

## **CMM 02(2025)<sup>1</sup>**

### **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));

**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

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<sup>1</sup> CMM 02(2025) (Data Standards) supersedes CMM 02(2023) (Data Standards).

shall assist the Meeting of the Parties to fulfil its objectives under the Agreement insofar as it relates to assessing the state of the fisheries within SIOFA's competence, including the status of target and non-target species and the impact of fishing on the marine environment.

## **Terminology**

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

## **Vessel Catch and Effort Data**

### *Collection of data*

4. CCPs shall ensure that data on fishing activities, including for target, non-target and associated and dependent species such as marine mammals, marine reptiles, seabirds or 'other species of concern', are collected from vessels flying their flag that are fishing in the Agreement Area in accordance with the relevant sections of Annex A.
5. CCPs shall collect vessel catch and effort data on a haul-by-haul basis, with the exception of handline fishing, where CCPs shall collect vessel catch and effort data on an operation <sup>2</sup> 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. FAO87)
  - c. Species/group name (common name and scientific name)
  - d. Species/group code (FAO3-alpha code 19, EG ORY) (if available)
  - e. Annual catch total - tonnes raised to 'live' weight.
8. To assist in data collection CCPs engaged in, or intending to engage in, fishing pursuant to CMM 01(2025) shall implement on-board all fishing vessels flying their flag the FAO Identification guide to the deep-sea cartilaginous fishes of the Indian Ocean<sup>3</sup>. 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

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<sup>2</sup> 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.

<sup>3</sup> 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

accordance with the following:

- a. For the first report: the National Report shall include details of activities of the previous five calendar years;
- b. For all reports thereafter: the National Report shall include details of activities of the previous calendar year; and
- c. In either case, the National Report shall take into account the guidelines prepared by the Scientific Committee for the preparation of such reports.

#### *Historical Data*

10. To assist with the development of a bottom fishing footprint and stock assessments, each CCP shall provide the Secretariat with all historical catch and effort, and if available observer data for vessels flying their flag and fishing in the Agreement Area at any time during period 2000-2015 and any previous years where available in accordance with annex A and annex B to the extent applicable. Any State or fishing entity that becomes a Party to the Agreement, a CNCP or PFE after the date this CMM is adopted shall provide their historical data to the Secretariat within 12 months of becoming Party to the Agreement, or becoming a CNCP or PFE.
11. Where possible, CCPs are encouraged to provide relevant, reliable historical data for species caught in waters under their national jurisdiction where such information would assist in understanding the status of the stocks and the impacts of fishing on all target species, non-target and associated and dependent species and the marine environment within the Agreement Area.

#### **Scientific Observer Data**

12. All CCPs shall implement national scientific observer programs to collect from activities undertaken by vessels flying their flag:
  - a. Vessel information, effort and catch data for its fishing activities in the Agreement Area, including target, non-target and associated and dependent species including marine mammals, marine reptiles, seabirds or 'other species of concern';
  - b. Biological or other data and information relevant to the management of fishery resources in the Agreement Area, as specified in this CMM, or as identified from time to time by the Scientific Committee or through processes identified by the Meeting of the Parties; and
  - c. Relevant scientific information related to the implementation of the provisions of the CMMs adopted by the Meeting of the Parties.
13. The function and tasks of the scientific observer are described in Annex D.
14. CCPs shall, through their National Report, provide to the Scientific Committee an annual observer programme implementation report which should include summary sections covering: observer training, program design and coverage, type of data collected, and any problems encountered during the previous calendar year.
15. CCPs shall, for all observed trips, collect observer data in accordance with the relevant sections of Annex B. All observer data collected by CCPs shall be reported to the Secretariat by 31 May each year for the previous calendar year.
16. By 2023, the Scientific Committee shall develop and adopt a template for the observer reports, and a template for an observer data collection form that may be used by observers in subsequent years.
17. By 2023, the Meeting of the Parties, based on recommendations from the Scientific Committee and the Compliance Committee shall adopt a SIOFA framework for scientific

observation clarifying all the aspects related to the role.

## **Data Verification**

18. CCPs shall:

- a. ensure that fishery data are verified through an appropriate system of data verification mechanisms;
- b. develop, implement, and improve data verification mechanisms, which may include:
  - i. Position verification through vessel monitoring systems;
  - ii. Independent monitoring, including scientific observer programs and approved electronic observer programs,<sup>4</sup> 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;<sup>5</sup>
- c. Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes;<sup>6</sup> and
- d. Types of fishing vessels are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes.<sup>7</sup>

## **Review**

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

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<sup>4</sup> 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.

<sup>5</sup> <https://www.fao.org/fishery/en/collection/asfis/en>

<sup>6</sup> <https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/>

<sup>7</sup> <https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/en/>

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

## **List of Annexes:**

**Annex A - Vessel Catch and Effort Data**

**Annex B - Observer Data**

**Annex C - Specifications for the Exchange of Data**

**Annex D – Function and tasks of the scientific observer**

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

## 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:

<b>Data Set - Fishing activities General (Trip)</b> 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
<b>Weight Conversion Factor</b> Species Processing type Conversion factor = live weight/processed weight
<b>Haul Information</b> Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
<b>Set Start date and Time</b> (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)
<b>Position at start and end of fishing</b> 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
<b>Bottom Depth (m)</b> As recorded at the start and end of fishing.
<b>Fishing / gear depth (m)</b> As recorded at the start and end of fishing. For trapping/potting, Actual Fishing / gear depth (m) as recorded at start is required.
<b>Species retained</b> Estimated catch retained on board by taxa (FAO species/group code/scientific name) in green weight (kg).
<b>Species Discarded</b>

An estimation of the amount of living marine resources discarded by taxa, if possible, in green weight (kg)
<b>Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern'</b> Presence: Yes / No For each species caught <ul style="list-style-type: none"> <li>• Taxa name</li> <li>• Number alive</li> <li>• Number dead or injured</li> </ul>
<b>Incidental bycatch of VME indicator taxa</b> Presence: Yes / No For each species caught <ul style="list-style-type: none"> <li>• Taxa name</li> </ul>

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

<b>Data Set - Fishing activities General (Trip)</b> Vessel flag <b>CCP</b> (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
<b>Weight Conversion Factor</b> Species Processing type Conversion factor = live weight/processed weight
<b>Haul Information</b> Intended Target species (FAO code) Type of fishing (C)ommercial; (R)esearch; (S)urvey data Haul ID number
<b>Set Start date and Time</b> (Based on Coordinated Universal Time (UTC)) Recorded at start of fishing Date format (YYYY.MON.DD) Time format (hh.mm)
<b>Position at start of fishing</b> Latitude Longitude
<b>Species retained</b> Estimated catch retained on board by taxa (FAO species/group code/scientific name) in live weight (kg)
<b>Species Discarded</b> An estimation of the amount of living marine resources discarded by taxa, if possible, in live weight (kg)
<b>Incidental bycatch of marine mammals, seabirds, reptiles and 'other species of concern'</b> Presence: Yes / No For each species caught <ul style="list-style-type: none"> <li>• Taxa name</li> <li>• Number alive</li> <li>• Number dead or injured</li> </ul>

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.

<b>Data Set – Gear</b>
<b>Trawl</b> Cod end mesh Size (mm) Trawl technique: Type of trawl: (S)ingle, (D)ouble or (T)ripple
<b>Demersal Longline</b> 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)
<b>Pelagic Longline</b> 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)
<b>Trap/Pot</b> 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
<b>Dahn/Drop Line/</b> 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



<b>Data Set – Gear</b>
<b>Handline</b> Number of fishers involved Number of lines per fisher Number of hooks per line
<b>Squid Jigging</b> Power of fish lamp (kw) Use of the fish finder (Y/N) Number of fishers Number of line machines Fishing duration by hand (h) Fishing duration by machines (h) Number of hooks on per line

## 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**

<b>Data Set - Observer data</b>
<b>Trip Details</b>  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)

<p>Seabirds present in observation area? (Yes/No/Not Observed)</p> <p>Species</p> <p>Estimated numbers of abundance (by species)</p> <p>Operation ID (Set ID, tow ID)</p> <p>Marine Mammals present in observation area? (Yes/No/Not Observed)</p> <p>Species</p> <p>Estimated numbers of abundance (by species)</p>
<p><b>Observed catch</b> (to be recorded for each operation and for all gears/fisheries, record weight or number according to the fishery)</p> <p>Operation ID (Set_ID, Tow_ID)</p> <p>Observer ID</p> <p>FAO ASFIS Species code</p> <p><i>Species retained</i></p> <p>Total Number retained</p> <p>Weight retained (kg)</p> <p><i>Species discarded</i></p> <p>Total Number discarded</p> <p>Weight discarded (kg)</p> <p>Number discarded alive</p> <p>Number discarded dead</p> <p>Number or weight of fish lost (if applicable)</p> <p>Number or weight of fish cut off (if applicable)</p> <p>Number of fish depredated (if applicable)</p> <p>Comments</p>
<p><b>Incidental bycatch of ETP species (seabirds, mammals, turtles or 'other species of concern')</b></p> <p>The following data shall be collected for all seabirds, mammals, turtles, and other species of concern caught in fishing operations as much as possible:</p> <ul style="list-style-type: none"> <li>• Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult) and size</li> <li>• Estimated species abundance around fishing vessel</li> <li>• Species interactions with fishing gear</li> <li>• Count of the number of each species caught per tow or set</li> <li>• Fate of bycatch animal(s) (retained or released/discarded)</li> <li>• If released, life status (vigorous, alive, lethargic, injured, dead) upon release</li> <li>• If injured, what was the cause of injury?</li> <li>• 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 <ul style="list-style-type: none"> <li>◦ Record the type of interaction (hook/line entanglement/warp strike/net capture/other) if other, describe</li> </ul> </li> <li>• Sex of each individual for taxa where this is feasible from external observation, e.g. pinnipeds, small cetaceans or <i>Elasmobranchii</i> species</li> <li>• identify any circumstances or actions that may have contributed to the bycatch</li> </ul>

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 (m<sup>3</sup>)) 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 (m<sup>3</sup>)) 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)

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

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

Species:

~~FAO species code~~

~~Scientific name~~

~~Estimated retained catch weight (kg) or number of individuals~~

~~Estimated discarded catch weight (kg) or number of individuals~~

## 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

### 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.

## 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.