funded science projects
- 14.3 Management and coordination of SIOFA science projects
- 14.4 Scientific Committee workplan and budget
- 14.5 The 2025 meeting of the Scientific Committee

AGENDA ITEM 15. OTHER BUSINESS

- 15.1 Election of the second vice-Chair of Scientific Committee
- 15.2 SIOFA Rules of Procedure and the Scientific Committee

Annex E – List of Meeting Documents

Document code	Title	Agenda item
SC-09-ADM-01	Registration form	
SC-09-ADM-02	Template for meeting documents	
SC-09-ADM-03	Meeting Draft Provisional Agenda	2.1
SC-09-ADM-04	Meeting Revised Provisional Agenda	2.1
SC-09-ADM-05-Rev1	Meeting Provisional Schedule	1.3
SC-09-ADM-06	List of Meeting Documents	2.1.1
SC-09-ADM-07	List of registered attendants	1.2
SC-09-01	(REP) 2024 Annual National Report Australia	3.1.1
SC-09-02-Rev1	(REP) 2024 Annual National Report China	3.1.1
SC-09-03	(REP) 2024 Annual National Report Cook Islands	3.1.1
SC-09-04	(REP) 2024 Annual National Report European Union	3.1.1
SC-09-05	(REP) 2024 Annual National Report France OT	3.1.1
SC-09-06	(REP) 2024 Annual National Report Japan	3.1.1
SC-09-07	(REP) 2024 Annual National Report Republic of Korea	3.1.1
SC-09-08	(REP) 2024 Annual National Report Mauritius	3.1.1
SC-09-09	(REP) 2024 Annual National Report Seychelles	3.1.1
SC-09-10	(REP) 2024 Annual National Report Chinese Taipei	3.1.1
SC-09-11-Rev1	(REP) 2024 Annual National Report Thailand	3.1.1
SC-09-12	(REP) 2024 Annual National Report Comoros	3.1.1
SC-09-13	(REP) 2024 Annual National Report India	3.1.1
SC-09-14-Rev1	Overview of SIOFA Fisheries 2024	3.2
SC-09-15-Rev1	SIOFA Ecosystem Summary 2024	3.3
SC-09-16-Rev1	SIOFA Fisheries Summary: orange roughy (<i>Hoplostethus atlanticus</i>) 2024	3.2
SC-09-17-Rev1	Fishery Summary: alfonsino (<i>Beryx</i> spp., <i>B. splendens</i> , <i>B. decadactylus</i>) 2024	3.2
SC-09-18-Rev1	Fishery Summary: toothfish (<i>Dissostichus</i> spp., <i>D. eleginoides</i> , <i>D. mawsoni</i>) 2024	3.2
SC-09-19-Rev1	Fishery Summary: oilfish (<i>Ruvettus pretiosus</i>) and escolar (<i>Lepidocybium flavobrunneum</i>) 2024	3.2
SC-09-20-Rev1	SIOFA Fishery Summary: hapuka (<i>Polyprion</i> spp., hapuku wreckfish <i>P. oxygeneios</i> , wreckfish <i>P. americanus</i>) 2024	3.2
SC-09-21-Rev1	Fishery Summary: common mora (<i>Mora moro</i>) 2024	3.2
SC-09-22	Seabird interactions and mitigation measures in SIOFA compared with other RFMOs and outstanding ACAP advice	8.4
SC-09-23	Recent levels of catch for SIOFA species of interest	3.1.2
SC-09-24	Guidelines for the standardization of catch per unit of effort (CPUE) in SIOFA fisheries	3.1.2
SC-09-25	Review of VME encounter thresholds, and methods for their definition, in other RFMOs	9
SC-09-26	Summary of transboundary CCAMLR and SIOFA toothfish tagging data	7.4
SC-09-27	PAE2021-01 Bioregionalisation and Management of Vulnerable Marine Ecosystems (VMEs) project final report	9.3
SC-09-28	SER2022-ORY1 and BYS1 orange roughy and alfonsino stock structure projects final report	7
SC-09-29	SER2022-BYS2 bomb radiocarbon ageing of alfonsino project final report	7.2

Report of the 9th annual meeting of the SIOFA Scientific Committee (2024)

Document code	Title	Agenda item
SC-09-30	SER2022-TOP1 Genetic analysis to inform the stock structure of Patagonian toothfish (<i>Dissostichus eleginoides</i>) project final report	7.3.2
SC-09-31	Data and security audits, status in 2024	5
SC-09-32-Rev1	Deep-sea Fisheries Under an Ecosystem Approach Project (2022–2027)	13.2
SC-09-33	Convener report of the WS2024-OBS	11.2
SC-09-34	Report of the WS2023-HSMO	6.4.2
SC-09-35	Data limited fisheries biomass estimates: Trend analysis for SIOFA toothfish (Project TOT-2023-01)	7.3
SC-09-36	IOTC bycatch in SIOFA area	8.3
SC-09-37	Update on the ecological risk assessment of deepwater chondrichthyan species	8.1
SC-09-38	Use of monofilament traces to reduce shark bycatch in commercial demersal longline fisheries: a review	8.1
SC-09-39	Potential use of a hierarchical framework for the assessment and management of deepwater sharks (Project DWS-2023-01)	8.1
SC-09-40	Biological data to improve the understanding of the deep-water sharks' life history traits (Project DWS-2023-01)	8.1
SC-09-41	Preliminary results based on electronic and conventional tagging of deep-water sharks in the SIOFA Area (Project DWS-2023-01)	8.1
SC-09-42	Determination of shark live/dead ratio in individuals observed on-board (Project DWS-2023-01)	8.1
SC-09-43	Inputs of the WS2024-OBS for further consideration by the Scientific Committee	11.2
SC-09-INFO-01-Rev1	SIOFA Scientific Committee Workplan 2024-2028	14.4
SC-09-INFO-02-Rev1	Scientific Research Budget	14.4
SC-09-INFO-03	SIOFA Secretariat support to the SC and MoP in 2023-2024	14
SC-09-INFO-04	SIOFA Data submission summary (2022 data submitted in 2023)	11.1
SC-09-INFO-05	Data exchanges with other organizations	5.1
SC-09-INFO-06	Summary of documents and data release requests	5.3
SC-09-INFO-07	Report on lost gear under SIOFA CMM 02 (from 2022 fishing activities)	11.4
SC-09-INFO-08	Report on observations of whales and interactions with fishing gear (from 2022 fishing activities)	8.4.1
SC-09-INFO-09	Report on notifications of VME encounters (2023 fishing activities)	9.1
SC-09-INFO-10-Rev1	Guidelines for the submission of Annual National Reports to the SIOFA Scientific Committee	3.1.3
SC-09-INFO-11	SIOFA Scientific Committee tasks from the SIOFA Performance Review 2023	12
SC-09-INFO-12-Rev1	SIOFA definitions of primary and secondary species	3.1.2
SC-09-INFO-13	SC-07-INFO-08 Development of a SIOFA Observer code of conduct, including requirements for independence, managing conflicts of interest, and health and safety considerations for Scientific Observers	11.2
SC-09-INFO-14	WS2023-HSPA-01 Summary of the Scientific Committee and the Meeting of Parties reports on the development of harvest strategies	6
SC-09-INFO-15	WS2023-HSPA-02 An introduction to Harvest Strategies	6
SC-09-INFO-16	Policy brief on "Other effective area-based conservation measures" (OECMs)	15
SC-09-INFO-17	FAO Workshop on Mainstreaming Climate Change into International Fisheries Governance	14.1
SC-09-INFO-18	Stock structure of Patagonian toothfish (<i>Dissostichus eleginoides</i>) (SIOFA SER2022-TOP2 Draft report)	7.3
SC-09-INFO-19	Protocols to designate and evaluate MPAs in the SIOFA Area (PAE2022-MPA1 Draft Report)	10

Report of the 9th annual meeting of the SIOFA Scientific Committee (2024)

Document code	Title	Agenda item
SC-09-INFO-20	Establishment of a framework for scientific observation of SIOFA fisheries (SEC2022-OBS1 Draft Report)	11.2
SC-09-INFO-21	Identification and Trends in Deepwater Sharks (Project DWS-2023-02)	8.1
SC-09-INFO-22	Can acoustic methods be used to assess the abundance of alfonsino in the SIOFA area?	7.2
SC-09-INFO-23	A Regional Meeting to Review Fisheries Related Aspects of the Oceanography of the (Western?) Indian Ocean - A Concept Note	14.1
SC-09-INFO-24	Update on ACAP Activities and Advice on Reducing the Bycatch of Albatrosses and Petrels in SIOFA Fisheries	13
SC-09-INFO-25	Monaco Explorations Indian Ocean Expedition 2022 – preliminary report	13
SC-09-INFO-26	Integrating climate change impacts into SIOFA decisions	14.1
SC-09-INFO-27	Implementing Area Protection in SIOFA	10
SC-09-INFO-28	Further action needed to protect VMEs, including all Seamounts	9
SC-09-INFO-29	A closer look: the SIOFA alfonsino fishery and its management	7.2

Annex F – Statement by Mauritius

9th Scientific Committee of SIOFA 18-27 March 2024

Statement from the Republic of Mauritius

Mauritius would like to thank SIOFA for the invitation to the 9th Session of the Scientific Committee to be held in Bangkok, Thailand, from 18 to 27 March 2024. However, due to some constraints our participation in person could not be envisaged. Nevertheless, we will attend virtually (Listen-only mode).

Mauritius has already submitted its annual national report for 2023 and has implemented the necessary CMMs for the sustainable exploitation of the resources falling under the purview of SIOFA.

With regards to the SC9, we would like to make some statements listed below:

1. The Mauritian handline fishery takes place in the banks situated in the northern part of the Mauritian EEZ and on the Saya de Malha Bank within the SIOFA Sub Area 8. Fishing is carried out using handline and the main species caught are: *Lethrinus* spp. (<70m), *Etelis* spp, *Polysteganus baissaci* (150-300m). The CPUE is calculated in terms of catch per fishermanday, which have been used since the 1990's and published in annual reports. It is also to be noted that in the handline fishery, the quantity of by-catch caught is almost negligible.
2. In the SC8 Meeting, as per agenda item 9.3, it was agreed to discuss Electronic-Monitoring for the establishment of a framework for scientific observation for SIOFA fisheries. The Workshop on Harmonisation of Scientific Observation (WS2024-OBS) also noted that e-monitoring could be used to complement observer data collection (Agenda Item 3.3, paragraph 45).
As a CCP, Mauritius is aware that scientific observation programme is vital for obtaining good quality data. However, as an alternative and in case no observer is available due to unforeseen circumstances, it is proposed to implement an e-monitoring programme to complement the observer programme. The SC9 may recommend for the development of a framework for e-monitoring and further discuss on this issue for its establishment.

Mauritius conveys its deep gratitude and wishes all SC9 participants to have a fruitful meeting. Furthermore, Mauritius also hopes that the work of the Scientific Committee will provide a good insight for the conservation and sustainable use of the SIOFA fishery resources.

Annex G – Framework and forms for exploratory fisheries

Annex G.1

Framework for exploratory fisheries

1. Application and interpretation

The framework governing the management of exploratory fisheries in the SIOFA Area applies to all fishing activity in exploratory fisheries, in the SIOFA Area.

“Exploratory fishery” means:

- a) any bottom fishing activities, as defined in paragraph 3.b. of CMM 01 (2023), conducted outside the SIOFA bottom fishing footprint¹, as defined in paragraph 3.c. of CMM 01 (2023).
- b) any bottom fishing activities, as defined in paragraph 3.b. of CMM 01 (2023), conducted within the SIOFA bottom fishing footprint with a particular gear type or technique not used before in that fishery in that area (i.e., not listed in the table of recognised fisheries in the SIOFA Area below).
- c) any other fishing gear type targeting fishery resources in the Area which are not listed in the table of recognised fisheries in the SIOFA Area below.
- d) An exploratory fishery is one that has not been subject to fishing² in the previous ten years; or
- e) where fishing has been undertaken in the previous nine years and a decision from MoP has not yet been taken to either close or manage or recognise the fishery.

2. Requirements for Exploratory Fisheries

The details for the framework governing the management of exploratory fisheries in the SIOFA Convention Area should:

- a) ensure new and exploratory fishery resources are developed on a precautionary and gradual basis, based on the collection of sufficient information to support the effective management and sustainable use of new and exploratory fisheries.
- b) minimize the potential harmful impact that exploratory fisheries may have on target stocks and the marine environment, including a Risk Assessment for endangered, threatened and protected (ETP), bycatch and VMEs.
- c) Require a Fisheries Operations Plan (FOP) that includes a Data Collection and Analysis Plan (DCAP).
- d) Requires one or more independent scientific observers to be present on all trips and observe all sets/hauls (or at least part or each haul) to ensure that data are collected in accordance with the Data Collection and Analysis Plan.

¹ CMM-01 (2023) article 10 which constrains CCPs fishing activities on the spatial distribution of its bottom fishing effort.

² Article 1 (g) of the Southern Indian Ocean Fisheries Agreement (SIOFA).

3. Fisheries Operation Plan (FOP)

The FOP shall contain the following information, to the extent it is available:

1. a description of the exploratory fishery, including area, target species, proposed methods of fishing, proposed maximum catch/effort limits and any distribution of that catch limit among areas and species; the FOP should include explicit target and limit and/or threshold reference points and a mechanism to adjust any proposed catch limit; specification and full description of the types of fishing gear to be used, including any modifications made to gear intended to mitigate the effects of the proposed fishing on non-target and associated or dependent species or the marine ecosystem in which the fishery occurs;
2. the time period the FOP covers (up to a maximum period of three years) but this could be rolled over a maximum of two times pending the evaluation and approval by the SC at each roll over; Once a FOP expires after 9 years, if the SC³ has not provided advice to the MoP as to how to progress the fishery to a fully commercial operation (thereby being recognised as an established fishery) or the appropriate management arrangements, a new FOP should be submitted to the SC for evaluation should the proponent wish to continue.
3. any biological information on the target species from accepted research such as distribution, abundance, demographic data including genetics, longevity and maturity and information on stock identity.
4. details of non-target and associated or dependent species and the marine ecosystem in which the fishery occurs, the extent to which these would be likely to be affected by the proposed fishing activity and any measures that will be taken to mitigate these effects.
5. the anticipated cumulative impact of all fishing activity in the area of the exploratory fishery if applicable.
6. information from other fisheries in the region or similar fisheries elsewhere that may assist in the evaluation of the relevant exploratory fishery's potential yield, to the extent the CCP is able to provide this information.
7. if the proposed fishing activity is bottom fishing (Para 3b), as defined in CMM 01(2023) (Bottom Fishing), the assessment of the impact of their flagged vessels' bottom fishing activities, prepared pursuant to the SIOFA Bottom Fishing Impact Assessment Standard (SC2 Report, Annex I).
8. where the target species is also managed by an adjacent Regional Fisheries Management Organisation or similar organisation, a description of that neighbouring fishery sufficient to allow the Scientific Committee to formulate its advice in accordance with the Scientific Committee recommendations and advice to the MoP on each Fisheries Operation Plan.

³ SIOFA should continue to classify a fishery as exploratory until sufficient information is available to:

- i. evaluate the distribution, abundance and demography of the target and primary species, leading to an estimate of the fishery's potential yield;
- ii. review the fishery's potential impacts on secondary species, as well as on vulnerable marine ecosystems and ETP species;

Recognised fisheries in the SIOFA Area

Target species/fisheries	Fishing gear	Participants	Area
Patagonian toothfish	Set longlines, Traps	Australia, EU (Spain), France (Overseas Territories), Japan, Korea	Designated fishing footprints of Australia, the EU (Spain), Japan France overseas territory. SIOFA Subareas 3b, 7
Orange roughy	Bottom trawl	Australia, Cook Islands, China (2000-02), Mauritius	Designated fishing footprint of Australia, Cook Islands, Japan. Underwater topographic features in SIOFA Subareas 1, 2, 3a, and 3b.
Alfonsino	Midwater trawl	Australia, Cook Islands, Japan, Korea	Designated fishing footprint of Australia, Cook Islands and Japan. Underwater topographic features in SIOFA Subareas 1, 2, 3a and 3b.
Brushtooth lizardfish and scads	Trawl (nei), Single boat otter board trawl	Thailand	Designated fishing footprint of Thailand.)
Shallow-water (<200m), Carangoides spp., snappers, emperors and groupers	Set longline, Hook and line (handlines) Bottom trawl, Traps	EU (France), Mauritius, Thailand, Comoros	Designated fishing footprint of Thailand. SIOFA Subarea 8 (mainly Saya de Malha Bank)
Deeper water snappers, lutjanids, hapuka	Set longline, Dropline	Australia , China EU (Spain)	Designated fishing footprints of the EU (Spain), AUS SIOFA Subareas 2, 3a, 3b and 4.
Oilfish	Set longline, Dropline	Chinese Taipei Seychelles	South-west Indian Ocean

4. Data Collection and Analysis Plan (DCAP)

1. The Data Collection and Analysis Plan (DCAP) ensure that the required information is available to assess and sustainably manage fish stocks. Therefore, a DCAP beyond what is requested in SIOFA CMM 02(2022) (Data Standards), should identify the data needed to enable an assessment of the stock, the feasibility of establishing a fishery and the impact of fishing activity on non-target, associated or dependent species and the marine ecosystem in which the fishery occurs. The Scientific Committee shall receive an update of operations from the preceding year and review and update the DCAP for each exploratory fishery annually as appropriate.
2. The DCAP should provide data that will enable the SC to determine the stock status relative to target (TRP), limit (LRP) and/or threshold reference points (ThRP), including exploitation levels. Noting that this may take some time and stock status relative to the reference points may only be elucidated once the stock shows a response to the fishing effort. The DCAP, when possible, could include fisheries independent surveys to contribute to the assessment of the target and primary species.
3. The DCAP shall require, as appropriate:
 - i. A description of the catch, effort and related biological, ecological and environmental data required to undertake the assessment described in paragraph e), and the date(s) by which the data must be provided to the Secretariat;
 - ii. A plan for directing fishing effort to allow for the acquisition of relevant data to evaluate the fishery potential and the ecological relationships among harvested, dependent and related populations and the likelihood of adverse impacts;
 - iii. 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, dependent and related populations and the likelihood of adverse impacts; and
 - iv. an evaluation of the time scales involved in determining the responses of harvested, dependent and related populations to fishing activities.

5. Scientific Committee assessment of proposed exploratory fisheries

1. At its ordinary meeting, the Scientific Committee shall consider any FOPs submitted and any other relevant information.
2. The Scientific Committee shall review the FOP, including the DCAP, and the data and reports from relevant ongoing or completed new and exploratory fisheries, and provide advice and recommendations to the Meeting of the Parties on the following, as appropriate:
 - a. Management strategies or plans for fishery resources;
 - b. Reference points, including precautionary reference points;
 - c. An appropriate precautionary catch limit;
 - d. the cumulative impacts of all fishing activities in the area of the proposed fishery;
 - e. the impact of the proposed fishing on the marine ecosystem;
 - f. the sufficiency of information available to inform the level of precaution required and the degree of certainty with which the Scientific Committee's advice is provided;
 - g. the degree to which the approach outlined in the FOP is likely to ensure the proposed fishery is developed consistently with its nature as a new and exploratory fishery, and consistently with the objectives of the Agreement; and

- h. in respect of a FOP that proposes any bottom fishing activity, advice and recommendations in accordance with the requirements of the SIOFA BFIAS.

6. Compliance Committee assessment of proposed exploratory fisheries

1. At its ordinary meeting, the Compliance Committee shall consider any FOPs submitted and the advice of the SC, as well as an associated draft CMM in respect of the proposed fishery and provide advice and recommendations to the Meeting of the Parties on appropriate management arrangements, including the requirements of CMM 01(2023) (Interim Management of Bottom Fishing) and CMM 15(2023) (Management of Demersal Stocks), where applicable.

7. MoP assessment of proposed exploratory fisheries

1. At its ordinary meeting, the Meeting of the Parties shall consider any FOPs submitted, any advice or recommendations provided by the SC and Compliance Committee, any requirements under CMM 01(2023) and CMM 15(2023) in respect of the proposed fishing activity, and any draft CMM proposed in respect of the fishery.
2. On the basis of this consideration, the Meeting of the Parties shall take a decision as to whether to approve the proposed new and exploratory fishery in accordance with the FOP and designate a time period for operation, up to a maximum period of three years. If the Meeting of the Parties approves the proposed new and exploratory fishery, it shall adopt a CMM in respect of the fishery which shall include objectives, reference points, a precautionary catch limit and any other management measures the Meeting of the Parties deems appropriate.
3. The Meeting of the Parties may amend a FOP, as necessary, prior to approving the new and exploratory fishery.

8. Data Collection and Analysis Plans (DCAP)

1. A FOP shall be accompanied by / include a DCAP. The DCAP shall identify and describe the data needed and any operational research actions necessary to obtain data from the exploratory fishery, any associated analyses to enable an assessment of the stock, the feasibility of establishing a fishery and the impact of fishing activity on non-target, associated or dependent species and the marine ecosystem in which the fishery occurs. The Scientific Committee shall review and update the DCAP for each exploratory fishery annually.
2. The DCAP shall require:
 - a) a description of the catch, effort and related biological, ecological and environmental data that will be collected;
 - b) the dates by which the data must be provided to the MoP;
 - c) a plan 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;
 - d) a plan for the acquisition and analysis 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; and

- e) an evaluation of the time scales involved in determining the responses of harvested, dependent and related populations to fishing activities.
- f) Details on the analyses (and when they will occur) that will be used to evaluate population trends, key biological parameters, and assess sustainability and the fishery impacts.

Annex G.2

Template for a SIOFA Fisheries Operation Plan

SIOFA Fisheries Operation Plan TEMPLATE

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.

Complete the table below:

CCP	
Area	
Target Species	
Proposed Methods of Fishing	
Proposed Maximum Catch / Effort Limit	
Expected Period of Operation	
Submission date	

1. Introduction

An overarching description of the purpose of the exploratory fishery, including area, target species, proposed methods of fishing, proposed maximum catch limits and any apportionment of that catch limit among areas or species.

2. Operator Details, Proposed Activities in the Management Areas and Target Species

2.1 Authorized flagged vessel

Number of vessels, flag, management authority. Vessel ownership, captain details.

2.2 Scientific Personnel

Description of the personnel involved in data analysis and brief summary of their experience and abilities. Information on the scientific observers and observer providers.

2.3 Official Flag-State Contact:

Official contacts for management, science, scientific observers and data.

2.4 Licensing

Details on the CCPs legal requirements for licencing and the vessel licence details along with permitted requirements under any SIOFA CMM.

2.5 Areas of Interest

Description of the area of operation, including the area boundaries, map(s) and depth of gear.

2.6 Target Species

The primary target species scientific name, common name, information on what is known about the biology and distribution of the species.

2.7 Non-target associated and dependent species

Anticipated bycatch species details of the intended fate of this catch (e.g. retained or discarded). Details of any CCPs rules for retention or handling practices required and how these are enforced e.g. code of practice or legal requirements.

3. Methods

3.1 The Environment

Description of the environment that the fishery will take place in such as coral reefs, seagrass beds, shallow flats, seamounts, pelagic waters. Known bathymetry and information on broad scale oceanography if known for that area.

3.2 Operational details

Where, when and how will the operation occur. What are the areas of interest and how many trips per year are intended.

3.3 Exploratory Fishing Gear Used

Details of the gear. This should be as detailed as possible and include images of the gear and gear setup in the water.

4. Landing

How, where and how often will the product(s) be discharged from the vessel. Where will any processing of product occur and what are the intended markets.

5. Management Reference Points and Biomass Calculations and catch effort limits

Details on the target, limit and/or threshold reference points, why these were chosen and how the stock will be assessed against them. There should be a description and details on the total allowable catch or effort. How this was chosen and how it will be split between areas.

6. Planned Trips in the Management Area(s)

How many trips are planned in each year and in each management area. Details of the number of fishing event per trip. If this FOP is a revision of a previous on how and why it has changed from the previous operational plans.

7. Monitoring of Vessel and Fishing activities

7.1 Vessel Monitoring and Control

How will the vessel be monitored, who will it report to and how often. Any entry exit requirements notification for SIOFA or bordering EEZs/ RFMOs that the vessel will be reporting to.

7.2 Observer coverage

What level of observer coverage is required? What will the observers be expected to monitor and sample. How will they monitor catch, bycatch, ETP species interactions and VME encounters.

8. Data Collection and Analysis plan

Detail of the data sheets/logbooks proposed, data submission to SIOFA, and descriptions of the sampling methodology proposed. Include vessel activity, set and haul logs, biological data collection and storage, ETP species (catch and sightings) and VME data collections. Include details on any tagging or planned genetic analyses.

Describe the proposed analyses and intended outcomes and proposed SC meeting for annual SC updates (meta data of what was observed and how much data were collected) and detailed report back (maximum 3-yearly prior to any rollover).

9. Vulnerable Marine Ecosystem Indicators (if applicable)

CCPs obligations around the collection and handling of VME material. Protocols regarding what to do if VMEs are encountered. Any other details of how VMEs will be monitored.

10. Risk assessment

10.1 Teleost/cephalopod/crustacean bycatch

Which species are likely to be caught on the gear. Which species are likely to be retained and discarded. Describe the likely nature of any interactions, and potential condition on these species on landing.

The following table should be completed cells coloured High (red), Medium (Yellow), Low (Green), unknown (purple). Example below. Add and remove table rows as applicable.

CCP-X Exploratory Fishery for ZZ Risk Summary Table – Teleost/cephalopod/crustacean bycatch

Species	Spatial overlap	Catchability	Risk of mortality
Pelagic teleosts eg sp1, sp2	High	High	Low if not retained
Benthic teleosts eg sp3	High	Medium	Species dependant low to high
Squid	Medium	High	Low
Mitigation			
Describe any mitigation or codes of practice or binding rules			
Risk if released after mitigation			
Pelagic teleosts- low			
Suprabenthic teleosts- low			
Squid- low			

10.2 Elasmobranch bycatch

What species are likely to be caught on the gear. Which species are likely to be retained and discarded. Describe the likely nature of any interactions.

The following table should be completed cells coloured High (red), Medium (Yellow), Low (Green), unknown (purple). Example below. Add and remove table rows as applicable.

CCP-X Exploratory Fishery for ZZ Risk Summary Table – Elasmobranch bycatch

Species	Spatial overlap	Catchability	Risk of mortality
Pelagic sharks eg sp1, sp2	High	High	Low if not retained
Benthic sharks eg sp3	High	Medium	Species dependant low to high
Species z	Medium	High	Low
Mitigation			
Describe any mitigation or codes of practice or binding rules			
Risk if released after mitigation			
Pelagic sharks- low			
Benthic sharks- low			
Species Z- low			

10.3 Seabirds

What species are likely to be caught on the gear. Which species are likely to be seen around the vessel(s). Describe the likely nature of any interactions.

The following table should be completed cells coloured High (red), Medium (Yellow), Low (Green), unknown (purple). Example below. Add and remove table rows as applicable.

CCP-X Exploratory Fishery for ZZ Risk Summary Table – Seabird bycatch

Species	Spatial overlap	Catchability	Risk of mortality
Albatross sp x	Medium	Low	Low
Cormorant sp y	Low	Low	Low
Penguins sp z	Low	Low	Low
Petrels, prions and shearwaters	Medium-high	Low	Medium-Low
Mitigation			
Describe any mitigation or codes of practice or binding rules			
Risk after mitigation			
Albatross sp x- low			
Cormorants sp y- low			
Penguins sp z- low			
Petrels, prions and shearwaters- low			

10.4 Marine mammals and turtles

What species are likely to be caught on the gear. Which species are likely to be seen around the vessel(s). Describe the likely nature of any interactions.

The following table should be completed cells coloured High (red), Medium (Yellow), Low (Green), unknown (purple). Example below. Add and remove table rows as applicable.

CCP-X Exploratory Fishery for ZZ Risk Summary Table – Marine mammals and turtle bycatch

Species	Spatial overlap	Catchability	Risk of mortality
Whales	High	Low	Low
Dolphins	High	Low	Low
Seals, sealions and elephant seals	Medium	Low	Low
Turtles	Medium	Low	Low
Mitigation			
Describe any mitigation or codes of practice or binding rules			
Risk after mitigation			
Whales- Low			
Dolphins- Low			
Seals, sealions and elephant seals- Low			
Turtles- Low			

10.5 VME impacts

What species are likely to be caught or damaged by the gear. Describe the likely nature of any impacts.

The following table should be completed cells coloured High (red), Medium (Yellow), Low (Green), unknown (purple). Example below. Add and remove table rows as applicable.

CCP-X Exploratory Fishery for ZZ Risk Summary Table – VME interactions

Species	Spatial overlap	Catchability	Risk of mortality
VME indicator taxa spx	Unknown	Low but damage under bottom contact high	Medium
Mitigation			
Describe any mitigation or codes of practice or binding rules			
Risk after mitigation			
VME indicator species- Low			

11. References

Appendix A- Vessel Details

Appendix B- Observer Tasks and Sampling Instructions

Annex G.3

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	
Area	
Target Species	
Proposed Methods of Fishing	
Proposed Maximum Catch / Effort Limit	
Expected Operation Period	
Submission date	

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.

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.		
b) The FOP includes explicit target, limit and/or threshold reference points.		

c) Method for evaluating the stock trends against the reference points is clearly stated.		
d) An appropriate precautionary catch and/or effort limit is included.		
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.		
f) The FOP includes an assessment of the cumulative impacts of all fishing activities in the area of the exploratory fishery.		
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.		
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.		
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.		
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) ⁴ .		

⁴ 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 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.		
b) The dates by which the data must be provided to the MoP are included.		
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.		
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.		
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 assessments ⁵ (that is when will		

⁵ 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.

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).		

Scientific Committee recommendations (SC to complete)

The SC discussed the [insert CCP] 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 (*to be added if necessary*):

-
-

Or:

The SC discussed the [insert CCP] Fisheries Operational Plan and Data Collection plan and **recommended** that a small working group [led by xxx and composed of xxx] meet post SC and to provide additional advice on the proposal, noting that the work is likely to extend intersessionally and would be expected to result in a revised proposal being provided to the next meeting of the Scientific Committee. Aspects of the proposal which are currently deficient include

-
-

Or:

The SC discussed the [insert CCP] Fisheries Operational Plan and Data Collection and Analysis Plan and **agreed** that the proposal was **lacking critical information** in several important areas and was not consistent with the SIOFA exploratory fisheries objectives. The SC noted that the Fisheries Operational Plan in its current form would require substantive modification to ensure that sufficient information would be available to enable the SC to evaluate the long-term potential and impacts, of the proposed exploratory fishery, and to ensure that the fishery resources would be developed on a precautionary and gradual basis a required by the CMM.

Annex H – Potential Management Objectives and Performance Indicators for the assessed management units of orange roughy

Table summarising potential Management Objectives by Objective Type, and Performance Indicators for the assessed management units of orange roughy. Please note that these Management Objectives and Performance Indicators may be further revised during the harvest strategy development process.

No.	Objective Type	Potential Management Objective	Performance Indicators
1	Stock status	Maintain the stock at, or fluctuating around (i.e., as likely as not) 40% B_0 ¹	The stock is above 40% B_0 with a 50% probability
2	Risk/Safety	Ensure that it is very likely that the stock is above the limit reference point (LRP)	The stock is above 20% B_0 with a 90% probability
3	Economic, Yield	Maintain catch and effort at a given level consistent with Objectives 1 and 2	
4	Economic, Catch rate	Maintain catch rates at a given rate that is representative of a period of fishery stability ²	Catch rates averaged over three years are about as likely as not to be around the level of that in the chosen representative period
5	Economic, Stability	Minimise the variability of the catch/effort limits from year to year that should be within a specific range	Define a reasonable level (%) of change that the model will allow between years in the harvest-control-rule-generated catch/effort limits ³
6	Social goals	<ul style="list-style-type: none"> • Maintain/create employment opportunities and contribute to food security • Ensure safe and fair employment practices on vessels operating in this fishery 	
7	Ecosystem goals	Maintain a healthy ecosystem	<ul style="list-style-type: none"> • Avoid significant adverse impacts on Vulnerable Marine Ecosystems • Minimise the impact on species of special interest, and Endangered, Threatened, or Protected species • Minimise the impact on any deepwater shark species listed in Annex 1 of CMM 12(2023) • Minimise the impact on seabirds (CMM 13(2022))

¹ Note that future work on MSE will evaluate alternative choices of the TRP and probability, for example 60% probability of being above 40% B_0

² Currently defined as 2015-2020 by SC7, but to be discussed and further defined as a part of the harvest strategy development process

³ To be further developed as part of the harvest strategy development process

Annex I – Potential Management Objectives and Performance Indicators for defined toothfish management areas

Table summarising potential Management Objectives by Objective Type, and Performance Indicators for defined toothfish management areas. Please note that these Management Objectives and Performance Indicators may be further revised during the harvest strategy development process.

No.	Objective Type	Potential Management Objective	Performance Indicators
1	Stock status	Maintain the stock at, or fluctuating around (i.e., as likely as not) 50% B_0 ¹	The stock is above 50% B_0 with a 50% probability or a suitable proxy of B_0 has a 50% probability of being above the target value
2	Risk/Safety	Ensure that it is very likely that the stock is above the limit reference point (LRP)	The stock is above 20% B_0 with a 90% probability
3	Economic, Yield	Maximise catch at a level consistent with Objectives 1 and 2, in accordance with the proportion of the stock in the SIOFA Area	
4	Economic, Catch rate	Maintain CPUE at a given rate/level that is representative of a period of fishery stability ²	CPUE levels are about as likely as not to be around the level of that in the chosen representative CPUE
5	Economic, Stability	Minimise the variability of the catch limits from year to year that should be within a specific range	Define a reasonable level (%) of annual change that the model would allow between years in the harvest-control-rule-generated catch limits ³
6	Social goals	<ul style="list-style-type: none"> • Maintain/create employment opportunities and contribute to food production • Ensure safe and fair employment practices on vessels operating in these fisheries 	
7	Ecosystem goals	Maintain a healthy ecosystem	<ul style="list-style-type: none"> • Avoid significant adverse impacts on Vulnerable Marine Ecosystems • Minimise the impact on species of special interest, and Endangered, Threatened, or Protected species • Minimise the impact on any deepwater shark species listed in Annex 1 of CMM 12(2023) • Minimise the impact on seabirds (CMM 13(2022))

¹ Note that future work on MSE will evaluate alternative choices of the TRP and probability, for example 60% probability of being above 50% B_0

² Different periods might be defined for the different toothfish SIOFA Management Areas, and should be further considered as a part of the harvest strategy development process

³ To be further developed as part of the harvest strategy development process

Annex J – SIOFA SC Acronyms and Definitions

SIOFA SC Acronyms

BFIA: bottom fishing impact assessment

BFIAS: bottom fishing impact assessment standard

BPA: benthic protected area

DCAP: Data Collection Analysis Plan

ETP: endangered, threatened or protected

FOP: Fisheries Operation Plan

PAF: Precautionary Approach Framework

PAM: Precautionary Approach and Management

SIOFA SC Definitions

Definitions of quantitative terms for describing probabilities

Probability Description	
> 99 %	Virtually Certain
> 90 %	Very Likely
> 60 %	Likely
40–60 %	About as Likely as Not
< 40 %	Unlikely
< 10 %	Very Unlikely
< 1 %	Exceptionally Unlikely

ANNEX K: Harvest strategies and timeline for the implementation of pre-assessments, assessments, management objectives and implementation

(Additional columns have been added to the timeline, originally developed by the Harvest Strategy Pre-Assessment Workshop, to record the implementation status of each step for orange roughy and Patagonian toothfish.)

Steps	SC			MoP		
Steps		ORY	TOP		ORY	TOP
Step 1 Define management objectives				1. Specify management objectives: <ul style="list-style-type: none"> ➤ biological (including ecosystem considerations) e.g., ensuring long-term sustainability and productivity; recovering heavily depleted stocks ➤ socio-economic e.g., maintaining reasonable stability in catches for the industry 	<input type="checkbox"/>	<input type="checkbox"/>
	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})	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
				3. Select reference points	<input type="checkbox"/>	<input type="checkbox"/>
	4. Characterise the sources and values of uncertainties associated with the estimation of reference points (target and limit)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
				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.	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>			
				2. Implement data collection and monitoring programme to deliver consistent, high-quality data into the future.	<input type="checkbox"/>	<input type="checkbox"/>
	3. Determine how frequently to monitor (survey and/or assessments)	<input type="checkbox"/>	<input type="checkbox"/>			
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
				2. Select HCR	<input type="checkbox"/>	<input type="checkbox"/>

Steps	SC			MoP		
Steps		ORY	TOP		ORY	TOP
	3. Conditions for Re-Evaluating Reference Points and HCR	<input type="checkbox"/>	<input type="checkbox"/>			
Step 4 Test HCR with MSE	1. Test HCR and compare expected performance of harvest strategies	<input type="checkbox"/>	<input type="checkbox"/>			
				2. Adopt appropriate harvest strategy	<input type="checkbox"/>	<input type="checkbox"/>
Step 5 Implement Harvest Strategy				1. Implement management changes based on HCR	<input type="checkbox"/>	<input type="checkbox"/>
	2. Monitor (survey and/or assessment) and assess stock(s)	<input type="checkbox"/>	<input type="checkbox"/>			
	3. Determine stock status relative to reference points	<input type="checkbox"/>	<input type="checkbox"/>			
				4. Determine if Harvest Strategy delivers the objectives	<input type="checkbox"/>	<input type="checkbox"/>
Step 6 Improve assessment and harvest strategy	1. Review reference points and HCR if needed	<input type="checkbox"/>	<input type="checkbox"/>			
	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.	<input type="checkbox"/>	<input type="checkbox"/>			

Agenda L – Draft agenda for the 2nd Joint MoP/SC Workshop on the Development of Harvest Strategies

1. Opening
 - 1.1. Welcome from the SC and MoP Chairs
 - 1.2. Introduction of meeting participants
2. Administrative arrangements
 - 2.1. Adoption of agenda
 - 2.1.1. Confirmation of meeting documents
 - 2.1.2. Report arrangements
3. Introduction to harvest strategies
 - 3.1. What are harvest strategies?
 - 3.2. SIOFA progress on harvest strategies (WSHSPA-2023-01)
 - 3.3. SC advice on harvest strategy development
 - 3.4. Potential harvest control rules
4. Management input
 - 4.1. Management objectives and performance indicators
 - 4.2. Priority species
5. Future Work Plan
 - 5.1. Development of operating models and management strategy evaluation
 - 5.2. Draft workplan and indicative budget
6. Other Business
7. Summary of advice to MoP

Annex M – Summary of the SIOFA SC Workplan 2024-2028

The full workplan is detailed in SC-09-INFO-01 Rev1

Recurring (annual) activities

A number of annually recurring activities are planned for each year. These include requests from the MoP and Scientific Committee for papers to be submitted to the Scientific Committee or MoP annual meetings. These are listed in Table 1.

Table 1: Recurring (annual) activities

Summary Title	Lead	Provider	Notes
Proposed 3-5 yr. Scientific Committee budget	SC Chair	SC Chairs committee	See paper SC-09-INFO-02
Review of VME indicator taxa list	SC	SC Delegations	
Annual report of VME encounters	Data Officer	Secretariat	Secretariat will report if any VME encounters have been submitted by CCPs
Annual review of VME encounters	SC	SC	
Summary of SIOFA data	Data Officer	Secretariat	Secretariat will summarise the available data at SIOFA, including a scheme of the linkages in the database
Update fisheries overview	Science Officer	Secretariat	
Update ecosystem summary	Science Officer	Secretariat	
Update fisheries summaries	Science Officer	Secretariat	Note different timelines for each species as indicated in respective reports: ORY, ALF, TOT, HAU, OIL/LEC, CYO, RIB, TAK
Toothfish trend analysis for the purpose of setting catch limits	Science Officer	Secretariat	Secretariat to provide catch estimates to CCPs based on the previous year data

SIOFA SC requests to CCPs and the Secretariat 2024-2025

SIOFA SC9 requested CCPs and the Secretariat to perform the tasks in *Table 2*, related to the production of papers to be presented to the next annual meeting of the SC, noting that workloads may result in some of these tasks not being completed by that time.

Table 2: SC requests to CCPs and the Secretariat for the 2024-2025 period.

Lead	Summary Title
Secretariat - Data Officer	Review of the data request/release process
Secretariat - Data Officer	The SC requested the Secretariat to present a paper to SC10 describing the database structure associated with the IOTC data and if and how these data could be accessed by consultants and CCPs through the SIOFA system
Secretariat - Science Officer + SC Chairs	Status of progress towards establishing and operating a SIOFA observer programme
CCPs - Australia	IOTC standards for EM systems and associated processes for EM data to be considered equivalent to observer data
CCPs - Australia	Shark ERA with updated distribution maps
CCPs - Australia	Skate tagging protocol
CCPs - China	Data submission forms for squid jigging vessel logbooks and observer logbooks
CCPs – EU/France OT	Evaluation of the toothfish monitoring program based on tagging
CCPs – Chinese Taipei	CPUE standardisation for its oilfish fishery and preliminary biological parameters for oilfish

SC focus topics planned for future SC meetings

Focus topics are special agenda items where the SC invests some extra time and might invite experts to provide additional information.

For 2025 (SC10), the SIOFA SC identified the following focus topics:

- Focus session on Scientific Observers
- Focus session on sharks
- Focus session on Precautionary Approach and Management (harvest strategies)

For 2026 (SC11), the SIOFA SC identified the following focus topics:

- Focus session on VMEs
- Focus session on Precautionary Approach and Management (harvest strategies)

SC Workshops planned for the 2024 and 2025 years

Table 3: SC Workshops planned for the 2024 and 2025 years.

Workshop code	Lead	Summary Title	Budget	Funding source
WS2024-HSS	SC Chair	MoP-SC Workshop on Harvest Strategies (hybrid)	-	-
WS2024-OBS	SC Chair	Scientific Observer Form Workshop (virtual)	-	-
WS2024-PAD	AUS/Trent Timmiss	Workshop on protected area designation (virtual)	1,000 €	MoP*
WS2025-PAM1	SC Chair	Precautionary Approach and Management 1 (virtual)	-	SIOFA-PAM
WS2025-PAM2	SC Chair	Precautionary Approach and Management 2 (virtual)	-	SIOFA-PAM
WS2025-PAM3	SC Chair	Precautionary Approach and Management 3 (virtual)	-	SIOFA-PAM

* This funding should come from general budget line 3.3

SC projects planned for the 2024-2028 period

Table 4: 2024 planned projects in the SC9 workplan. Priority indicates the priority rank assigned by SC9.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2024-01	JPN (Takehiro Okuda)	Alfonsino acoustics	10,000 € (+55,000)	MoP + (COK)	Planned	5.8
ALF-2024-02	JPN (Takehiro Okuda) /COK (Stephen Brouwer)	Alfonsino age protocol development	15,000 €	MoP	Planned	9
ORY-2024-01	COK (Steve Brouwer)	Orange roughy stock assessment	50,000 €	MoP	Planned	8.4
PAM-2024-01	TBD	Development of the SIOFA Precautionary Approach Framework (PAF)	62,500 €	EU grant SIOFA-PAM	Planned	-
PAM-2024-02	TBD	Determination of Biological Reference Points (BRPs) for key SIOFA fish stocks	37,500 €	EU grant SIOFA-PAM	Planned	-
PAM-2024-03	TBD	Development of Harvest Strategies for key SIOFA fish stocks	50,000 €	EU grant SIOFA-PAM	Planned	-
DWS-2024-01	EU/Roberto Sarralde	Development of a formal quantitative assessment of Portuguese dogfish catch and determination of the level of sustainable catch (a continuation of DWS-2023-01)	-	CCP	Planned	-
DWS-2024-02	EU/Roberto Sarralde	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	-	CCP	Planned	-
TOT-2024-02	EU/FROT	Evaluation of the toothfish monitoring program based on tagging	-	CCP	Planned	-
CLI-2024-01	AUS (Trent Timmiss)	Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts	25,000 €	MoP	Planned	3.8

Table 5: 2025 projects in the SC9 workplan (black) and potential projects that will be developed and prioritized at SC10 (red). Priority indicates the priority assigned by SC9.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2025-01	JPN (Takehiro Okuda)	Alfonsino age and growth	25,000 €	MoP	Planned	7.8
ALF-2025-02	COK (Stephen Brouwer)/JPN (Takehiro Okuda)	Alfonsino CPUE and length assessment	25,000 €	MoP	Planned	7.8
NAN-2025-01	TBD	Nansen cruise in the SIOFA area	TBD	TBD	TBD	TBD
HSS-2025-01	TBD	Development of additional objectives such as bycatch, fisheries impacts, benthic impacts, etc., as part of harvest strategies	TBD	TBD	TBD	TBD
HSS-2025-02	TBD	Evaluation the different stock assessment options, based on the level of data available, for all species that are potential candidates for harvest strategies	TBD	TBD	TBD	TBD
OBS-2025-01	TBD	Development of an accreditation process for SIOFA scientific observer programmes.	TBD	TBD	TBD	TBD
OBS-2025-02	TBD	Documentation describing how the SIOFA scientific observer program is structured and run	TBD	TBD	TBD	TBD
OBS-2025-03	TBD	Development of a SIOFA scientific observer data collection manual	TBD	TBD	TBD	TBD
HCR-2025-01	TBD	Development of interim ad-hoc harvest control rules that could be used for managing stocks, including for example, harvest control rules that adjust any future catch limits based on trends in CPUE or other stock status indicators.	TBD	TBD	TBD	TBD

Table 6: 2026 projects in the SC9 workplan (black) and potential projects that will be developed and prioritized at SC10 or SC11 (red). Priority scores indicated are from SC8 and may be updated at SC10 or 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	9
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	TBD	TBD	TBD	TBD

Table 7: 2027 planned projects in the SC9 workplan (black) and potential projects that will be developed and prioritized at SC10 or 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	TBD	TBD	TBD	TBD

Table 8: 2028 planned projects in the SC9 workplan (black) and potential projects that will be developed and prioritized at SC10 or SC11 (red). Priority scores are from SC9 and may be updated at SC10 or SC11.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
BYC-2028-01	TBD	Bycatch definitions	15,000 €	TBD	TBD	4.8

Annex N – Proposed revision to nomenclature in CMM 12(2023) Annex 1

FAO code	English common name	French common name	Scientific name
APD	Smallbelly catshark	Holbiche artouca	<i>Apristurus indicus</i>
BZL	Narrowhead catshark		<i>Bythaelurus tenuicephalus</i>
BZO	Bach's catshark		<i>Bythaelurus bachi</i>
CYO	Portuguese dogfish	Pailona commun	<i>Centroscymnus coelolepis</i>
CYP	Longnose velvet dogfish	Pailona à long nez	<i>Centroselachus crepidater</i>
CYU YSM	Largespine velvet dogfish Plunket shark	Pailona austral	<i>Scymnodon macracanthusplunketi</i>
DCA	Birdbeak dogfish	Squale savate	<i>Deania calceus</i>
ETP	Smooth lanternshark	Sagre nain	<i>Etmopterus pusillus</i>
EZT	Blue-eye lanternshark		<i>Etmopterus viator</i>
EZU	Whitecheek lanternshark		<i>Etmopterus alphas</i>
ETB	Blurred smooth lantern shark		<i>Etmopterus bigelowi</i>
GUP	Gulper shark	Squale-chagrin commun	<i>Centrophorus granulosus</i>
GUQ	Leafscale gulper shark	Squale-chagrin de l'Atlantique	<i>Centrophorus squamosus</i>
CPU	Little gulper shark	Petit squale-chagrin	<i>Centrophorus uyato</i>
HCR	Pacific longnose chimaera	Chimère à nez rigide	<i>Harriotta raleighana</i>
HXC	Frilled shark	Requin lézard	<i>Chlamydoselachus anguineus</i>
HXN	Bigeyed sixgill shark	Requin-vache	<i>Hexanchus nakamurai</i>
LMO	Goblin shark	Requin lutin	<i>Mitsukurina owstoni</i>
QUK	Shortspine spurdog	Aiguillat épinette	<i>Squalus mitsukurii</i>

FAO code	English common name	French common name	Scientific name
SDQ	Longsnout dogfish	Squale-savate à long nez	<i>Deania quadrispinosa</i>
SDU	Arrowhead dogfish	Squale-savate lutin	<i>Deania profundorum</i>
SCK	Kitefin shark	Squale liche	<i>Dalatias licha</i>
SSQ	Velvet dogfish		<i>Zameus squamulosus</i>
RZZ	Southern sleeper shark		<i>Somniosus antarcticus</i>
ZZC	Dark-mouth chimaera		<i>Chimaera buccanigella</i>
ZZD	Falkor chimaera		<i>Chimaera didierae</i>
ZZE	Seafarer's ghost shark		<i>Chimaera willwatchi</i>
N/ADWG	Cristina's skate		<i>Bathyraja tunae</i>
RFI/A	Paddlenose chimaera		<i>Rhinochimaera africana</i>

Annex O – Draft agenda for workshop to progress future protected area designation

1. Opening

- 1.1. Welcome from Convenor
- 1.2. Introduction of meeting participants
- 1.3. Adoption of agenda
- 1.4. Confirmation of meeting documents
- 1.5. Report arrangements

2. International Obligations and Initiatives of potential relevance (for information only)

3. SIOFA Protocol for future marine protected areas designation

- 3.1 Review Interim Protocol and criteria
 - 3.1.1 IUCN protocol proposal
 - 3.1.2 Application of Bioregionalisation

4. Workplan to progress identification and designation of future

- 4.1. Draft workplan and indicative budget

5. Summary of advice to SC

Annex P - Implementation plan of the recommendations of the SIOFA Performance Review Panel updated with SC comments

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
0	<p>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:</p> <ol style="list-style-type: none"> 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. 	<p>MoP will review the implementation of the 1st SIOFA performance review at MoP12.</p>				

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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
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.	MoP endorses this recommendation, work is ongoing	M/L	SC / Secretariat	3 - 5 years	See the fisheries summaries (SC9 Report)

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses this recommendation	M	SC Secretariat for publication CCPs for implementation	3 – 5 years	Note the proposed SC VME focused session in 2025
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.	MoP endorses this recommendation	H/M	SC MoP	1 - 3 years	Note the proposed SC VME focused session in 2025 and protected area workshop in 2024
6	The Panel recommends SIOFA CCPs consider capacity building activities for developing States to undertake BFIA as per the SIOFA standards.	MoP endorses this recommendation	H/M H on data capacity building	SC / Secretariat	1 - 3 years	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
7	<p>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.</p>	<p>MoP agrees with the concerns expressed by SC. MoP does not endorse this recommendation</p> <p>The MoP would however consider mechanisms to enable CCPs to provide data on a more frequent basis.</p>				

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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	Note the SC workplan with priorities developed for up to 5 years

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
9	<p>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 fishers) to have a clear and user-friendly access to their applicable rules and discipline.</p>	<p>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.</p> <p>MoP adopts the renaming convention of the CMM.</p>	M	CC / Secretariat	<p>Ongoing</p> <p>Oct 2023 for CMMs renaming</p>	<p>A change to the CMM naming convention was adopted at MoP10, and this was implemented by the Secretariat in October 2023</p>

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorsed recommendation 10	M	SC	1 - 3 years	See the SC workplan for proposed projects relating to the precautionary approach framework and harvest strategies (SIOFA-PAM)
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.	MoP endorsed recommendation 11	H	MoP	Ongoing	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
13	The Panel recommends SIOFA CCPs adopt precautionary measures for target stocks other than the three key stocks of toothfish, orange roughy and alfonsino.	MoP endorsed recommendation 13	H/M	SC / MoP	Ongoing	Note the development of the ERA and proposed updates for future meetings (SC workplan)
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, BFAs and VME mapping.	MoP endorses recommendation 15 Work in ongoing	H/M	SC and MoP	1 - 3 years	See the SC9 Report, Annex G
--	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.					

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
16	<p>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.</p>	<p>MoP endorses recommendation 16</p> <p>Work in ongoing</p>	H	SC and MoP	1 - 3 years	
17	<p>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.</p>	<p>MoP endorses recommendation 17</p>	H	CC and SC	1 - 3 years	<p>See the SC workplan and the SC VME focused session at SC in 2025</p>

№	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses recommendation 18	M	SC	3 - 5 years	
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.	MoP endorses recommendation 19	H	SC and MoP	1 - 3 years (work ongoing)	Note the projects in the SC workplan and discussions in the SC9 report

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses recommendation 20	M	SC and MoP	3 - 5 years	This is now a standing item of the SC agenda
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.	MoP endorses recommendation 21	M	SC and MoP	3 - 5 years	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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
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.	MoP agrees to consider minimum standards for PI coverage and noted the recommendations from the CC	M	CC and MoP	1 - 3 years	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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)	
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.	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)	-

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses this recommendation. And notes that capacity building was already discussed	H	Secretariat CC SC MoP	1 – 3 years	
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.	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	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses the recommendation	M	Secretariat, CC, SC	3 years	Project SEC2022-OBS1 and the observer harmonisation workshop (WS2024-OBS) have been considered by SC9 (observer manuals and data reporting systems).
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.	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. The Secretariat notes that this was not designed to have an interface or link from outside of the Secretariat, and changes would be required for this to be implemented. The Secretariat currently has data check procedures, but these will need further development to expand the range of checking already in place.

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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 and currently does report issues to CCPs, but these processes will need further development to expand the range of checking already in place.
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.	MoP endorses the recommendation, and notes that Inter-sessional decision process should be used only when exceptional	M / L	MoP	1-5 years	
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.	MoP endorses this recommendation, and notes that this work is ongoing	M	SC, CC and MoP	ongoing	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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 its website.
42	The Panel recommends SIOFA CCPs consider strengthening cooperation with the IOTC, SWIOFC, SEAFO, SPRFMO, and CCSBT, as appropriate.	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	

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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.
--	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.					

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	MoP endorses this recommendation	H	CCPs MoP	1 - 3 years	
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.	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

No	Performance Review Recommendation	MoP Decision	MoP Priority	Implementing Party(ies) / Body(ies)	Proposed Timeline	Comments
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.	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	

Annex Q – SIOFA SC Budget forecast 2025-2027

For more details, see SC-09-INFO-02-Rev1

1. 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.

2. Item 3: Meeting Support – Scientific Committee and Working Groups

- In 2025, SC10 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 2026 and 2027, 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 1: Predicted Costs for Meeting Support – SC and WGs (Item 3)

	2025	2026	2027
3.1 Venue, Catering	26 250€	27 560€	28 940€
3.2 Secretariat travel and accommodation	17 500€	18 375€	19 290€
3.3 Support staff	12 600€	13 230€	13 890€
3.4 SCC Travel and Accommodation	12 600€	13 230€	13 890€
3.5 Video installation	7 000€	7 350€	7 720€
Item 3 Total	75 950€	79 745€	83 730€

Item 3.1 (Venue, catering)

- The price for 2025, 2026 and 2026 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 26 250€ increasing each year of 5 % due to the inflation and the rate change.

Item 3.2 (Secretariat travel and accommodation for meetings)

- For 2024, the price of economy travels and accommodation for three SIOFA staff members in Bangkok has been assessed to 15,000€ and has been completely expensed.
- For 2025 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 12 600€ for 2025, based on previous years.

Item 3.4 (SC Chairperson travel and accommodation)

- The cost of travel and accommodation for the SC Chairperson will be covered if they are from a developing country or if the SC Chairperson is under contract. These costs are estimated to 12 600€ for 2025. This could be paid, if the MoP agree, from the reserve fund.

Item 3.5. (Video installation)

- 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 for SC was made to allow scientific consultants to present their work to the Scientific Committee without incurring travel costs to SIOFA. This also allowed non-participants to observe the meeting. This process involves the supply of technical equipment, excluding a permanent maintenance team. The cost of the audio-video installation alone is estimated at €7,000, based on previous years.

3. Item 9: Contracts for Specific Services

The Scientific project for 2024-2025 are following with the estimate costs associated.

Project code	Lead	Summary Title	Budget	Funding source	Project Status	Priority
ALF-2024-01	JPN (Takehiro Okuda)	Alfonsino acoustics	10,000 € (+55,000)	MoP + (COK)	Planned	5.8
ALF-2024-02	JPN (Takehiro Okuda)	Alfonsino age protocol development	15,000 €	MoP	Planned	9.0
ORY-2024-01	COK (Steve Brouwer)	Orange roughy stock assessment	50,000 €	MoP	Planned	8.4
CLI-2024-01	AUS	Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts	25,000 €	MoP	Planned	3.8

The estimates for costs listed under Item 9 are given below (Table 3).

Table 3: Predicted Costs of Contracts for Specific Services (Item 9)

	2025	2026	2027
9.1 Research activities	100,000€	65,000€	50,000€
9.2 SC Chairperson	42,000€	44,000€	46.000€

9.3 Consultant/ expert/ service outsourced ⁽⁵⁾	10,000€ ⁽⁵⁾	10,000€	10,000€
Item 9 Total	152,000€	104,000€	106,000€

⁽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 2025 is 100,000€. The proposed budget funds the projects the projects ALF-2024-01 & 02, ORY-2024-01, and CLI-2024-01.
- For 2026, the proposed budget funds the project ALF-2025-01, ALF-2025-02
- For 2027, the forecast budget funds the

Item 9.2 (SC Chairperson)

- The MoP 10 decided to renew the role of SC Chairperson for 2 years that means until the MoP12 (July 2025)
- The Executive Secretary suggests considering an average inflation cost of 5% to be allocated for the SC Chairperson, if in 2025 any SC Chairperson is not nominated by a CCP.

Item 9.3 (Consultant/Expert/Service Outsourced)

- Costs for contracting services that are not mandatory scientific in nature are estimated at 10,000€ for each year. These expenses have not been observed during the previous years as they have been covered by other budget sources, but may be maintained, if Secretariat has to face to this sort of expenses during the year.