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

10th Meeting of the SIOFA Compliance Committee (CC10) and 13th Meeting of the Parties to SIOFA (MoP13)

Savoy Seychelles Resort & Spa, Beau Vallon, Seychelles, 1–3 July and 6–10 July 2026

MoP-13-33 Rev1

SC11 Technical amendments to CMM 02(2025) (Data Standards)

The SIOFA Scientific Committee

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Abstract	
During the course of the MoP13, the MoP requested the Secretariat provide the Annex D of the SIOFA SC11 report (also included as Annex D of paper MoP-13-05) for their further consideration during the course of the meeting. This paper responds to this request. <u>Rev1: Add light characteristics of light seining to squid jigging.</u>	

¹ Restricted documents may contain confidential information. Please do not distribute restricted documents in any form without the explicit permission of the SIOFA Secretariat and the data owner(s)/provider(s).

² Documents available only to members invited to closed sessions.

Recommendations

- 124. The SC recommended that the MoP **adopt** the draft amendments to CMM 02(2025) (Data Standards) (Annex D).
- 265. The SC recommended that the MoP **adopt** a modified version of Annex A (Vessel Catch and Effort Data) in CMM 02(2025) (Data Standards) to include the number of species retained and discarded among the data that shall be collected, so that overlap statistics can be calculated.

SC11 Technical amendments to CMM 02(2025) (Data Standards)

CMM 02(2025)³

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

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

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

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

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

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

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

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

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

FURTHER NOTING that the Meeting of Parties has adopted policies and procedures for the maintenance of data confidentiality (CMM 03(2025));

³ CMM 02(2025) (Data Standards) supersedes CMM 02(2023) (Data Standards).

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

Application

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

Terminology

3. The following definitions apply to this CMM including its annexes:
 - 'other species of concern' means those species as may be defined by the Scientific Committee from time to time.
 - 'National Report' means the report defined in paragraph-9 of this CMM.

Vessel Catch and Effort Data

Collection of data

4. CCPs shall ensure that data on fishing activities, including for target, non-target and associated and dependent species such as marine mammals, marine reptiles, seabirds or 'other species of concern', are collected from vessels flying their flag that are fishing in the Agreement Area in accordance with the relevant sections of Annex A.
5. CCPs shall collect vessel catch and effort data on a haul-by-haul basis, with the exception of handline fishing, where CCPs shall collect vessel catch and effort data on an operation ⁴ basis.

Data collection and submission

6. CCPs shall report to the Secretariat, by 31 May each year, the data collected under paragraphs 4 and 5 for the previous calendar year, in accordance with the format prescribed in the corresponding annexes.
7. CCPs shall provide to the Secretariat, by 31 May each year, annual catch summaries for all species/groups caught in the Agreement Area during the previous calendar year. The catch summaries shall include the following information:
 - a. Calendar year (e.g. 2015)
 - b. FAO statistical area (e.g. FA087)
 - c. Species/group name (common name and scientific name)
 - d. Species/group code (FAO3-alpha code 19, EG ORY) (if available)
 - e. Annual catch total - tonnes raised to 'live' weight.

8. To assist in data collection CCPs engaged in, or intending to engage in, fishing pursuant to

⁴ An operation is the daily activity of a main vessel (including its dories), where catch is the daily catch and effort is the number of active fishers per day and the number of lines fished per day.

CMM 01(2025) shall implement on-board all fishing vessels flying their flag the FAO Identification guide to the deep-sea cartilaginous fishes of the Indian Ocean⁵. Where available the use of Smartforms may be considered.

National report

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

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

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

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

Historical Data

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

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

Scientific Observer Data

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

- a. Vessel information, effort and catch data for its fishing activities in the Agreement Area, including target, non-target and associated and dependent species including marine mammals, marine reptiles, seabirds or 'other species of concern';
- b. Biological or other data and information relevant to the management of fishery resources in the Agreement Area, as specified in this CMM, or as identified from time to time by the Scientific Committee or through processes identified by the Meeting of the Parties; and
- c. Relevant scientific information related to the implementation of the provisions of the CMMs adopted by the Meeting of the Parties.

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

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

⁵ Ebert, D.A. and Mostarda, E. 2013. Identification guide to the deep-sea cartilaginous fishes of the Indian Ocean, FishFinder Programme, FAO, Rome. 76 p

problems encountered during the previous calendar year.

15. CCPs shall, for all observed trips, collect observer data in accordance with the relevant sections of Annex B. All observer data collected by CCPs shall be reported to the Secretariat by 31 May each year for the previous calendar year.
16. By 2023, the Scientific Committee shall develop and adopt a template for the observer reports, and a template for an observer data collection form that may be used by observers in subsequent years.
17. By 2023, the Meeting of the Parties, based on recommendations from the Scientific Committee and the Compliance Committee shall adopt a SIOFA framework for scientific observation clarifying all the aspects related to the role.

Data Verification

18. CCPs shall:

- a. ensure that fishery data are verified through an appropriate system of data verification mechanisms;
- b. develop, implement, and improve data verification mechanisms, which may include:
 - i. Position verification through vessel monitoring systems;
 - ii. Independent monitoring, including scientific observer programs and approved electronic observer programs,⁶ to verify industry data on catch, effort, catch composition (target and non-target), discards and other details of fishing operations;
 - iii. Vessel trip, landing and transshipment reports; and
 - iv. Port sampling.
- c. provide to the Scientific Committee, through their National Report, an annual data verification report which should provide information regarding their development and implementation of data verification mechanisms.

Format for data submission

19. CCPs shall report all data required to be reported by this measure to the Secretariat in accordance with the formats described in this CMM, including its annexes.
20. Specifications for the submission of data:
 - a. times, latitudinal /longitudinal/ information and units of measure are to be reported in accordance with the format described in Annex C;
 - b. Species are to be described using the FAO 3 letter Species Codes;⁷
 - c. Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes;⁸ and
 - d. Types of fishing vessels are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes.⁹

⁶ Approved electronic observer programs refers to those programs that meet the SIOFA agreed standard and have been reviewed by the Scientific Committee and approved by the Meeting of the Parties as being capable of meeting the data requirements in this CMM.

⁷ <https://www.fao.org/fishery/en/collection/asfis/en>

⁸ <https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/>

⁹ <https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/>

Review

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

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

List of Annexes:

Annex A - Vessel Catch and Effort Data

Annex B - Observer Data

Annex C - Specifications for the Exchange of Data

Annex D – Function and tasks of the scientific observer

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

Annex A

Vessel Catch and Effort Data

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

For all demersal fishing vessels flying their flag:

Data Set - Fishing activities General (Trip) Vessel flag CCP (ISO 3-apha) Name of vessel International radio call sign (if any) Vessel Registration number (flag CCP) Lloyd's / IMO /IHS Fairplay Number (if allocated) Vessel size: Gross Tonnage (Gross register tonnage may be used if GT is not available, or both) Name of person filling in the data
Weight Conversion Factor Species Processing type Conversion factor = live weight/processed weight
Haul Information Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
Set Start date and Time (Based on Coordinated Universal Time (UTC)) Recorded at start and end of fishing For longline vessels - record at start and end of setting, in addition to start and end of haul Date format (YYYY.MON.DD) Time format (hh.mm)
Position at start and end of fishing Latitude Longitude For longline vessels: position is recorded at the start and end of setting For bottom trawl fishing: "start" is defined as when the groundrope first touch the bottom, and "end" is when the groundrope leaves the bottom at the beginning of hauling. For midwater trawl: "start" is defined as when the fishing gear is at target fishing depth, "end" is when the tow haul begins. For handline fishing: record the position of the vessels at the start and at the end of the fishing operation
Bottom Depth (m) As recorded at the start and end of fishing.
Fishing / gear depth (m) As recorded at the start and end of fishing. For trapping/potting, Actual Fishing / gear depth (m) as recorded at start is required.
Species retained Estimated catch retained on board by taxa (FAO species/group code/scientific name) in green weight (kg).

Total number retained by taxa (for longline toothfish target fishing only)
Species Discarded An estimation of the amount of living marine resources discarded by taxa, if possible, in green weight (kg). <u>In addition, if possible, total number discarded by taxa (for longline toothfish target fishing only)</u>
Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern' Presence: Yes / No For each species caught - Taxa name - Number alive - Number dead or injured
Incidental bycatch of VME indicator taxa Presence: Yes / No For each species caught Taxa name

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

Data Set - Fishing activities General (Trip) Vessel flag CCP (ISO 3-apha) Name of vessel International radio call sign (if any) Vessel Registration number (flag CCP) Lloyd's / IMO /IHS Fairplay Number (if allocated) Vessel size: Gross Tonnage (Gross register tonnage may be used if GT is not available, or both) Name of person filling in the data
Weight Conversion Factor Species Processing type Conversion factor = live weight/processed weight
Haul Information Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
Set Start date and Time (Based on Coordinated Universal Time (UTC)) Recorded at start of fishing Date format (YYYY.MON.DD) Time format (hh.mm)
Position at start of fishing Latitude Longitude
Species retained Estimated catch retained on board by taxa (FAO species/group code/scientific name) in live weight (kg)
Species Discarded An estimation of the amount of living marine resources discarded by taxa, if possible, in live weight (kg)
Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern' Presence: Yes / No For each species caught - Taxa name - Number alive

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

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

Data Set – Gear
Handline Number of fishers involved Number of lines per fisher Number of hooks per line
Squid Jigging <u>Lighting</u> <u>Total Power of fish lamp (kW)</u> <u>Lamp Type (e.g. Metal Halide Lamp or LED)</u> <u>Total Power of underwater lamps (kW)</u> <u>Total Power of above sea level lamps (kW)</u> <u>Lighting duration (hours) on underwater lamps and above sea level lamps, respectively</u> Use of the fish finder (Y/N) Number of fishers Number of line machines Fishing duration by hand (h) Fishing duration by machines (h) Number of hooks on per line
Light seining <u>Type of light seining gear</u> <u>FAO Gear code: SV-boat seine (02.2), LNB-boat-operated-liftnet (05.2) and FCN cast net (06.1)</u> <u>Lighting</u> <u>Total Power of fish lamp (kW)</u> <u>Lamp Type (e.g. Metal Halide Lamp or LED)</u> <u>Total Power of underwater lamps (kW)</u> <u>Total Power of above sea level lamps (kW)</u> <u>Lighting duration (hours) on underwater lamps and above sea level lamps, respectively</u> <u>Net details</u> <u>Length on mouth net (m)</u> <u>Width on mouth net (m)</u> <u>Cod end mesh Size (mm)</u>

Annex B

Observer Data

1. Contracting Parties, CNCPs and PFEs shall, for all observed trips, collect and provide to the Secretariat the data contained in this Annex in accordance with the format set out below.
2. Contracting Parties, CNCPs and PFEs shall, where appropriate, ensure that observers are briefed and provided with documented length-frequency and biological sampling protocols and the specific priorities for the trip for the sampling activities documented below.
3. Contracting Parties, CNCPs and PFEs shall endeavour to collect tissue, otolith and/or stomach samples in accordance with any research programs developed by the Scientific Committee.

Hierarchies for Observer Data collection**Fishing Operation Information**

All vessel and tow / set / effort information.

Reporting of Catches

Record time, weight of catch sampled versus total catch or effort (e.g. number of hooks), and total numbers of each species caught

Identification and counts of endangered, threatened or protected species (ETP), seabirds, mammals, reptiles (e.g., turtles), sensitive benthic species and vulnerable species

Record numbers or weights of each species retained or discarded Record instances of depredation, where appropriate

Biological Sampling

Check for presence of tags

Length-frequency data for Target species (FAO species code)

Basic biological data (sex, maturity) for Target species (FAO species code)

Length-frequency data for main bycatch species

Otoliths (and stomach samples, if being collected) for Target species (FAO species code)

Basic biological data for bycatch species

Biological samples of bycatch species (if being collected)

Take photos

Observer Data Sections Common to all fisheries

Data Set - Observer data
Trip Details Trip Number Cruise details (start and end dates - YYYY.MON.DD) Date report is generated (UTC) Current vessel flag CCP (ISO 3-apha) Name of vessel

Observer Details

Observer name and ID
 Nationality (ISO 3-apha)
 Employing organisation
 Contact name in organisation (Address/email/fax)
 Boarding location (UNLOCODE, if applicable or Latitude/Longitude) Boarding Date (UTC:YYYY.MON.DD)
 Disembarkation location (UNLOCODE, if applicable or Latitude/Longitude)
 Disembarkation date (UTC:YYYY.MON.DD)
 Time Zone (UTC +/-)

Length Frequency Data

Representative and randomly sampled length-frequency data shall be collected for the target species (FAO species code)

Length data shall be collected and recorded at the most precise level appropriate for the species (cm or mm and whether to the nearest unit or unit below) and the type of measurement used (total length, fork length, or standard length) shall also be recorded.

Where possible, total weight of length-frequency samples should be recorded, or estimated and the method of estimation recorded

Where possible, Observers should determine and record sex of measured fish to generate length-frequency data stratified by sex

Where possible, representative and randomly sampled length-frequency data should be collected for other main bycatch species

Biological Sampling

Species

Length (mm or cm) and the type of length measurement used.

Skates and rays:

- Maximum disk width shall be measured

Sharks

- Appropriate length measurement to be used should be selected for each species. As a default, total length should be measured.

Weight (kg)

Sex (male, female, immature (optional), unsexed (optional))

Maturity stage (optional) and criteria/schedule used (optional)

Gonad weight (g) (optional)

Otoliths

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

Operation ID (Set ID, tow ID)

At Setting or At Hauling (At setting/At hauling/Not applicable)

Seabirds present in observation area? (Yes/No/Not Observed) Species Estimated numbers of abundance (by species) Operation ID (Set ID, tow ID) Marine Mammals present in observation area? (Yes/No/Not Observed) Species Estimated numbers of abundance (by species)
Observed catch (to be recorded for each operation and for all gears/fisheries, record weight or number according to the fishery) Operation ID (Set_ID, Tow_ID) Observer ID FAO ASFIS Species code <i>Species retained</i> Total Number retained Weight retained (kg) <i>Species discarded</i> Total Number discarded Weight discarded (kg) Number discarded alive Number discarded dead Number or weight of fish lost (if applicable) Number or weight of fish cut off (if applicable) Number of fish depredated (if applicable) Comments
Incidental bycatch of ETP species (seabirds, mammals, turtles or 'other species of concern') The following data shall be collected for all seabirds, mammals, turtles, and other species of concern caught in fishing operations as much as possible: • Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult) and size • Estimated species abundance around fishing vessel • Species interactions with fishing gear • Count of the number of each species caught per tow or set • Fate of bycatch animal(s) (retained or released/discarded) • If released, life status (vigorous, alive, lethargic, injured, dead) upon release • If injured, what was the cause of injury? • If dead, then collect information or samples for onshore identification in accordance with pre-determined sampling protocols. Where this is not possible, observers may be required to collect sub-samples of identifying parts, as specified in biological sampling protocols ◦ Record the type of interaction (hook/line entanglement/warp strike/net capture/other) if other, describe • Sex of each individual for taxa where this is feasible from external observation, e.g. pinnipeds, small cetaceans or <i>Elasmobranchii</i> species • identify any circumstances or actions that may have contributed to the bycatch

event? (E.g. tori line tangle, high levels of bait loss)

Tag releases

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

- Tag type
 - Tag, wording
 - Tag colour
 - Tag number
 - Date and time of tagging
 - Species
 - Animal length
 - Type of length
 - Animal sex (F=female, M=male, I=indeterminate, D=not examined)
 -
 - Position (Lat/Lon) of release
- Animal status at release (injured/uninjured)

Tag Recoveries

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

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

Bird Bands

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

- Species

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

Bird interaction with vessel and collisions (excluding fishing gear)

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

Bycatch mitigation gears details

Streamer line

General Streamer Line Description

Number of streamer lines regularly set

Streamer line position (port, starboard, stern)

Streamer line length (m)

Streamer length min/max (m)

Attached height above water (m)

Distance between streamers (m)

Number of streamers

Streamer design (single or paired)

Aerial extent of line (m)

Method used to assess aerial extent

Streamer material

Streamer line diameter (mm)

Streamer colours

Streamer line over bait entry position? (y/n/u)

Distance from stern to bait entry point (m)

Towed object (Y/N)

Horizontal distance from bait entry point to streamer line (m)

Bird baffler

Other bycatch mitigation device

Trotline cetacean exclusion device

Photo taken of the mitigation gear?

Interactions with Vulnerable Marine Ecosystems (VME)

General information

Name of observer

Name of vessel

Date

Trip number

Set number

VME location

Start and end positions of all gear deployments and/or observations.

(Latitude/longitude)

Depth(s) fished (m)

Fishing Gear

Indicate fishing gears used at each location

VME Taxa

Presence: Yes/No

a) Species (identified taxonomically as far as possible or accompanied by a photograph where identification is difficult).

b) An estimate of the quantity (weight (kg) or volume (m3)) of each listed benthic species caught in the tow (and the unit of measurement).

c) An overall estimate of the total quantity (weight (kg) or volume (m3)) of all invertebrate benthic species caught in the tow (and the unit of measurement).

d) Where possible, provide the live or dead status for corals

e) Where possible, and particularly for new or scarce benthic species which do not appear in ID guides, whole samples should be collected and suitably preserved for identification on shore.

e) Collect representative biological samples from the entire VME catch. (Biological samples shall be collected and frozen when requested by the scientific authority in a Contracting Party). For some coral species that are under the CITES list photographs should be taken.

Other sessile benthos taxa

Presence: Yes/No

For each catch of taxa

Scientific names (identified to the finest taxon level possible)

FAO code (if available)

Estimation of the amount caught

Processing Details and Conversion Factors (CF)

Operation ID (setID, towID)
Name of observer
Species Code (FAO species code)
Processing Code
Length Type
Minimum Length (cm)
Maximum Length (cm)
Number of individuals
Total Green Weight (kg)
Weighting Method
Processed Weight (kg)
Size Grade
Quality Grade
Conversion Factor

Observer data sections that are gear and fishery specific

For trawl fishing activities ONLY

Gear details

Net ID
 Gear type (ISSFCV)
 Headrope length (m)
 Ground rope length (m)
 Ground rope bobbins present?
 Ground rope bobbins material (steel or rubber)
 Ground rope bobbins weight (combined)
 Bobbin diameter (cm)
 Otter board to wing length (m)
 Horizontal Opening, i.e. wingspread (m)

Vertical Opening (m)

Codend mesh

Mesh size (cm),
 codend circumference (cm),
 Orientation
 Mesh type (diamond, square, etc)

Otter board

Type, weight (kg)

Net design

Net design description including make, model etc

Selectivity device present? (Y/N)
 Selectivity device description
 Net monitoring cables present? (Y/N)

Trawl details

Trawl Number
 Bycatch Mitigation Gear used (Y/N)
 Bycatch Mitigation Gear 1 ID
 Bycatch Mitigation Gear 2 ID
 Bycatch Mitigation Gear 3 ID

Trawl type: Research or Commercial (R/C)
 Observed (Yes/No)
 Target Species (FAO species code)
 Date Start (YYYY.MON.DD)
 Date Finish (YYYY.MON.DD)
 Time net deployed (hh:mm)
 Time net retrieved (hh:mm)

Start and End Fishing

For bottom trawl "start" is defined as when the groundrope is on the bottom, "end" is when the hauling starts.

For midwater trawl "start" is defined as when the fishing gear is at target fishing depth, "end" is when the hauling starts.

Time (hh:mm)

Latitude

Longitude

Trawl Depth (m)

Bottom Depth (m)

Other

Offal discharged during shooting (Y/N)

Offal discharged during hauling (Y/N)

Trawl speed (knots)

Total catch (kg)

Was Haul observed for fish/invertebrate bycatch (Y/N):

Record the total weight of all sub-samples for this shot (kg):

Trawl gear strike (to be monitored for 15 minutes immediately after the net has been deployed) (optional):

Start observation time (hh:mm) (optional)

End observation time (hh:mm) (optional)

Species

Nb of light strikes

Light strikes contact place:

Number on windward ward

Number on leeward ward

Number on monitoring cable

Number on net

Nb of heavy strikes

Heavy strikes contact place:

Number on windward ward

Number on leeward ward

Number on monitoring cable

Number on net

Heavy strike fate:

Number aerial

Number sea surface

Number submerged

State of the bird(s) after strike

Number Likely to survive

Number Injured

Number Dead

Number Unknown

For Longline fishing activities ONLY

Longline Description:

Longline Type (ISSCFG codes)

Period in which the gear was used (YYYY.MON.DD)

Start and end date (YYYY.MON.DD)

Target Species (FAO species code)

Main Line:

Material

Diameter (mm)

For Integrated Weight Lines (IWL):

Integrated weight (g/m)

For non-IWL:

Weight spacing (m)

Number of measured weights

Weight type

Average weight (kg)

Standard deviation (kg)

Branch Lines:

Material

Length (m)

Spacing (m)

Branchline weights (kg)

Branchline weight distance from hook (m)

Hooks

Type (e.g.: J shaped, Circular, etc.)

Manufacturer

Marking (vessel mark, leave blank for none)

Model name

Size (mm)

Shank (mm)

Gape (mm)

Usual setting position

Line off bottom (m) (optional for pelagic longline)

Hooks off bottom (m) (optional for pelagic longline)

Method of baiting (manual/automatic)

Automatic baiting equipment (make and model)

Hook sinkers

Size (g)

Position from hook (mm)

Offal dumping position (port, starboard, stern)

Longline setting position (port, starboard, stern)

Offal dumping during hauling (never, occasionally, always)

Propeller rotation direction (clockwise/anti-clockwise)

Detail the weight and distance between the line weights for the longline system used

Single (Auto) Line (kg:m)

Double (Spanish) Line (kg:m)

Trotline (vertical droppers/trots attached to a mainline) (kg:m)

Daily setting observations

Set Number (as referenced in catch and effort log)

Set Type: Research or Commercial (R/C)

Bycatch Mitigation Gear used (Y/N)
 Bycatch Mitigation Gear 1 ID
 Bycatch Mitigation Gear 2 ID
 Bycatch Mitigation Gear 3 ID
 Longline Type Code (FSSCV)
 Date of observation (YYYY.MON.DD)

Setting information

Vessel setting speed (knots)
 Number sets unobserved since last set

Start and End setting for each haul

Date (YYYY.MON.DD)
 Time (hh:mm)
 Latitude
 Longitude
 Bottom Depth (m)

Total length of longline set (km)
 Total number of hooks for the set

For each Observation

Start date (YYYY.MON.DD)
 Start time (hh:mm)
 End date (YYYY.MON.DD)
 End time (hh:mm)

Details of Longline Setting

Number of Baskets/Magazines Set
 Number of hooks per Basket/Magazine
 Percentage hooks baited
 Distance between branches (m)
 Distance of hooks off bottom (m) (optional for pelagic longline)
 Bait species (FAO species code)
 Deck lights during setting (On, Off)
 Streamer lines used (Yes, No)
 Number of streamer lines used
 Offal dumping during setting (Yes, No)
 Bait entry position (Port, Starboard, Stern)
 Clip on Interval (seconds)
 Setting Speed (Line setter)

Daily hauling observations

Set number
 Date of observation (YYYY.MON.DD)

Hauling Information

Number of hooks observed for seabird and fish bycatch (tally period)
 Offal dumped during hauling (Yes / No)

Interactions with marine mammals

Data is to be collected in accordance with the protocol set out in annex E. For each haul and each species of depredating whales (killer whales *Orcinus orca* and sperm whales *Physeter*

macrocephalus):

- Priority 1 data to be collected include:

1. Presence/absence data: Presence / Absence / Not observed;
2. When presence, photo-identification data: photographs of specific body parts (for killer whales: dorsal fin, saddle patch and eye patches; for sperm whales: tail flukes) visible when whales come to the surface.

- Priority 2 data to be collected include:

1. Estimates of the number of individuals present around the vessel in the vicinity of the fishing gear.

- Priority 3 data to be collected include:

1. Information about whether or not whales interact with the gear;
2. Estimate of the time of arrival of whales in the vicinity of the gear.

Gear lost

Number of sections lost

Number of hooks lost that were attached to lost sections of the longline

Number of other hooks lost (excluding hooks attached to lost sections)

Was Haul observed for fish/invertebrate bycatch (Y/N):

Estimate percentage of the haul observed for bycatch (%)

For Trapping/Potting Fishing Activities ONLY**Trap/Pot type (with drawing)**

Mesh size (mm)

Material

Funnel position

Orientation

Aperture (cm)

Number of chambers

Escape port present (y/n)

Dimensions (cm) of escape port

Weights attached?

Min Weight (kg)

Max Weight (kg)

Set and haul details

Set Number

Bycatch Mitigation Gear used (Y/N)

Bycatch Mitigation Gear 1 ID

Bycatch Mitigation Gear 2 ID

Bycatch Mitigation Gear 3 ID

Date of observation (YYYY.MON.DD)

Set Type: Research or Commercial (R/C)
 Target species (FAO species code)
 Offal dumped during setting (Yes / No)
 Offal dumped during hauling (Yes / No)

Start and End setting. Repeat for hauling

Date (YYYY.MON.DD)
 Time (:mm)
 Latitude
 Longitude
 Bottom depth (m)

Gear Details

Length of line (m)
 Type of line
 Trap/Pot spacing (m)
 Bait type

Setting

Number of pots/traps set
 Number of pots/traps observed

Hauling

number of pots/traps hauled
 number of pots/traps observed

Was Haul observed for fish/invertebrate bycatch (Y/N):
 Estimate percentage of the haul observed for bycatch (%):

For Dahn/Drop lining activity ONLY

Dahn/Dropline Description

Line Type
 Period in which the gear was used () Start and end date
 Target species (FAO species code)

Main Line

Material
 Diameter (mm)
 Integrated weight (g/m)

Hooks

Type (e.g.: J shaped, Circular, etc.)
 Manufacturer
 Marking (leave blank for none)
 Model name
 Size (mm)
 Shank (mm)
 Gape (mm)
 Usual setting position
 Line off bottom (m)
 Hooks off bottom (m)

Method of baiting (manual/automatic)
Automatic baiting equipment (make and model)

Offal

Offal dumping position (port, starboard, stern)
Offal dumping during hauling (never, occasionally, always)
Propeller rotation direction (clockwise/anti-clockwise)

Details of Dahn/Dropline Setting

Bycatch Mitigation Gear used (Y/N)
Bycatch Mitigation Gear 1 ID
Bycatch Mitigation Gear 2 ID
Bycatch Mitigation Gear 3 ID

Main line length (m)
Number of hooks set
Percentage hooks baited
Distance between branches/snoods (m)
Distance of hooks off bottom (m)
Bait species
Bait size
Bait proportion
Deck lights during setting (On, Off)
Streamer lines used (Yes, No)
Number of streamer lines used Offal dumping during setting (Yes, No)
Daylight period
Moonlight
Bait entry position (Port, Starboard, Stern)
Vessel setting speed (knots)

Start and End setting. Repeat for Start and End of hauling

Date (YYYY.MON.DD)
Time (hh:mm)
Latitude
Longitude
Bottom Depth (m)

Gear lost

Number of sections lost
Number of hooks lost that were attached to lost sections of the dahn/dropline
Number of other hooks lost (excluding hooks attached to lost sections)

Was Haul observed for fish/invertebrate bycatch (Y/N):
Estimate percentage of the haul observed for bycatch (%)

Handline fishing activity

Handline Description

Main Line

Material
Diameter (mm)

Hooks

Type (e.g.: J shaped, Circular, etc.)

Manufacturer

Marking (leave blank for none)

Model name

Size (mm)Shank (mm)

Gape (mm)Usual setting position

Line off bottom (m)

Hooks off bottom (m)

Offal

Offal dumping position (port, starboard, stern)

Offal dumping during hauling (never, occasionally, always)

Propeller rotation direction (clockwise/anti-clockwise)

Details of Handline Operation

Target species (FAO species code)

Operation type: Research or Commercial (R/C)

Bycatch Mitigation Gear 1 ID

Bycatch Mitigation Gear 2 ID

Bycatch Mitigation Gear 3 ID

Number of fishers operating handlines

Number of line lifts per fisherman (average)

Number of hooks per line

Percentage hooks baited

Bait species

Bait size

Bait proportion

Deck lights during setting (On, Off)

Start and End time of operation.

(An operation is a defined period of fishing between start and end date)

Date (YYYY.MON.DD)

Time (hh:mm)

Time Start (YYYY.MON.DD hh:mm)

Time Finish (YYYY.MON.DD hh:mm)Operation Latitude

Operation Longitude

Bottom Depth (m)

Gear lost

Number of hooks lost

Was Haul observed for fish/invertebrate bycatch (Y/N):

Estimate percentage of the haul observed for bycatch (%)

Squid Jigging operation details:

Squid Jigging (operation) Number

Observed (Yes/No)

Target Species (FAO species code)

Time Start (YYYY.MON.DD hh:mm)

Time Finish (YYYY.MON.DD hh:mm)

Latitude of operation

Longitude of operation

Number of fishers

Number of jigging machines

Fishing duration by hand (h)

Fishing duration by machine (h)

Fish lamp used during fishing (Y/N)

Lighting

Total Power of fish lamp (kW)

Lamp Type (e.g. Metal Halide Lamp or LED)

Total power of underwater lamps (kW)

Total power of above sea level lamps (kW)

Lighting duration (hours) on underwater lamps and above sea level lamps, respectively

Sea Surface Temperature (°C) (where possible)

Was fishing observed for fish/invertebrate bycatch (Y/N):

Estimated percentage of the operation observed for fish/invertebrate bycatch (%)

For Light seining activity ONLY

Type of light seining gear

FAO Gear code: SV-boat seine (02.2), LNB-boat-operated-liftnet (05.2) and FCN cast net (06.1)

Target species (FAO species code)

Observed (Yes/No)

Lighting

Total Power of fish lamp (kW)

Lamp Type (e.g. Metal Halide Lamp or LED)

Total power of underwater lamps (kW)

Total power of above sea level lamps (kW)

Lighting duration (hours) on underwater lamps and above sea level lamps, respectively

Time Start fishing (YYYY.MON.DD hh:mm)

Time End fishing (YYYY.MON.DD hh:mm)

Latitude Start fishing

Longitude Start fishing

Lighting used during fishing (Y/N)

Maximum submergence depth of the net (m)

Was Haul observed for fish/invertebrate bycatch (Y/N)

Estimated percentage of the observed for fish/inverts bycatch (%)

Annex C

Specifications for the Exchange of Data

1. Coordinated Universal Time (UTC) shall be used to describe times, using the following submission format: YYYY-MON-DDThh:mm:ss where:

- a. YYYY - represents a 4-digit year e.g. "2007"
- b. MON - represents a 3-character month abbreviation e.g. "APR"
- c. DD - represents a 2-digit day e.g. "05"
- d. T - is a space separator
- e. hh - represents hours based on the 24hr clock (length = 2 digits) e.g. "16"
- f. mm - represents minutes (length = 2 digits) e.g. "05"
- g. ss - represent seconds (length = 2 digits) e.g. "00"

Example: 2003-JUL-17T13:10:00 = 1.10pm (1310h), 17 July 2003

2. Coordinates are to be used to describe precise locations and the following standards shall be used:

Degrees minutes seconds (DD°MM'SS'') or Degrees minute decimal (DD°MM.XX) or Decimal degrees (DD.XXXX)

Add N or S to indicated North or South for latitudes. Add E to indicate the Eastern longitude (the SIOFA Area is always in the Eastern longitudes), for decimal degrees, add minus for southern latitudes.

Examples:

Latitude= 42°37'06'' S Longitude= 48°03'58'' E

Latitude= 35°09.70'' S Longitude= 51°12.94''

Latitude= -10.0386 Longitude= 61.7088

3. Metric units of measure be used, specifically:

- a. kilograms are to be used to describe catch weight
- b. Metres are to be used to describe height, width, depth, beam, or length
- c. Cubic metres are to be used to describe volume
- d. Kilowatts are to be used to describe engine power

Annex D

Role and tasks of the scientific observer

1. The function of scientific observers on board vessels engaged in harvesting of marine living resources is to independently observe and report on the operation of fishing activities in the SIOFA Area.
2. In fulfilling this function, scientific observers will undertake the following tasks:
 - a. Record details of vessel operations, including inter alia, times of, searching, fishing, transit etc., and details of hauls;
 - b. Take biological samples of catches;
 - c. Record biological data of species caught;
 - d. Record bycatch information, such as species, quantity, and other biological data [as specified in Annex B]
 - e. Record interactions with seabirds, marine mammals, and marine reptiles
 - f. Record information on catch including data relating to processed conversion factors;
 - g. prepare reports of their observations for their respective national authorities;
 - h. collect and report data on sightings fishing vessels, unmarked fishing gear, and recovery of fishing gear in the SIOFA Area, including vessel type identification, vessel position and activity and gear type;
 - i. collect information on fishing gear loss and waste disposal by the fishing vessels at sea.

Annex E

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

Priority 1 Data to be collected

Presence

For every haul and for each species:

Haul	Fish Waste discharge	Presence ?	Comment
1	Yes/No	Absent	
2	Yes/No	Present	
3	Yes/No	Present	Night-time, but clearly see them in projectors
4	Yes/No	Not observed	Night-time, can't see them but can't say they are not present around.

Requirement: data mandatory and must be collected for every haul.

“Presence”: Favourable conditions (visibility is at least several hundred meters with sufficient light) and observation by the observer (observer can be alerted by the crew when whales are sighted). The presence of whales is confirmed by direct observation of at least one individual at the surface in the vicinity of the vessel at least once during 1 haul. Note that presence can also be observed at night when killer whales come very close to the boat.

“Absence”: Favourable conditions and no odontocete spotted at any time during the entire haul.

“Not observed” is used either if the observer did not have time to gather information (e.g. if line broke), or if conditions are too bad to observe (either weather conditions, or hauling at night).

Photos

For every haul and for each species:

Haul	Presence?	Photos?	Comment
1	Absent	No	
2	Present	Yes	
3	Present	No	Night-time: too dark for pictures
4	Not observed	No	Night-time: too dark for pictures

Requirement: data mandatory and must be collected for every haul.

With this additional field, observers indicate whether they took pictures of whales for photo-identification purposes or not during the haul of the set.

Priority 2 Data to be collected**Number of individuals**

For every haul and for each species:

Haul	Presence?	minimum	maximum	comment
1	Absent	0	0	
2	Present	15	22	
3	Present	1		At least one but too dark for accurate estimate
4	Not observed			

Requirement: data should be collected for every haul to the extent possible.

Providing exact counts of individuals from the surface may be difficult for observers as whales can dive for long periods of time. To account for uncertainty around counts, observers may fill in two fields:

- Minimum estimate of the number of individuals,
- Maximum estimate of the number of individuals.

Priority 3 Data to be collected**Interaction with fishing gear**

For every haul and for each species:

Haul	Presence?	Interaction with fishing gear?	Comment
1	Absent	No	
2	Present	Yes	Saw them diving close to the line
3	Present	Yes	Head of fish were observed
4	Not observed		

Requirement: data should be collected for every haul to the extent possible.

When Presence, interaction with fishing gear is taken into account if whales are diving close to the lines or directly observed with fish in their mouths.

Estimated Time of Arrival (ETA)

For every haul and for each species:

Haul	Presence?	ETA	Comment
1	Absent	NA	Not applicable
2	Present	0:30	We were able to haul 30 minutes before they arrive
3	Present	0:00	Saw them in projectors even before first hook came on board
4	Not observed	NA	Not applicable

Requirement: data should be collected for every haul to the extent possible.

The Estimated Time of Arrival here corresponds to the time between the first hook of the line hauled on board and the arrival of sperm whales / killer whales. If whales are already present when hauling starts, then ETA is zero.