

1 **Workshop on Harmonisation of Scientific Observers' Programmes of the Southern Indian Ocean**  
2 **Fisheries Agreement (SIOFA)**

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5 **Proposed Workplan for the harmonisation and evaluation of SIOFA observer**  
6 **programs to improve data quality**

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9 Delegation of French overseas territories

10 October 2021

11 Working paper

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18 **Recommendations**

19 1. Recommends to the SC to create an Ad Hoc Technical Group to develop guidelines  
20 for evaluating and approving observer programs for scientific data collection.

21 2. Considers establishing minimum standards for observer programs.

22 3. Considers designing the process for evaluation of observer programs.

23 3. Notes the proposed Workplan.

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# Proposed Workplan for the harmonisation and evaluation of SIOFA observer programs to improve data quality

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## 1. Context

In order to consistently receive high-quality data from the SIOFA CCPs scientific observer programs, all observers deployed in SIOFA fisheries must operate to a consistent and comprehensive set of standards. Best practice in observer programs highlights the benefits of harmonised training and materials using appropriate standards. Experience from observer programs globally indicates that in the absence of a harmonised/standardised training process there will be a limit to the data quality that can be collected by the scheme overall because of issues of interobserver comparability, variable data-quality standards and working conditions.

At the 2021 SIOFA MoP, the CCPs amended the CMM 2021/02 which specifies data that is to be collected by observers in each fishery, but also specify timelines for developing and adopting a SIOFA framework for scientific observation (paragraph 16) and different templates including for the observer data collection form (paragraph 17).

In an effort to achieve this, the Scientific Committee has proposed to discuss the harmonisation of these scientific observer programs during a dedicated online workshop. This workshop is an opportunity to discuss the timelines and the process for developing guidelines for the evaluation and approval of observer programs for scientific data collection as stipulated in CMM 2020/01 (paragraph 5.c):

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

*c. guidelines for evaluating and approving electronic observer programs for scientific data collection for consideration by the Meeting of the Parties “*

Such developments have been undertaken by several RFMOs and Commissions with different achievements from agreed minimum standards and guidelines (e.g. CCAMLR, IOTC<sup>1</sup>) to more advanced accreditation systems (e.g. SPRFMO<sup>2</sup>) for observer programs.

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<sup>1</sup> [https://www.ccamlr.org/en/system/files/e-pt10\\_4.pdf](https://www.ccamlr.org/en/system/files/e-pt10_4.pdf);

<https://www.iotc.org/documents/regional-observer-scheme-programme-standards>

<sup>2</sup> <https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2021-CMMs/CMM-16-2021-Observer-Programme-12Mar2021.pdf>

## 60 2. Minimum standards for observer programs

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62 In order to establish the process for undertaking the evaluation, there is a need for a precise and  
63 unambiguous definition of the metrics by which to assess an observer program. A prerequisite is the  
64 definition of a comprehensive list of elements and minimum standards necessary for evaluating  
65 scientific observing programs and determining their capabilities to provide high-quality data following  
66 the data standards described in the CMM 2021/02 (WHSOP1-INFO-01).

67 An ad hoc technical group should be constituted from nominations, by Representatives to the Scientific  
68 Committee, of individuals with experience as SIOFA Member technical coordinators or participation in  
69 the workshop on Harmonisation of Scientific Observers Programs of the SIOFA.

70 This ad hoc technical group, which could be assisted by an independent consultant, will be in charge  
71 to develop the list of elements and minimum standards. This list could be based on the extensive work  
72 initiated by the CCAMLR Ad Hoc Technical Group on At-Sea Operations (TASO) for the evaluation of  
73 minimum standards (Appendix 1).

74 Within this ad hoc technical group, CCPs should share existing resources (observer manuals, training  
75 materials, data checking list ...) and dedicated SIOFA documents could be produced:

- 76 • SIOFA observer scheme program standards;
- 77 • SIOFA observer manual;
- 78 • SIOFA species identification guide;
- 79 • Fishery specific data collection forms (following the procedure proposed in WHSOP1-WP-01).

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## 81 3. Design of the process for evaluation of observer programs

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83 Evaluation systems generally rely on a Technical Peer Review Group, which could be the Ad hoc  
84 technical group, that it is being asked to evaluate.

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### 86 **Objective:**

- 87 • The objective of the review of CCP observer programs is to provide metrics of the degree to  
88 which individual programs meet the minimum standards agreed by SIOFA, and to encourage  
89 progress towards a full agreement with these standards.

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### 91 **Initial review:**

- 92 • CCPs submit details of their observer program, in accordance with the information  
93 requirements specified during phase 1, to the Secretariat.
- 94 • The Secretariat will undertake an initial content review, to determine whether the application  
95 contains the necessary material required for a subsequent technical review. Any missing  
96 information will be sought from the CCP prior to proceeding.
- 97 • The Secretariat will undertake an initial technical review of the CCP observer training  
98 program against the Minimum agreed Standards (phase 1) for SIOFA Scientific Observer  
99 Training Program, presenting its preliminary findings to the Technical Peer Review Group.

100 **Technical peer review group:**

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- The technical peer group will provide confirmation that the Secretariat’s review is technically correct and objectively based on measurable metrics. In the case where there is ambiguity in the metrics, the technical peer group will provide guidance to the Secretariat. This could entail a detailed evaluation of the information provided in the application to assess whether the required criteria metrics had been achieved.
  - The Technical peer group will convene, using either remote or in-person meetings, to consider the report of the Secretariat at the request of the Executive Secretary.
  - The Secretariat will amend its initial review given comments from the peer group.
  - The technical peer review group may also at any time advise the Secretariat on recommended changes to the Minimum agreed Standards.

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113 **4. Workplan**

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115 We propose a Workplan for the development and the application of an evaluation process for scientific  
 116 observer programs to improve data quality (Table 1).

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118 **Table 1:** Workplan for the evaluation of SIOFA observer programs.

Year		2021/22	2022/23	2023/2024		Provider	Lead
WG/SC meeting		SC07	SC08	-	SC09		
Framework for evaluation of observer programs							
	Establish minimum standards for observer programs					Ad hoc technical group/ Consultant	SC/SEC
	Design of the process for evaluation of observer programs					Ad hoc technical group/ Consultant	SC/SEC
Evaluation of observer programs	CCPs observer programs submission					CCPs	SC/SEC
	Initial review					Secretariat/ Consultant	SC/SEC
	Peer review					Ad hoc technical group/ Consultant	SC/SEC

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124 **Appendix 1 - Establishment of minimum standards for observer programs**

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126 The tables below present the criteria defined by the CCAMLR Ad Hoc Technical Group on At-Sea  
127 Operations (TASO) for the evaluation of minimum standards. These minimum criteria were used and  
128 extended for the description of the French fisheries observer program applicable to vessels from  
129 French Overseas Territories in SIOFA waters (WHSOP1-INFO-06).

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131 **Observer program infrastructure**

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<b>Infrastructure and record keeping</b>	
Minimum standards	Organisation should have named technical coordinator, although they may not necessarily dedicated full time. Technical coordinators also serve to manage logistics and data.

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<b>Information security</b>	
Minimum standards	Binding contractual requirements in place with observers specifying data security Authorised access control to facility where observer data is stored. Routine data backups made. Secure data management protocols in place for (should have auditable checklist): <ul style="list-style-type: none"><li>• Password protection for observer data.</li><li>• Protocols in place to erase data from observer laptops between deployments</li><li>• Facilities for preservation and archiving of hard copy data forms for a minimum defined period.</li></ul>

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<b>Provision of Gear and Equipment</b>	
Minimum standards	Safety : <ul style="list-style-type: none"><li>• Immersion Suit</li><li>• Boots</li><li>• Decksuit</li><li>• Gloves</li><li>• Wet weather gear</li><li>• Safety harness</li><li>• Solas approved lifejacket</li></ul> Operational : <ul style="list-style-type: none"><li>• Measuring board</li><li>• Scales</li><li>• Forceps</li><li>• Otolith envelopes</li><li>• Data recording forms</li><li>• Sampling instructions</li><li>• ID guides</li><li>• Camera</li></ul>

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137 **Training of observers**

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<b>Duties and responsibilities of observers and the vessel's crew</b>	
Minimum standards	<p>Observers are provided with training explaining the content of the text of the Scheme provided in the Observer Manual Section 1 Annex 1.</p> <p>Vessel data collection responsibilities outlined through relevant Conservation Measures and vessel logbooks.</p> <p>Training aids should include at least 1 of the following:</p> <ul style="list-style-type: none"> <li>• Training Manual</li> <li>• Presentation (verbal, video)</li> </ul>

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<b>Conservation Measures</b>	
Minimum standards	<p>Observers should be provided with up to date copies of the Conservation Measures (electronic or hard copies).</p> <p>Training should be given as to how the Conservation Measures relate to CCAMLR's conservation and management of Antarctic resources and environment.</p> <p>Guidelines should be given to allow the observer to interpret the Conservation Measures that apply to the particular fishery they are operating in.</p>

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<b>Code of Conduct</b>	
Minimum standards	<p>Observers should be provided with a copy of the code of conduct as outlined in the Text of the CCAMLR Scheme of International Scientific Observation<sup>2</sup></p> <p>Reference should be made in the training materials to the expected conduct of both observers and vessels / crew as laid out in explaining the relevance of each.</p>

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<b>Conflict avoidance and resolution</b>	
Minimum standards	N/A

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<b>Functions, tasks and scientific priorities to be carried out onboard vessels operating in the Convention Area (Mandatory)</b>	
Minimum standards	<p>Observers should be provided with a current copy of the functions, tasks and scientific priorities approved by the Scientific Committee and presented in the Observer's Manual<sup>3</sup>.</p> <p>The training materials should reference each of these functions, tasks and priorities and explain their relevance to the work of CCAMLR, including the management of the fishery.</p>

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<b>Fishing Methods</b>	
Minimum standards	<p>Training material includes diagrams and photographic and/or video material that details the different gear types used and observed in the CCAMLR Convention Area or specifically the sectors in which the observers will be deployed.</p>

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<b>Location determination</b>	
Minimum standards	<p>Training material includes theoretical description of how to; • read positions from a standard GPS and plotter likely to be found on a vessels bridge and cross check these with positional data provided to them from the vessels logbook;</p> <ul style="list-style-type: none"> <li>• convert the positional data into the format that must be used when recording the position on the relevant observer forms;</li> <li>• record depth data from a standard echo-sounder</li> </ul>

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<b>Identification of various gear types of fishing gear, their component parts and how to measure these</b>	
Minimum standards	<p>Training material includes sketch and photographic details of the different gear types used and observed in the CCAMLR Convention Area or those that will specifically be monitored by the observers.</p> <p>Training notes should include detailed description of the gear and specifications in the form of diagrams or photographs to assist observers in understanding the specific gear parameters required to be recorded in CCAMLR data forms and report format.</p> <p>After training the observer should be able to find the information necessary to complete the data forms relevant to their observed fisheries;</p> <ul style="list-style-type: none"> <li>• L2 for longline fisheries, finfish <i>Dissostichus spp.</i></li> <li>• T3 for trawl fisheries, icefish and krill</li> <li>• P2 for pot fisheries for crab and finfish.</li> </ul>

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<b>Construction and use of gear used for mitigation of by-catch to CCAMLR specifications</b>	
Minimum standards	<p>Training material covers details on all the different gear modifications and compulsory mitigation methods used and observed in the CCAMLR Convention Area as specified in the CCAMLR Conservation Measures to avoid or mitigate by-catch.</p> <p>Training material includes diagrams and photographic details of mitigation gear types used and observed in the CCAMLR Convention Area or those that will specifically be monitored by the observers.</p> <p>After training the observer must be able to obtain the information necessary to accurately complete the data forms for at least the fishery in which they will be deployed.</p>

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<b>Health and Safety at sea</b>	
Minimum standards	<p>Observers must attend and receive STCW<sup>95</sup> accredited training and certification in Personal Safety and Social Responsibility, PSSR or Personal Survival Techniques, PST. Training must include;</p> <ul style="list-style-type: none"> <li>• Survival difficulties and factors</li> <li>• Personal Protective Equipment</li> <li>• Life rafts and equipment</li> <li>• Actions prior to abandonment</li> <li>• In water survival techniques</li> <li>• Helicopter rescue</li> <li>• Vital &amp; secondary actions in the life raft</li> <li>• Righting an upturned life raft</li> <li>• Use of pyrotechnics</li> </ul> <p>In-house training is provided on the use, care and maintenance of safety gear issued to observers for operating in sub-Antarctic conditions.</p>

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<b>Waste disposal</b>	
Minimum standards	<p>Training includes advice on best means of managing waste onboard a vessel in accordance with the CM 26-01.</p> <p>Observers are instructed on how to accurately complete the fields on the CCAMLR e-forms and in their reports to record waste management and gear loss.</p>

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<b>Identify target and main by-catch species within the Convention Area</b>	
Minimum standards	<p>Training material provided for identifying all target and predominant by-catch species likely to be caught in the CCAMLR Convention Area using the ID guides provided in the CCAMLR Observer Manual and includes instruction on their use.</p>

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<b>Marine mammal and seabird identification and behaviour</b>	
Minimum standards	<p>Training material provided for identifying the main marine mammal and seabird species likely to be observed in the CCAMLR Convention Area together with instruction on recording observed behaviour on the relevant data.</p>

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<b>Sampling and types of measurements</b>	
Minimum standards	<p>Training material and instruction covers all the sampling and measurement fields required to complete the relevant biological data forms for the different fisheries;</p> <ul style="list-style-type: none"> <li>• L6</li> <li>• T4</li> </ul> <p>Instruction is provided on basic sampling strategies and the minimum sample sizes for the target and by-catch species for research and exploratory fishing in accordance with the CCAMLR Conservation Measures and the Scientific Observers' Manual. Training includes instruction on referencing measurement and weighing codes as provided in the Scientific Observers Manual.</p>

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<b>Obtaining and preserving samples</b>	
Minimum standards	<p>Training material and instruction includes detailed instruction on taking and preserving samples during trips that are required in the CCAMLR sampling programs specified in the Scientific Observer Manual. These will include;</p> <ul style="list-style-type: none"> <li>• Extracting otoliths for age and growth studies. Cleaning packaging and labelling of packages.</li> <li>• Preserving whole samples or representative samples of seabirds or marine mammals that may have been killed during fishing operations. Correct labelling of these samples.</li> </ul>

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<b>Determination of conversion factors from product to green weight</b>	
Minimum standards	<p>Instruction and training material is provided on determining and recording accurate greenweight of target species based on their processed weight and how to complete the relevant CCAMLR data forms.</p> <p>Instruction is provided with detailed diagrams, photographic and video aids to identify different processing methods, product codes and weighing scales</p>

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<b>Sexing of species / Use of sexual maturity scales</b>	
Minimum standards	<p>Additional training material is provided for all or the main species targeted in the CCAMLR Convention Area for distinguishing between the sex and the maturity stages from visual indicators such as;</p>

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<b>Tagging and tag retrieval</b>	
Minimum standards	<p>Training notes to include protocol and requirements of the CCAMLR tagging program in accordance with Conservation Measure 41-01 ANNEX C for Exploratory Fisheries.</p> <p>Training provides theoretical instruction on;</p> <ul style="list-style-type: none"> <li>• Preparation a procedure for tagging operations.</li> <li>• Selecting fish for tagging</li> <li>• How and where to tag fish and skates</li> <li>• Detail to be recorded on relevant tagging forms stressing the importance of accuracy to detail.</li> <li>• Procedure to be followed when tagged fish or skates are recaptured that also includes all the detail to be recorded</li> <li>• How to photograph tags from recaptured fish.</li> </ul>

<b>Observation of seabirds and marine mammals</b>	
Minimum standards	<p>Training notes to include protocol and requirements for observations and recording mitigation measures to prevent the incidental by-catch of seabirds and marine mammals in the Convention Area with specific reference to Section 12 of the CCAMLR Scientific Observers Manual and the relevant CCAMLR Conservation Measures;</p> <ul style="list-style-type: none"> <li>• CM 24-02 Longline weighting for seabird conservation</li> <li>• CM 25-02 (2009) Minimisation of the incidental mortality of seabirds in the course of longline fishing or longline fishing research in the Convention Area</li> </ul>

	<ul style="list-style-type: none"> <li>○ Annex 25-02/A</li> <li>○ Annex 25-02/B</li> <li>○ Annex 25-02/C</li> </ul> <p>• CM 25-03 (2009) Minimisation of the incidental mortality of seabirds and marine mammals in the course of trawl fishing in the Convention Area</p> <p>Observers provided with reference material and ID-sheets to assist in identification of marine mammals and seabirds.</p>
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<b>Determining species composition</b>	
Minimum standards	<p>recording mitigation measures to prevent the incidental by-catch of seabirds and Training notes include protocol for statistically sampling catches in trawl, pot and / or longline fisheries. Instruction to cover;</p> <ul style="list-style-type: none"> <li>• Recording observed catch composition on the relevant CCAMLR data forms for each fishery and in the cruise report</li> <li>• Statistically selecting samples</li> </ul>

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<b>Monitoring discards</b>	
Minimum standards	<p>Training notes to include protocol for identification and monitoring discards in trawl, pot and longline fisheries. Instruction to cover;</p> <ul style="list-style-type: none"> <li>• Recording observation of discards on the relevant CCAMLR data forms</li> <li>• Recording and commenting in the cruise report on the level and possible reasons for discards in a fishery.</li> </ul>

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<b>Monitoring effort</b>	
Minimum standards	<p>Training notes to include specific parameters that must be monitored to determine fishing effort and detailed instruction on how to do this and how to record the data in the relevant CCAMLR data forms.</p> <p>Instruction on how to determine;</p> <ul style="list-style-type: none"> <li>• Number of hooks set and baiting efficiency on longlines</li> <li>• Fishing depth, net opening and trawl speed in trawl fishery</li> </ul>

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<b>Gathering meteorological and oceanographic data</b>	
Minimum standards	N/A

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173 **Post trip evaluation, data submission**

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175 N/A