



**8<sup>th</sup> Meeting of the Compliance Committee (CC8) and 11<sup>th</sup> Meeting of the Parties (MoP11)**

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

**MoP-11-06-Rev1**

# SIOFA Scientific Committee Workplan 2024–2028

The SIOFA Secretariat on behalf of the SIOFA Scientific Committee

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| <b>Abstract</b>  |   |
| <p>The 9<sup>th</sup> Annual Meeting of the SIOFA Scientific Committee (SC9) was held at the Berkeley Hotel Pratunam, Bangkok, Thailand, 18–27 March 2024.</p> <p>This paper presents the SIOFA Scientific Committee Workplan for 2024-2028 and includes tables of current activities, as well as planned and potential projects that could be included in the SIOFA SC workplan for future years, as revised and adopted during the meeting (SC-09-INFO-01-Rev1). A summary of this workplan was also included as Annex M of the SC9 report, circulated and published on the meeting page of the SIOFA website on 4 April 2024.</p> <p><u><a href="#">Rev1 addresses comments raised on the floor during MoP11.</a></u></p> |   |

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<sup>2</sup> Documents available only to members invited to closed sessions.

**Recommendations**

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

- **considers** the SIOFA Scientific Committee Workplan 2024-2028 and **endorses** it.

# SIOFA Scientific Committee Workplan 2024-2028

## 1. Introduction

This report provides a draft of the SIOFA Scientific Committee workplan for the period 2024 to 2028 and lists the scientific projects, workshops, and activities for the Scientific Committee to consider at its annual meeting.

In 2022, the MoP requested that the Scientific Committee develop a 3–5 year workplan with an associated budget ([MoP8 report](#), para. 194).

The draft plan includes current projects from the SC8 workplan endorsed by the MoP ([MoP10 Report](#), para. 154) In addition, the draft plan has been updated with recent developments and the status of current projects.

This paper also recalls the guidelines for the development of the workplan which were adopted at SC8 ([SC8 Report](#), Annex O), and given as Annex A and the method for prioritising projects as Annex B.

## 2. Status of SIOFA Science Projects (2023–2024)

In 2023, the Secretariat created a public database of scientific projects on the SIOFA website (<https://siofa.org/science/sc-works>). The lists all current and past projects and for each project displays key information (e.g., start and end dates, budget, consultants etc.) and contains the final report produced by each project. This database is periodically updated by the SIOFA Science Officer.

[Table 1](#) details the projects that were completed or have been active since SC8. For a full summary of SIOFA scientific projects please refer to <https://siofa.org/science/sc-works>.

Table 1: SC workplan projects that have been completed or have been active since SC8. (Budgetted amounts are N/A for projects that are directly funded by CCPs).

| Project code | Lead                  | Summary Title  | Budget   | Funding source      | Project Status                            |
|--------------|-----------------------|--|----------|---------------------|---|
| SER2022-TOP1 |                       | Toothfish stock structure (molecular analysis)   | 8,333 €  | EU grant GO1        | Completed (SC-09 -30)                     |
| SER2022-ORY1 |                       | Orange roughy stock structure  | 8,333 €  | EU grant GO1        | Completed (SC-09 -28)                     |
| SER2022-BYS1 |                       | Alfonsino stock structure  | 10,000 € | EU grant GO1        | Completed (SC-09 -28)                     |
| SER2022-BYS2 |                       | Alfonsino otolith ageing + age validation using bomb radiometry  | 10,000 € | Mop9 + EU grant GO1 | Completed (SC-09 -29)                     |
| SER2022-TOP2 |                       | Toothfish population spatial structure   | 34,000 € | EU grant SIOFA-SEAs | In progress, draft report (SC-09-INFO-18) |
| PAE2022-MPA1 |                       | Protocols to designate and evaluate MPAs   | 18,000 € | EU grant SIOFA-SEAs | In progress, draft report (SC-09-INFO-19) |
| SEC2022-OBS1 |                       | Harmonisation of Scientific Observer programmes  | 48,000 € | EU grant SIOFA-SEAs | In progress, draft report (SC-09-INFO-20) |
| DWS-2023-01  | EU (Roberto Sarralde) | Improving the scientific advice for data-limited deep-water sharks caught longline fisheries in the SIOFA Area | N/A      | EU                  | Completed (SC-09-39 through 42)           |
| TOT-2023-01  | EU (Roberto Sarralde) | Toothfish catch limits   | N/A      | EU                  | Completed (SC-09-35)                      |
| ORY-2023-01  | COK (Steve Brouwer)   | Age and growth of orange roughy  | 40,000 € | MoP                 | In progress                               |
| ORY-2023-02  | COK (Steve Brouwer)   | Orange roughy acoustics  | 25,000 € | MoP                 | In progress                               |
| DWS-2023-02  | SIODFA (Paul Clerkin) | Identification and trends in Deepwater Sharks  | 12,000 € | MoP                 | In progress (SC-09-INFO-21)               |

### 3. SIOFA SC Workplan (2024–2028)

#### 3.1 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 2](#).

*Table 2: 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   |

### 3.2 SIOFA SC requests to CCPs and the Secretariat 2024-2025

SIOFA SC9 requested CCPs and the Secretariat to perform the tasks in [Table 3](#), 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 3: 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   |

### 3.3 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 VMEs~~
- 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)

## 3.4 SC Workshops planned for the 2024 and 2025 years

Table 4: SC Workshops planned for the 2024-2025 period.

| 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, [for the purpose of contracting a Rapporteur](#)

### 1. WS2024-HSS: MoP-SC Workshop on Harvest Strategies

*Description:*

2<sup>nd</sup> Joint MoP-SC Workshop on Harvest Strategies

*Objectives:*

1. Introduction to harvest strategies:
  - a. What are harvest strategies?
  - b. SIOFA progress on harvest strategies (WSHSPA-2023-01)
  - c. SC advice on harvest strategy development.
2. Future Work Plan:
  - a. Management objectives and performance indicators
  - b. Priority species
  - c. Development of operating models and management strategy evaluation
  - d. Draft workplan and indicative budget

*Budget:* None

*Funding source:* MoP

*Workshop outputs:* Provide a summary report which will be presented to MoP11 and SC10 (2025)

*Lead:* SC Chair (Alistair Dunn)

### 2. WS2024-OBS: Workshop on Scientific Observer Forms

*Description:*

Identify and document any issues with the new Scientific Observer forms

*Objectives:*

1. Summarise and document any issues with the new Scientific Observer forms
2. Update and revise the Scientific Observer forms as required

*Budget:* None

*Funding source:* MoP

*Workshop outputs:* Provide a summary report which will be presented to SC10 (2025)

*Lead:* SC Chair (Alistair Dunn)

### **3. WS2024-PAD: Protected area designation workshop**

*Description:*

The protected area designation workshop will progress marine protected areas work to designate and evaluate marine protected areas. The workshop will consist of ~~atwo~~ 4-hour virtual sessions in mid-November 2024. The focus of such a workshop would be to review the protocol for future marine protected areas designation and the development of a workplan. This will build on previous work undertaken by SIOFA.

*Objectives:*

1. Evaluate existing and interim BPAs withing SIOFA and provide advice to the SC9 and MoP12 on their application as effective spatial management tools and for providing clarity for BPA adoption within SIOFAs benthic management framework
- ~~1-2.~~ Provide a summary of International Obligations and Initiatives of potential relevance.
- ~~2-3.~~ Develop a SIOFA Protocol for future marine protected areas designation.
4. Draft a Workplan to progress identification and designation of future protected area designation.
- ~~3.-~~

*Budget:* EUR 1,000 (to contract a Rapporteur)

*Funding source:* MoP

*Workshop outputs:* A ~~conveners~~ report which will be presented to the SC10 (2025)

*Lead:* ~~SC Chair~~Australia (Alistair DunnTrent Timmiss)

### **4. WS2024-PAM1: Workshop on Precautionary Approach and Management 1**

*Description:*

Scientific Committee workshop on the development of a Precautionary Approach Framework and management in SIOFA

*Objectives:*

1. Linked to objective 1 of the SIOFA-PAM EU Grant
2. Details to be filled in at SC10

*Budget:* None

*Funding source:* EU SIOFA-PAM



*Workshop outputs:* Provide a summary report which will be presented to MoP12 and SC11 (2026)

*Lead:* SC Chair (Alistair Dunn)

## **5. WS2024-PAM2: Workshop on Precautionary Approach and Management 2**

*Description:*

Scientific Committee workshop on the development of a Precautionary Approach Framework and management in SIOFA

*Objectives:*

1. Linked to objective 2 of the SIOFA-PAM EU Grant
2. Details to be filled in at SC10

*Budget:* None

*Funding source:* EU SIOFA-PAM

*Workshop outputs:* Provide a summary report which will be presented to MoP12 and SC11 (2026)

*Lead:* SC Chair (Alistair Dunn)

## **6. WS2024-PAM3: Workshop on Precautionary Approach and Management 1**

*Description:*

Scientific Committee workshop on the development of a Precautionary Approach Framework and management in SIOFA

*Objectives:*

1. Linked to objective 3 of the SIOFA-PAM EU Grant
2. Details to be filled in at SC10

*Budget:* None

*Funding source:* EU SIOFA-PAM

*Workshop outputs:* Provide a summary report which will be presented to MoP12 and SC11 (2026)

*Lead:* SC Chair (Alistair Dunn)

### 3.5 Projects in the 2024-2028 Workplan

Projects that were planned at SC8 are listed in [Table 5](#) for 2024 and in [Table 6](#) for 2025. In addition, potential projects from EU funding that may be available from the SIOFA-PAM funding application are also given in [Table 5](#). Note that some of these would likely be ongoing projects in subsequent years.

Based on the requests from the MoP and the recommendations from the WS-2024-OBS workshop (above), potential projects that could be initiated in the upcoming years are listed below in Tables 3-5. There is likely to be an overlap between projects within the SIOFA-PAM EU grant and the requests from the MoP for the development of harvest strategies. The SC would need to consider how these may be combined.

Table 5: 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       |
|--------------------------|---|---|-----------------------------------|------------------------|--------------------|----------------|
| <del>ALF-2024-01</del>   | <del>JPN (Takehiro Okuda)</del>             | <del>Alfonsino acoustics</del>  | <del>10,000 €<br/>(+55,000)</del> | <del>MoP + (COK)</del> | <del>Planned</del> | <del>5.8</del> |
| ALF-2024-01 <del>2</del> | 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            | -              |
| <del>CLI-2024-01</del>   | <del>AUS (Trent Timmiss)</del>              | <del>Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts</del>   | <del>25,000 €</del>               | <del>MoP</del>         | <del>Planned</del> | <del>2.8</del> |

Table 6: 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        |
| <u>CLI-2025-01</u> | <u>AUS (Trent Timmiss)</u>                 | <u>Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts</u>  | <u>25,000 €</u> | <u>MoP</u>     | <u>Planned</u> | <u>3.8</u> |
| 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 7: 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          |
| <u>ALF-2024-021</u> | <u>JPN (Takehiro Okuda)</u> | <u>Alfonsino acoustics</u>   | <u>10,000 € (+55,000)</u> | <u>MoP + (COK)</u> | <u>Planned</u> | <u>5.8</u> |
| 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 8: 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 9: 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            | Planned        | 4.8      |

## 4. Project descriptions

### 4.1 2024/25 projects

#### ~~1. ALF-2024-01: Alfonsino acoustics~~

##### ~~Description:~~

~~Acoustic data are used as abundance indices in the SIOFA orange roughy stock assessments, but there are questions regarding their feasibility for use for alfonsino. SIOFA requires the existing acoustic data, that are collected by commercial vessels fishing for alfonsino, be collated, checked for quality control purposes and then assessed for their feasibility for use as an abundance estimate for use in the alfonsino stock assessments. The acoustic data (2023/2024) from one trawl vessel (Cook Islands) will be available. A series of test acoustic runs with associated trawl identification tows will be conducted by the Cook Island vessel these will be evaluated to determine their feasibility to assess biomass of alfonsino.~~

##### ~~Objectives:~~

- ~~1. Evaluate the existing acoustic data from the Cook Island vessels.~~
- ~~2.1. Provide an analysis of the data quality for the data collated in ToR 1 using the same techniques applied in 2018, 2021 and 2024 orange roughy surveys assessing levels of uncertainty (e.g., acoustic signal vs catch, species identification, survey design, target strength, absorption, calibration, and other relevant factors). Make recommendations on the future feasibility of alfonsino acoustic surveys for assessing biomass trends for use in stock assessments.~~
- ~~3.1. Comment on the viability of using acoustic data to assess alfonsino biomass and if useful comment on the practicality of undertaking further surveys.~~

~~Budget: EUR 10,000 (+55,000)~~

~~Funding source: MoP (10,000) and Cook Islands (55,000)~~

~~Workshop outputs: Provide at least one report which will be presented to either SC10 (2025) or SC11 (2026)~~

~~Lead: JPN (Takehiro Okuda)~~

### **2.1.ALF-2024-012: Alfonsino age protocol development**

*Description:*

Recent work on alfonsino otoliths has shown that the techniques used to estimate age from otoliths have severely underestimated the age of these fish (SC-09-29). As such a new ageing technique is needed. This requires the development of a protocol for ageing, training some ages in this technique and then testing the technique on a sample set of otoliths.

Key to this process is to get a number of fish agers involved from multiple labs so that all otoliths from the region can be aged using the same techniques.

*Objectives:*

1. Develop a protocol for ageing sectioned otoliths of alfonsino.
2. Age a selection of otoliths from a length stratified sample of fish.
3. Compare ages between workshop participants.

*Budget:* EUR 15,000 (estimated at EUR 50 per otolith + expert time for training agers and some report development time). Otoliths for this work will be supplied by the Cook Islands.

*Funding source:* MoP

*Project outputs:* Provide reports which describe the analyses and ageing protocol to the SC10 (2025)

*Lead:* JPN (Takehiro Okuda)/COK (Stephen Brouwer)



### **3.2. ORY-2024-01: Orange roughy stock assessment (2024-2025)**

#### *Description:*

Undertake a stock assessments of orange roughy stocks in the SIOFA area. This should build on and improve the work of the two previous assessments (Cordue 2018 and Roa-Ureta et al. 2022). While there could be multiple sub-stocks of orange roughy in the SIOFA area until work is completed on the stock structure two broad stocks should be assumed one on Walters Shoal (Walters shoal, WSR and Seamounts) and the other on the southwest Indian Rise (Meeting, South Ridge, Middle Ridge and North Ridge). The outcomes of this assessment should be collated in a report and presented to SC10 in 2024.

#### *Objectives:*

1. Meet with the SIOFA orange roughy assessment review pre-assessment review panel to discuss data input and potential assessment approaches.
2. Review the previous stock assessments, all new information (including updated growth, maturity and acoustic data), and other relevant information to undertake an age structured production model to estimate the stock status of orange roughy at Walters Shoal and the Southwest Indian Rise.
3. Develop a standardised CPUE index. Note this should be in the form of a simple standardisation using available factors such as seamount, alfonso bycatch, prevailing weather, etc. there will be no vessel effects. The SIOFA interim reference points (Target = 40%B0 and Limit = 20%B0), and if SIOFA has not yet adopted final target and limit reference points, then a range of other reference points should be considered and estimates of stock status, fishing mortality and biomass should be provided in the terminal year of the assessment and over time including, at least but not limited to status in relationship to B40% and B20%, MSY,  $SB_{MSY}$ ,  $SB_0$ ,  $SB_{F=0}$ ,  $SB/SB_{MSY}$ ,  $SB/SB_{F=0}$ ,  $SB/SB_0$ ,  $F$ ,  $F_{MSY}$ ,  $F/F_{MSY}$ ,  $F_{40\%B0}$ .
4. The assessment should include sensitivities to acoustics, age inputs, and CPUE.
5. Estimates of 20-year projected status (at 5-year intervals) under a range of future catch scenarios and appropriate estimates of future productivity (i.e., year class strengths). Analysis should include projections using constant catch and constant fishing mortality strategies.

*Budget:* EUR 50,000

*Funding source:* MoP

*Project outputs:* Provide at least one report which will be presented to the SC10 (2025)

*Lead:* COK (Steve Brouwer)

### **4.3. PAM-2024-01: Development of the SIOFA Precautionary Approach Framework (PAF)**

*Description:*

The PAF will be developed to enable SIOFA to meet the objectives of Articles 2 (Objectives) and 4 (General principles) of the SIOFA Agreement. The PAF will be approached in a structured way by first addressing the conceptual issues, and second, addressing the operational implementation guidelines. The PAF will provide a fisheries precautionary approach framework that is designed to help ensure sustainable fisheries within the SIOFA Area.

The framework will describe the overarching principles and concepts that the PAF will aim to achieve, informed by international best practice. The framework will also include a set of operational guidelines to guide the implementation of the framework. The PAF will need to be compatible with other processes being developed by SIOFA (such as the harvest strategies for key SIOFA fish stocks, bottom fishing footprint, exploratory fisheries, etc) and the implementation of a broader ecosystem approach to fishery management.

The PAF will consider different frameworks that may be applied, including the principles and operational guidelines for low, medium, or higher information stocks. The PAF should describe the roles of scientists, the Scientific Committee, and the Meeting of the Parties and managers in the PAF process.

The PAF will take into consideration other Regional Fisheries Management Organizations (RFMOs) Precautionary Approach Frameworks, as well as CCP requirements.

*Objectives:*

To provide a fisheries precautionary approach framework designed to help ensure sustainable fisheries within the SIOFA Area.

*Budget:* TBD (62,500 €)

*Funding source:* SIOFA-PAM EU grant

*Project outputs:* Provide a report and presentation to SC12 (2027)

Other outputs could include the outcomes of Workshops during the project development.

*Lead:* TBD

#### **5.4. PAM-2024-02: Determination of Biological Reference Points (BRPs) for key SIOFA fish stocks**

##### *Description:*

The determination of BRPs is a critical component of fisheries stock assessment/evaluations, the PAF and Harvest Control Rules (HCRs). They will be developed so that they can be used to inform fisheries managers about stock's status relative to the BRPs and hence the overall management objectives.

The need for simultaneous consideration of biological reference points and actions to be taken if they are exceeded is made in both the FAO Code of Conduct for Responsible Fisheries (SIOFA Agreement Article 1d) and Article 6 of the United Nations agreement relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (SIOFA Agreement Article 1b).

The current interim BRPs (Meeting of the Parties<sup>10</sup> Report, Paras 77 and 78) will be reviewed, including the strengths and weaknesses of each BRP. Further, the project will propose interim default BRPs for low, medium, and higher information stocks to enable evaluation of the status of stocks against these reference points. The conclusions and outcomes from this objective will be consistent with the final PAF guidelines, as appropriate.

The development of the BRPs will consider the relationship between BRPs and relevant factors such as the stock productivity, stock status, and the exploitation patterns of SIOFA fisheries. Suitable proxies for stock status and BRPs should also be considered and will be consistent with the operational guidelines. Example case studies will be used to illustrate their implementation, including examples of different choices of BRPs for the same species or SIOFA species that are harvested in other Regional Fisheries Management Organizations (RFMOs).

##### *Objectives:*

Specifically, the project will:

1. Provide analyses that will support of the development of suitable BRPs for orange roughy, toothfish and alfonsino.
2. Specifically, evaluate the potential use of  $B_{40\%}$  and  $B_{20\%}$ ,  $MSY$ ,  $SB_{MSY}$ ,  $SB_0$ ,  $SB_{F=0}$ ,  $SB/SB_{MSY}$ ,  $SB/SB_{F=0}$ ,  $SB/SB_0$ ,  $F$ ,  $F_{MSY}$ ,  $F/F_{MSY}$  and  $F_{40\%}$ , as well as CPUE equivalents and any appropriate reference points listed in Table 1.
3. The analysis should include consideration of target ranges, threshold regions, and limit reference points.
4. Review methods for the calculation and interpretation of risk and the quantification of uncertainties related to them. For stocks where quantitative risk analyses are not possible, provide options on how to establish appropriate default reference points and how these may be improved to be stock specific reference points.
5. Determine the conditions for when/if the BRPs would need to be revised or reevaluated (e.g., identify changes in available Information or regime shifts).

Table 1: Potential reference points considered by assessment type that could be considered

| LRP            | Group            | Assessment type          | Comments  |
|----------------|------------------|--------------------------|---|
| x% F/FMSY      | Target & Bycatch | Data rich                | Choose the level of x based on an evaluation.   |
| x% SB/SBF=0    | Target & Bycatch | Data rich                | Choose the level of x based on an evaluation.   |
| x% SB0         | Target & Bycatch | Data rich                | Choose the level of x based on an evaluation.   |
| SPR x% SBF=0   | Bycatch          | Medium data or data poor | Choose the level of x based on an evaluation.   |
| x% CPUE 0      | Target & Bycatch | Data rich or Medium data | Choose the start of a reliable CPUE series and the level of x.  |
| SB/SBF=0 t1-t2 | Target & Bycatch | Data rich                | Choose a time period where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels.                                     |
| SB t1-t2       | Target & Bycatch | Data rich                | Choose a time period where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels.                                     |
| CPUE t1-t2     | Target & Bycatch | Data rich or Medium data | Choose a time period where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels.                                     |
| SB/SBF=0 low   | Target & Bycatch | Data rich                | Choose a low year where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels.  |
| SB low         | Target & Bycatch | Data rich                | Choose a low year where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels.  |
| CPUE low       | Target & Bycatch | Data rich or Medium data | Choose a low year where the stock was considered in an undesirable state (and should be avoided in future), but recovered back to suitable levels. Note CPUE t1-t2 is more precautionary. |
| F/F lim >1     | Bycatch          | Data poor                | Use as an interim LRP until a more reliable metric can be generated.  |
| F/F crash >1   | Bycatch          | Data poor                | Use as an interim LRP until a more reliable metric can be generated.  |

See also Table 7 from WCPFC-SC17-2021/MI-WP-08.

**Budget:** TBD (37,500 EUR)

**Funding source:** SIOFA-PAM EU grant

**Project outputs:** Provide a report and presentation to SC12 (2027)

Other outputs could include the outcomes of Workshops during the project development.

**Lead:** TBD

### **6.5. PAM-2024-03: Development of Harvest Strategies for key SIOFA fish stocks**

#### *Description:*

This project will undertake simulation and technical scientific analyses of key SIOFA fish stocks that would inform the development of harvest strategies, including consideration of appropriate management controls and scientific data collection and analyses. These will be tested under different scenarios to assess their effectiveness and trade-offs between different management objectives.

This project will address the setting of management objectives, BRPs, monitoring strategy, Harvest Control Rules (HCRs), Management Strategy Evaluations, and other scientific analyses or elements considered appropriate for key SIOFA fish stocks (e.g., orange roughy and toothfish). The conclusions and outcomes from this project could also be consistent with the final PAF guidelines.

This project will provide technical advice to the Scientific Committee and Meeting of the Parties, including the scientist-fisheries manager joint meetings and workshops, on harvest strategies to support the adoption and use of harvest strategies by the Meeting of the Parties (SIOFA MoP10 Report Para 88).

#### *Objectives:*

To develop harvest strategies designed to help ensure sustainable fisheries within the SIOFA Area.

Evaluation of different stock assessment options, based on the level of data available, for all species that are potential candidates for harvest strategies.

Development of additional objectives such as bycatch, fisheries impacts, benthic impacts, etc., as part of harvest strategies.

*Budget:* TBD (50,000 EUR)

*Funding source:* SIOFA-PAM EU grant

*Project outputs:* Provide a report and presentation to SC12 (2027)

Other outputs could include the outcomes of Workshops during the project development.

*Lead:* TBD

~~**7.1. CI 2024-02: Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts**~~

~~*Description:*~~

~~This project will assess SIOFA primary, secondary, bycatch species and vulnerable ecosystems for level of vulnerability to climatic change at various temporal scales, using appropriate risk characterisation processes. It will identify those species and ecosystems most likely to require consideration in SC assessment processes within the next ten and twenty years.~~

~~*Objectives:*~~

- ~~1. Identify target, bycatch, species and ecosystems potentially vulnerable to climate change.~~
- ~~2.1. Collate information on the potential impacts of climate change on SIOFA species and ecosystems, including ocean acidification.~~
- ~~3.1. Develop process to characterize risk (probability and magnitude of consequences) under different timescales.~~
- ~~4.1. Assess species and ecosystems against the risk characterisation.~~

~~*Budget:* EUR 25,000~~

~~*Funding Source:* MoP~~

~~*Outputs:* Final project Report to SC11 (2026)~~

~~*Lead:* AUS (Trent Timmiss)~~

## 4.2 2025/26 projects

### 1. ALF-2025-01: Age and growth of alfonsino

*Description:*

This project will contribute to the 2026 assessment and build on the work undertaken by Krusic-Golub K. and Robertson S.G. (2020), Brouwer et al. (2020), and Brouwer et al. (2021) to develop growth and maturity curves for alfonsino (*Beryx splendens*) in the Western and Eastern stocks of the Southern Indian Ocean, using otoliths collected and held by the Cook Islands and Japan. The results from the bomb radiocarbon ageing project (SER2022-BYS2) and the 2024 development of a new ageing protocol should be used.

The development of this project is dependent upon the completion of the alfonsino ageing protocol project (ALF-2024-01).

*Objectives:*

1. Select 20 otoliths for each 5 cm length bin for both male and female fishes caught at each of the Western and Eastern stocks (about 400 otoliths in total).
2. If otolith weight proves to be a useful tool to estimate age a larger sample can be processed using otolith weight to estimate age.
3. Develop sex separated and combined sex growth curves for alfonsino for both stocks and combined area SIOFA growth curves.
4. Use the biological sampling to develop maturity curves in both areas.
5. Provide growth curve parameters suitable for use in a stock assessment for the stocks.

*Budget:* EUR 25,000 (estimated at EUR50 per otolith + some report development time) for ageing of otoliths from CCPs other than Japan. (In this project, otoliths collected by Japan will be processed and aged by Japanese scientists and incorporated into growth and maturity analysis).

*Funding source:* MoP

*Project outputs:* Provide reports which describe the analyses to the SC11 (2026)

*Lead:* JPN (Takehiro Okuda)

## 2. ALF-2025-02: Alfonsino CPUE and length assessment

### *Description:*

In order to evaluate recent trends in the population of alfonsino and in the absence of a stock assessment a CPUE analysis will provide information on the recent population trends of alfonsino in the SIOFA area. In addition, length frequency trends can provide informative information on population trends. This analysis should follow on from previous investigations (Brouwer *et al.* 2023 SC-08-INFO-14) using the Cook Islands data but should be expanded to include all fleets.

The analysis should be stratified by fleet and area as a minimum and in addition, the series should be compared to that of Brandao *et al.* (2020) and Brouwer *et al.* (2023).

### *Objectives:*

1. Develop standardised CPUE indices for alfonsino for the Eastern and Western stocks, including for different gears, targeting behaviour and vessel flag.
2. Compare the indices to previously calculated CPUE indices.
3. Provide comment on the recent trends in CPUE.
4. Evaluate trends in length frequency and compare these to the CPUE trends.

*Budget:* EUR 25,000

*Funding source:* MoP

*Project outputs:* Provide reports which describe the analyses to the SC11 (2026)

*Lead:* COK (Stephen Brouwer) / JPN (Takehiro Okuda)



**3. CLI-20254-012: Assessment of SIOFA Species and Ecosystems for vulnerability to climate change impacts**

Description:

This project will assess SIOFA primary, secondary, bycatch species and vulnerable ecosystems for level of vulnerability to climatic change at various temporal scales, using appropriate risk characterisation processes. It will identify those species and ecosystems most likely to require consideration in SC assessment processes within the next ten and twenty years.

Objectives:

1. Identify target, bycatch, species and ecosystems potentially vulnerable to climate change.
2. Collate information on the potential impacts of climate change on SIOFA species and ecosystems, including ocean acidification.
3. Develop process to characterize risk (probability and magnitude of consequences) under different timescales.
4. Assess species and ecosystems against the risk characterisation.

Budget: EUR 25,000

Funding Source: MoP

Outputs: Final project Report to SC121 (2026)

Lead: AUS (Trent Timmiss)

#### **4. NAN-2025-01: Cooperation between the FAO DSF project, SIOFA (RFMO) and the fishing industry (Sealord, SIODFA) in the southwestern Indian Ocean through a joint cruise with the EAF-Nansen Programme**

*Description:*

The primary aim is for the *R/V Dr Fridtjof Nansen* is a Norwegian research vessel operated by Institute of Marine Research (IMR), Bergen, and flagged to Norway, operating for the FAO EAF-Nansen programme, to work alongside a commercial fishing vessel (the *F/V Will Watch*) for both independent and comparative analyses. This proposed cruise in the southwestern Indian Ocean will require:

- 1) Acoustic capabilities for monitoring populations of orange roughy, alfonsino, and other fish living on or close to the seafloor around the seamounts. Also to undertake comparative acoustic work of target strength estimation.
  - CTD profiler - sound velocity adjustment for acoustics
- 2) Deep sea fishing capabilities to validate acoustic signals. A benthic-pelagic trawl for biological sampling (may in part be better undertaken by the commercial vessel).
- 3) Echosounding capabilities for seafloor profiling. A Simrad multibeam (EM710) and single-beam (EK60) echosounders or similar.
- 4) Deep sea ROV capabilities for seafloor surveys. Towed 'CAMPOD' video rig, pan-tilt HD camera, two 400-W strobe lights, 10×10-cm laser pointers, and a backward-looking camera.
- 5) Deep sea benthic sampling capabilities. A Van Veen grab
- 6) Shark identification guide testing capabilities. New style deepwater shark identification keys for training purposes (to be developed by the DSF Project)

The *F/V Will Watch* will be fishing in the Indian Ocean during June 2025 but owing to market uncertainties it is currently uncertain where she will be operating. There are two possibilities:

- Around Walter's Shoal (34°S 44°E), which is among SIOFA interim protected areas, or
- Along the SW Indian Ridge (40°S 46°E to 28°S 62°E) (Figure 1).

The *F/V Will Watch* will probably know its fishing locations by mid-May 2025.

Preliminary dates for the research cruise are mid- to end-June 2025. The *F/V Nansen* will need permission from SIOFA to fish in the Indian Ocean.

*Objectives:* TBD

*Budget:* -

*Funding source:* Nansen Programme

*Project outputs:* This project is expected to present the research cruise results to the SIOFA SC (expected SC11)

*Lead:* TBD

**5. HSS-2025-01: Development of additional objectives such as bycatch, fisheries impacts, benthic impacts, etc., as part of harvest strategies**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

**6. HSS-2025-02 Evaluation the different stock assessment options, based on the level of data available, for all species that are potential candidates for harvest strategies**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

**7. OBS-2025-01 Development of an accreditation process for SIOFA scientific observer programmes**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

**8. OBS-2025-02 Documentation describing how the SIOFA scientific observer program is structured and run**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

**9. OBS-2025-03 Development of a SIOFA scientific observer data collection manual**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

**10. HCR-2025-01: 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.**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*



### 4.3 2026/27 projects

#### 1. ALF-2026-01: Alfonsino stock assessment (2025-2026)

*Description:*

Update the stock assessment of Alfonsino stocks in the SIOFA area. This should build on and improve the work of the previous assessment (Brandão et al. 2020). The outcomes of this assessment should be collated in a report and presented to SC11 in 2026.

*Objectives:*

1. Meet with the SIOFA Alfonsino assessment review pre-assessment review panel to discuss data input and potential assessment approaches.
2. Review the previous stock assessments, all new information (including updated growth, maturity and acoustic data), and other relevant information to undertake an age structured production model to estimate the stock status of Alfonsino.
3. The SIOFA interim reference points (Target = 40%B<sub>0</sub> and Limit = 20%B<sub>0</sub>), and if SIOFA has not yet adopted final target and limit reference points, then a range of other reference points should be considered and estimates of stock status, fishing mortality and biomass should be provided in the terminal year of the assessment and over time including, at least but not limited to status in relationship to B<sub>40%</sub> and B<sub>20%</sub>, MSY, SB<sub>MSY</sub>, SB<sub>0</sub>, SBF=0, SB/SB<sub>MSY</sub>, SB/SBF=0, SB/SB<sub>0</sub>, F, F<sub>MSY</sub>, F/F<sub>MSY</sub>.
4. Estimates of 20-year projected status (in 5-year intervals) under a range of future catch scenarios and appropriate estimates of future productivity (i.e., year class strengths)

*Budget:* EUR 50,000 (Mar 2026 – Mar 2027 at SC12)

*Funding source:* SIOFA

*Project outputs:* Provide reports which describe the analyses to the SC12

*Lead:* JPN (Takehiro Okuda)

## 2. ALF-20264-024: Alfonsino acoustics

### Description:

Acoustic data are used as abundance indices in the SIOFA orange roughy stock assessments, but there are questions regarding their feasibility for use for alfonsino. SIOFA requires the existing acoustic data, that are collected by commercial vessels fishing for alfonsino, be collated, checked for quality control purposes and then assessed for their feasibility for use as an abundance estimate for use in the alfonsino stock assessments. The acoustic data (2023/2024) from one trawl vessel (Cook Islands) will be available. A series of test acoustic runs with associated trawl identification tows will be conducted by the Cook Island vessel these will be evaluated to determine their feasibility to assess biomass of alfonsino.

### Objectives:

1. Evaluate the existing acoustic data from the Cook Island vessels.
2. Provide an analysis of the data quality for the data collated in ToR 1 using the same techniques applied in 2018, 2021 and 2024 orange roughy surveys assessing levels of uncertainty (e.g., acoustic signal vs catch, species identification, survey design, target strength, absorption, calibration, and other relevant factors). Make recommendations on the future feasibility of alfonsino acoustic surveys for assessing biomass trends for use in stock assessments.
3. Comment on the viability of using acoustic data to assess alfonsino biomass and if useful comment on the practicality of undertaking further surveys.

Budget: EUR 10,000 (+55,000)

Funding source: MoP (10,000) and Cook Islands (55,000)

Workshop outputs: Provide at least one report which will be presented to either SC10 (2025) or SC11 (2026)

Lead: JPN (Takehiro Okuda)

**3. SAI-2026-01: 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.**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

#### 4.4 2027/28 projects

##### **1. ALF-2027-01: Development of harvest strategies for alfonsino and other primary SIOFA species including stock monitoring and the evaluation of performance indicators**

*Description:*

*Objectives:*

*Budget:*

*Funding source:*

*Project outputs:*

*Lead:*

#### 4.5 2028/29 projects

##### **1. BYC-2028-01: Bycatch definitions**

*Description:*

This project aims to develop a scientifically based categorisation of the different species, based on the agreed definitions in SC8 Annex I, in the catch according to the degree to which they are targeted by the SIOFA fisheries or fall into the categories of retained or discarded bycatch. This work should provide a mechanism which can be used to provide a quick categorisation of each species in each fishery.

*Objectives:*

1. Test the applicability of the definitions of primary and secondary species as well as target, retained and discarded bycatch.
2. The analysis should use reported catch data in the SIOFA database (including all observed and reported retained and discarded catch) at the finest possible scale (i.e. haul by haul data).
3. The analyses should group species based on their characteristics by fishery type.
4. The analysis should give further consideration to the value of the retained catch and provide recommendation on a revised definition based on catch value of each species.
5. Consider developing a matrix of factors that could provide better information for a species categorisation, to emphasize the most essential criteria and distinguish between categories. This could for example include using catch, management level, data availability, fishing areas, ecosystem areas.
6. Undertake a fishery characterisation for each group of species to describing the fisheries taking them, trends in catch and a CPUE standardisation for the top 5 species in each group.

*Budget:* EUR 15,000

*Funding source:* TBD

*Project outputs:* Provide a report and presentation to SC11 with proposed categorisations.

Once this work is completed an additional analysis could be considered that will evaluate the effect of established catch for target species on fishing mortalities of bycatch and give consideration to different management strategies to develop TACs for the target and bycatch species. Noting that some of this work could be encompassed into the harvest strategies for some species as they are developed.

*Lead:*TBD

#### 4.6 Background for the development of the 2024-2028 Workplan

The Meeting of the Parties endorsed the SC workplan and made a number of requests for future work. These include (numbering of paragraphs reflects the [MoP10 Report](#)):

1. The MoP NOTED the recommendations in paragraph 173 of the SC8 report and AGREED to develop harvest strategies for orange roughy and toothfish as a first step, and then subsequently consider developing harvest strategies for alfonso and other primary SIOFA species. The MoP REQUESTED the SC to continue to work to develop harvest strategies in conjunction with workshops held with the MoP.
2. The MoP ENDORSED the recommendations in paragraph 180 of the SC8 report that the MoP consider additional objectives such as bycatch, fisheries impacts, benthic impacts, etc., as part of its harvest strategies. The MoP REQUESTED that the SC provide advice based on the objectives set by the MoP.
3. The MoP ENDORSED the recommendation in paragraph 183 of the SC8 report that the SC consider a wide range of options for stock monitoring programmes; prepare a table (e.g., as shown in Table 2 of the SC8 Report), with the scientific uncertainty, relative costs, and applicability by stock/fishery of the various options; and present this to the MoP for the MoP to decide on the appropriate monitoring programme for each stock.
4. The MoP NOTED the recommendation in paragraph 185 of the SC8 report and REQUESTED the SC evaluate the different stock assessment options, based on the level of data available, for all species that are potential candidates for harvest strategies.
5. 86. The MoP NOTED the recommendations in paragraph 186 of the SC8 report and REQUESTED the SC determine potential performance indicators for each of the management objectives once the MoP has decided on the management objectives.
6. The MoP ENDORSED the recommendations in paragraph 187 of the SC8 report regarding the approach for the development of harvest strategies and the timeline for the implementation of preassessments, assessments, management objectives and implementation of harvest strategies proposed by the Workshop (SC8 Report, Annex G).
7. The MoP ENDORSED the recommendation in paragraph 193 of the SC8 report to hold a joint MoP-SC workshop on harvest strategy pre-assessment in 2024 and discussed the duration and timing of the meeting under agenda item 15.
8. The MoP AGREED to hold a joint MoP-SC intersessional workshop to define management objectives, based on which the SC would develop its scientific advice. The MoP REQUESTED the Chair and the SC to draft the agenda and Terms of Reference for the intersessional workshop. The MoP discussed the timing of the meeting under agenda item 15.
9. The MoP NOTED paragraph 197 of the SC8 report and REQUESTED the SC to develop 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.
10. The MoP ENDORSED the recommendation in paragraph 237 of the SC8 report that analyses should be conducted to evaluate these interim measures' effectiveness, such as Monte-Carlo simulations and a catch-by-distance CPUE depletion analysis, and that once these analyses are completed, the interim measures could be adjusted accordingly.
11. The MoP ENDORSED the recommendation in paragraph 238 of the SC8 report that collection of biological data, particularly aging data, for Portuguese dogfish be enhanced with the aim of

conducting a preliminary quantitative assessment at SC9 and a formal quantitative assessment at SC10 for determining trends in biomass and the sustainable level of Portuguese dogfish catch.

12. The MoP ENDORSED the recommendation in paragraph 246 of the SC8 report and REQUESTED the SC to develop a tagging programme for the consideration of the MoP for skates caught alive and with a high probability of survival on longline vessels and NOTED, as advised by the SC, that in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), skates are cut off at the roller but practices among vessels operating in SIOFA may differ and need to be considered accordingly.
13. The MoP NOTED the recommendation in paragraph 85 of the SC8 report and REQUESTED the SC to develop a fisheries summary for common mora (*Mora moro*).
14. The MoP NOTED the recommendation in paragraph 276 and 288 of the SC8 report regarding potential management options for providing protection for vulnerable marine ecosystems (VMEs) and discussed the table of different VME management options available, as summarized in Annex L of the SC8 report. The MoP 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.
15. The MoP tasked SC9 to provide further advice on fishing gear options to mitigate the ongoing impact of SIOFA fisheries on vulnerable deepwater sharks.
16. The MoP further tasked SC9 to provide definitions of leader and wire and other leader types for longline gear, and advice on the application of move-on rules for demersal longline and trawl fisheries to protect vulnerable deepwater sharks.
17. The MoP AGREED to defer agreement of the South Indian Ridge management area until the SC has provided advice on an appropriate catch limit for this area, and on the possibility of harmonising the management regimes applicable in the existing and future management areas.
18. The MoP REQUESTED the SC to develop a CPUE by analogy assessment of Del Cano Rise and the South Indian Ridge and to consider how CCAMLR trend analysis rules ([https://fishdocs.ccamlr.org/TrendAnalysis\\_2020.pdf](https://fishdocs.ccamlr.org/TrendAnalysis_2020.pdf)) might be applied in the SIOFA Area, including the South Indian Ridge.

The Workshop on the Harmonisation of Scientific Observers ([WS2024-OBS](#)) report (paper [SC-09-34](#)) made a number of recommendations for future work in the SC workplan including (numbering of paragraphs reflects the Convener report, paper [SC-09-34](#)):

19. The Workshop noted that SC8 did not identify specific observer-related topics on their medium-term workplan and recommended that the Scientific Committee consider including this in its future work plan.
20. The Workshop considered the work in the SEC2022-OBS1 project to identify potential future work and recommended that the Scientific Committee further prioritizes the Scientific rather than the Structural list of projects for further discussion.
21. The Workshop recommended 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 Scientific Committee to address these issues. The Workshop further recommended that the timeline for these projects would be on the scale of 2 years.

22. The Workshop recommended that the Scientific Committee note 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.
23. The Workshop recommended that the Scientific Committee consider further work on developing an accreditation process for SIOFA.
24. The Workshop recommended that the Scientific Committee should consider the requirements for observer coverage in all its fisheries, and also for exploratory fisheries once the Meeting of the Parties progresses this topic.
25. The Workshop recommended that the Scientific Committee should develop a document describing how the observer program is structured and run.
26. The Workshop recommended that the Scientific Committee should consider how the proposed data to be collected by observers will be used in fisheries assessment or other analyses relevant to the Scientific Committees work.



## Annex A: Project and workplan guidelines

### A.1 Guidelines for the development of the SIOFA SC workplan (reproduced from SC8 Report, Annex O)

To aid development and successful completion of projects for Scientific Committee (SC) work as part of its workplan, the SC noted that the following guidelines should be used:

1. Identify, for each project in its workplan:
  - a. The specific project objectives, e.g., 1-2 paragraph(s) describing the project title, objectives, and required outputs.
  - b. The Project Lead, e.g., the SC Chair, SC Vice-Chair, or SC delegation representative or scientific expert.
  - c. The timetable for implementation, the duration of the project, and the SC (or other appropriate meeting) where the outcomes should be reported.
  - d. The funding source and amount of funds requested (if required) for undertaking the project.
  - e. A Project Advisory Panel for each project where SIOFA employs external consultants, constituted of the SC Chair or Vice-Chair, Project Lead, and at least 1-2 relevant experts from SC delegations.
2. Each project should be prioritised to allow efforts to be directed towards those with the highest priority.
3. For SC Workshops, ensure that the Workshop convener(s), Workshop terms of reference, timetable, and any papers or reports required for the workshop are identified when Workshops are agreed by the Scientific Committee

Further, the Scientific Committee noted that it should:

1. Take account of potential delays when planning related and sequential projects.
2. Develop project timelines that are a minimum of 2 years between the time of proposal and the expected time of delivery. This is to allow the consideration of project proposals by MoP, and the subsequent development of terms of reference, contracting of consultants, and undertaking of the scientific work to meet the project objectives.
3. Request that the MoP note the guidelines above, and request that they take these into account when directing the Scientific Committee to undertake specific tasks.

### A.2 Science Project Advisory Panel (reproduced from SC-08-INFO-03)

For projects where external consultants are employed by SIOFA to undertake work for the Scientific Committee, the Scientific Committee Chairs suggest that the Scientific Committee consider the following process for Project Advisory Panels:

1. Once a project has been approved (i.e., by the MoP or otherwise as appropriate), a Project Advisory Panel will be established for any Scientific Committee projects that require external consultants, with a Project Lead as designated when the project was proposed (or, if none was designated at the time of the proposal, then by the Scientific Committee Chair).
2. The Project Lead will request nominations from Scientific Committee to be on the Project Advisory Panel. Ideally, the Project Advisory Panel should consist of the Project Lead and at least two representatives nominated by the SC HoDs.

3. The tasks of the Project Advisory Panel will be to:
  - a. Prepare, in consultation with the SIOFA Science Officer and the SC Chair and vice-Chair(s),
    - (i) the project ToRs, outputs, and reporting requirements and timetable for the project.
    - (ii) the timeline for project contracting process (i.e., the timetable for publication of ToRs, consideration of applicants, and subsequent contracting of the consultants).
  - b. Prepare a list of relevant data and report references so that the Secretariat can prepare (and obtain necessary permissions) a data/information package for the consultants that will be available once the consultants have been contracted.
  - c. Review applications received and recommend to the SIOFA Executive Secretary the candidates that should be contracted to undertake the project.
  - d. Provide guidance to the consultants when undertaking the project as appropriate, e.g., through periodic meetings, correspondence, or other appropriate approach that may assist the consultants to meet the project requirements.
  - e. Provide a review and evaluation of project outputs to the SIOFA Executive Secretary and Scientific Committee Chair prior to the work being submitted to the Scientific Committee for its consideration.
  - f. Provide recommendations to the SIOFA Executive Secretary on the acceptance of the project outputs described in the contract with the consultants.

## Annex B: Prioritisation of SIOFA Science Projects

In 2022 and 2023, the SC agreed that scores for each project on the workplan would be given using the scoring system adapted from the Western and Central Pacific Fisheries Commission (WCPFC) and shown in [Table 10](#).

Table 10: SC workplan project priority scoring table. Colours represent priority rankings (6,9 = High; 3,4 = Medium; 1,2 = Low).

|                                    |          | Importance to SIOFA Management Outcomes or to the functioning of the SC |     |          |
|------------------------------------|----------|---|-----|----------|
|                                    |          | Rank  | Low | Moderate |
| Feasibility: Likelihood of Success | Low      | 1   | 2   | 3        |
|                                    | Moderate | 2   | 4   | 6        |
|                                    | High     | 3   | 6   | 9        |

**Importance criteria** evaluate the significance of the outcomes of the proposal in contributing to the successful management of the SIOFA stocks or the functioning of the SC (e.g., is the proposal aligned with the SIOFA research and/or management priorities; does the proposal contribute to the effective planning and functioning of the SC; are the intended outputs/benefits well-defined and relevant; what is the level of impact and likelihood that the proposal outputs will be adopted; is the proposal cost effective). High= Essential; Moderate=Important but not essential; Low=Not Important.

**Feasibility criteria** evaluate the proposal’s potential for success i.e., how likely is the proposal to achieve its stated objectives (e.g., are the objectives clearly stated, is the methodology sound, are the project objectives realistic and likely to be achieved, does the research team [if identified] have the ability, capacity, and track record to deliver the outputs).