# IOTC DATA SECTION ACTIVITIES AND FOLLOW-UP ON DATA-RELATED REQUESTS AND RECOMMENDATIONS

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## Purpose

To provide the WPDCS with an overview of the Data Section's activities in 2026 and progress in responding to data-related requests from IOTC meetings and recommendations from WPDCS21.

The WPDCS is invited to:

1. **NOTE** the activities undertaken by the Data Section during 2026, including technical assistance missions, workshops and data management work.
2. **REVIEW** the data-related requests arising from other IOTC meetings, as compiled in Appendix IV, and **CONSIDER** appropriate follow-up actions and recommendations.
3. **NOTE** progress in addressing the recommendations from WPDCS21, as detailed in Appendix V.
4. **CONSIDER** priorities for further technical assistance, data reporting and data management, and provide guidance to the Secretariat as appropriate.

## Abstract

During 2026, the IOTC Data Section conducted five in-country technical assistance missions and organised three workshops to support CPCs in fisheries data collection, processing and reporting. Alongside the preparation and dissemination of datasets for IOTC scientific and technical meetings, the Secretariat continued to develop reporting and validation tools, modernise databases and improve data management and dissemination services. These activities were complemented by cooperation with partner organisations and work supported through externally funded projects. This paper summarises the main activities undertaken, data-related requests referred to the WPDCS and progress on recommendations from WPDCS21, with supporting information provided in the appendices.

# Introduction

The Data Section of the IOTC Secretariat manages, validates and disseminates fisheries data submitted by Contracting Parties and Cooperating Non-Contracting Parties (CPCs), and prepares datasets and supporting information for IOTC Working Parties and the Scientific Committee. It also provides technical assistance to strengthen national data collection, processing and reporting in accordance with IOTC requirements.

This paper provides an overview of the Data Section's activities in 2026, including capacity development, data management and collaboration with partner organisations. It also summarises data-related requests from IOTC meetings and progress on recommendations from WPDCS21. Supporting information is presented in the appendices.

# Capacity Development Activities

The Secretariat's capacity development activities are guided by requests for technical assistance from CPCs, priorities identified through the review of national data submissions, and recommendations arising from IOTC scientific meetings. These activities aim to strengthen national capacities for fisheries data collection, processing and reporting, and to support the implementation of IOTC reporting requirements.

During 2026, the Data Section conducted five in-country technical assistance missions and organised three data-related workshops, including one online seminar. It also participated in external technical meetings and workshops. A consolidated record of these activities, including dates, counterparts and short descriptions, is provided in Appendix I.

Detailed descriptions of the in-country missions and workshops and meetings are provided in Appendix II and Appendix III, respectively.

## In-Country Missions

In 2026, the Secretariat conducted five technical assistance missions to Comoros, Kenya, Madagascar, Oman and Tanzania. These missions combined reviews of national fisheries data collection and management systems, technical discussions and practical support for implementing IOTC reporting requirements. They also provided opportunities to identify priorities for continued collaboration and capacity development.

## Virtual Technical Meetings

The Data Section also maintained technical exchanges with CPCs to clarify reporting requirements, review submissions and follow up on ongoing data improvement activities (Appendix I).

## Technical Workshops

To support further progress in the implementation of the IOTC Regional Observer Scheme (ROS), the Secretariat organised three capacity-building workshops in 2026, focusing on data collection and reporting requirements for purse seine, longline and gillnet fisheries. These workshops aimed to strengthen CPCs' understanding of reporting requirements, promote the use of standardised reporting forms and improve the quality and completeness of observer data.

Summaries of the workshops are provided in Appendix I, with further details in Appendix III. Reports of the purse seine and longline workshops are available on their respective meeting webpages, while the report of the gillnet workshop is under preparation.

### Participation in External Meetings and Workshops

The Data Section participated in technical exchanges concerning EU data reporting and coordination, the Indian Ocean shark research plan, bycatch data, and abandoned, lost or otherwise discarded fishing gear (ALDFG), among other subjects. These activities supported dialogue on data requirements, harmonisation and data quality.

## Data Management Activities

In addition to its regular responsibilities for validating, processing, maintaining and disseminating fisheries data, the Data Section prepared datasets and supporting information for IOTC scientific and technical meetings throughout 2026, including TCAC16, WPICMM09, WPSE03, WGFAD08, WPTT28 (data preparatory and assessment sessions), WPNT16, WPB24, WPEB22, TCAC17 and WPDCS22. Alongside this recurrent work, the Secretariat continued to improve reporting tools, data validation, databases and online information services.

### Data Reporting

The Secretariat updated the guidelines for reporting fisheries statistics and developed guidelines for Regional Observer Scheme (ROS) data. Reporting forms are increasingly managed through a dedicated GitHub repository, supported by revised form descriptions, including an updated Form 7PR. Proposed amendments to Form 1RC to implement Resolution 26/06 are described in IOTC-2026-WPDCS22-05. The IOTC Reference Data Catalogue was also further developed, including standardised descriptions and code lists.

### Data Validation

Online validation tools are available for statistical reporting Forms 1DI, 1RC, 3BU, 3CE and 4SF, with associated development resources maintained in the IOTC form-management repository. Work continued on validators for Form 3DA and ROS reporting forms, including the use of the *vrule* R package to implement standardised validation rules. The validators are being migrated to FAO cloud infrastructure through the IOTC Shiny App Catalogue, while further tools are planned for Forms 2FC, 3AA, 5MB and 7PR.

Further progress was made in modernising the Regional Observer Scheme (ROS) data processing and validation framework, with support from a dedicated consultancy under SWIOP (see below). This included the development and publication on CRAN of the R package form.model, which provides a standardised framework for describing versioned reporting forms, their structure, constraints and reference data requirements. Complementary R-based tools and procedures were developed to automate the extraction and validation of ROS submissions, including an initial assessment of 171 historical Version 3 files. This work provides the foundation for extending validation to Version 4 forms, improving interoperability with national systems and developing standardised data-loading and validation workflows.

### Data Management and Dissemination

The Data Section continued the annual processing and quality review of fisheries datasets, including work on discard and ROS data (see IOTC-2026-WPDCS22-10). Developments also included the migration of databases to a PostgreSQL/PostGIS environment, improvements to reproducible data-processing workflows, and publication and dissemination of datasets and associated documentation.

Persistent identifiers and records are being developed through the IOTC Zenodo Community, covering data-related Conservation and Management Measures, fisheries statistics and ROS reporting forms, and IOTC code lists. DOI-based publication of nominal catch and tagging datasets remains in progress.

### Tools and Online Services

In preparation for the new IOTC website, the Secretariat reviewed the organisation of data-related web content around six areas: **Reporting**, **Regional Observer Scheme**, **Datasets**, **Tools**, **Data Services and Repositories**, and **Publications**. Development of the Tools area and migration of online services are ongoing.

### Scientific Projects

Two externally funded projects – the EU-funded project supporting the Scientific Committee's Programme of Work (**EC1350**) and the **Sustainable Western Indian Ocean Programme (SWIOP)** – provide additional support for fisheries data management, biological sampling and scientific capacity development. Their activities include modernisation of information systems, improvements to coastal fisheries data collection and processing, harmonisation of biological sampling, and regional training. The principal data-related components are summarised in Appendix VI.

## Data-Related Requests from Other IOTC Meetings

The IOTC Working Parties (WPs) and the Scientific Committee (SC) identify data requirements relevant to stock assessments, fisheries monitoring and reporting. Addressing these requests may involve direct exchanges with CPCs, targeted reviews of existing datasets, and the development of reporting or validation procedures.

A total of 24 data-related requests arising from the 28th session of the SC and other IOTC meetings have been referred to the WPDCS for consideration. These requests are compiled in **Appendix IV** for review by the WPDCS, including the identification of appropriate follow-up actions and recommendations.

## Progress Made on Recommendations from WPDCS21

The Secretariat reviewed the recommendations from the 21st session of the WPDCS and the subsequent consideration and follow-up by the Scientific Committee and Commission. The recommendation-by-recommendation record, including relevant meeting references and implementation status, is presented in Appendix V.

## Conclusions

The Data Section's activities in 2026 combined the routine processing, validation and dissemination of fisheries datasets with targeted technical assistance to CPCs, capacity-building workshops and continued development of reporting tools and information systems. These activities supported the implementation of IOTC reporting requirements, the preparation of datasets for scientific assessments and technical meetings, and improvements in data quality and management procedures.

Further work will focus on strengthening national data collection and reporting capacities, developing standardised validation and processing workflows, modernising information systems and addressing outstanding data-related requests from IOTC scientific and technical bodies. The activities supported through EC1350 and SWIOP will contribute to these priorities in the coming years.

# Appendix I: Main Activities of the Data Section in 2026

**Tab. A1:** Summary of data section activities held in 2026

| Category | Country / CPC | Mode | Dates | Summary |
|---|---|---|---|---|
| Capacity Building Workshop | Seychelles | In-country | 16-19 Mar | The workshop brought together 18 participants from six CPCs to review statistical and ROS reporting requirements for purse seine fisheries. Discussions focused on reporting forms, validation tools, national workflows and opportunities to improve data quality |
| Technical Assistance Mission | Comoros | In-country | 05-11 Apr | The mission reviewed national fisheries data collection, processing and management systems, including developments undertaken through previous projects. It identified opportunities to strengthen data processing and reporting, including potential activities under EC1350 |
| | Tanzania | In-country | 21-25 Apr | The mission reviewed progress in reconstructing historical coastal fisheries catches and harmonising national fisheries data management systems. Technical discussions also addressed industrial fisheries reporting requirements and priorities for further collaboration |
| | Kenya | In-country | 26-29 Apr | The mission provided technical guidance and training on IOTC reporting requirements and tools, including e-MARIS and ROS reporting. Discussions also covered the development of an integrated national fisheries data management system and opportunities to improve historical data and reporting |
| Capacity Building Workshop | South Africa | In-country | 26-29 May | The workshop brought together 12 participants from eight CPCs to review ROS reporting requirements for longline fisheries. Discussions focused on standardised reporting forms, historical data gaps, electronic monitoring and validation tools |
| External Meeting | European Union | Virtual | 23-25 Jun | The Secretariat presented IOTC data requirements and reviewed the status of EU fleet data reporting, highlighting outstanding gaps and inconsistencies. Discussions also addressed ongoing developments in reporting forms, validation procedures and collaboration with EU scientific institutes |
| External workshop | Spain | In person | 30 Jun - 2 Jul | The workshop examined data and management challenges associated with small- and large-scale tropical tuna fisheries. The Secretariat presented the IOTC experience, including challenges in classifying small-scale fisheries and harmonising reporting requirements |
| | South Africa | In person | 28-30 Jul | The Secretariat contributed to the review of available shark fisheries data and the identification of priority data gaps. Discussions informed a research roadmap addressing species-level reporting, data collection, biological information and capacity development |
| Technical Assistance Mission | Madagascar | In-country | 24-27 Aug | The mission reviewed fisheries data collection, sampling and management systems through technical discussions and field visits. Priority areas for further cooperation included sampling strategies, standardised procedures, electronic data management and capacity development |
| External Meeting | European Union | Virtual | 22 Sep | The Secretariat presented IOTC reporting requirements and the status of EU fleet data submissions, with particular attention to bycatch and discards. Discussions addressed data quality, validation and opportunities for closer collaboration with EU data providers |
| Technical Assistance Mission | Oman | In-country | 28 Sep - 2 Oct | The mission reviewed fisheries data collection and reporting systems through technical discussions, field visits and practical training. Follow-up priorities included catch estimation methods, species identification, sampling procedures and integrated data management |

| Category | Country / CPC | Mode | Dates | Summary |
|---|---|---|---|---|
| External Meeting | ICCAT | Virtual | 1 Oct | The Secretariat participated in technical exchanges on bycatch data collection and reporting, including observer data, species identification and reporting standards. Discussions provided an opportunity to share experiences and approaches across tuna RFMOs |
| | FAO/SEAFDEC | Virtual | 14 Oct | The Secretariat participated in technical webinars reviewing existing frameworks for reporting abandoned, lost or otherwise discarded fishing gear (ALDFG). Discussions explored opportunities to harmonise data collection and reporting procedures in support of regional guidelines |
| Capacity Building Workshop | Seychelles | Virtual | 3-4 Nov | The online seminar reviewed ROS data collection requirements and existing national initiatives for gillnet fisheries, including crew-based observer programmes. Discussions explored alternative approaches to improving observer data collection and reporting across CPCs |

# Appendix II: 2026 IOTC Technical Assistance Missions

In 2026, the IOTC Secretariat conducted five technical assistance missions to Comoros, Kenya, Madagascar, Oman and Tanzania, in response to requests from CPCs and priorities identified through IOTC scientific meetings and the review of national data submissions. The missions provided opportunities to review national fisheries data collection and management systems, assess progress in implementing IOTC reporting requirements, and provide technical guidance and training to national counterparts. They also helped identify priorities for continued collaboration and capacity development, as summarised in the following sections.

## Tanzania

**Background and Objectives**

The mission was conducted over three days with the participation of representatives from key ministries and relevant stakeholders, including Deep Sea Fishery Authority (DSFA), Ministry of Blue Economy and Fisheries (MBEF), Ministry of Livestock and Fisheries (MLF), and Nelson Mandela African Institution of Science and Technology (NM-AIST). As the reconstruction and harmonisation of fisheries datasets required information from multiple departments and agencies, close inter-institutional collaboration was necessary to compile, validate, and reconcile the available data.

The main objectives of the mission in Tanzania were to:

1. review the proposed methodology for the historical catch reconstruction of artisanal fisheries;
2. assess the progress made in implementing harmonised fisheries data management processes among the different entities; and
3. provide feedback on the latest submission, with a focus on industrial fisheries data reporting requirements.

The Secretariat was presented with Tanzania's implementation plan and proposed methodology for reconstructing historical catches from coastal fisheries. This exercise aims to address potential underestimation of catches in the IOTC databases resulting from fragmented data collection systems. The Deep Sea Fishing Authority (DSFA) plans to undertake a desk-based review of historical information, in collaboration with the Sea Around Us Project and the Nelson Mandela African Institution of Science and Technology (NM-AIST), to identify and consolidate relevant datasets. Landing-site sampling is also planned to support the validation of reconstructed catch estimates.

In parallel, Tanzania is working towards harmonising the fisheries data management systems currently maintained by different ministries and departments, with the objective of developing an integrated national fisheries information platform serving as a central repository for fisheries data.

**Main findings and Priority Actions**

The activities presented by Tanzania are at an early stage and require further review. However, the involvement of relevant stakeholders in the implementation process is beneficial

The follow-up actions and recommendations:

- assess the key issues affecting fisheries data reporting and identify measures to improve compliance with reporting requirements;
- ensure submission of datasets using the appropriate reporting forms and validate the associated coding systems, particularly for DFAD data;
- strengthen liaison with vessel owners and relevant fisheries authorities, including the SFA, to improve the collection of size-frequency data;
- evaluate and consolidate existing catch datasets as part of the reconstruction and data harmonisation process;

- reconstruct previous Regional Observer Scheme (ROS) information using observer reports and the official IOTC ROS reporting forms, and correct specific issues in the 2024 submission, accordingly, including E-SET-CATCH-SPECIMENS-SSI datasets;
- continue reviewing the harmonisation process across the various fisheries data collection systems, including the incorporation of data raising procedures appropriate for Tanzanian fisheries into the new processing framework;
- ensure the provision of adequate and continuous training for fisheries officers to support sustainable data flow and implementation following harmonisation of the new system;
- reorganise and refine the presentation on the catch reconstruction exercise for submission and discussion at WPDCS22; and
- request the IOTC Secretariat to provide any additional datasets or information that may support the catch reconstruction process.

## Kenya

**Background and Objectives**

This two-day workshop was conducted to review data reporting gaps and strengthen the capacity of officers from the Kenya Fisheries Service (KeFS), in response to ongoing challenges in completing both statistical data submissions and Regional Observer Scheme (ROS) reporting forms.

The main objectives of the mission to Kenya were to:

- review the challenges faced by Kenya in reporting fisheries data;
- provide guidance on the various IOTC reporting tools;
- provide training on data submission through the e-MARIS system;
- follow up on the development of the national fisheries management system.

In addition to the training sessions, Kenya provided an update on the development of the Kenya Fisheries Management Platform, which was first presented in 2025. The platform continues to be progressively developed and is intended to integrate data from multiple fisheries information systems, including coastal fisheries Catch Assessment Survey (CAS) data, logbook data, frame survey data, and industrial fisheries datasets. Once fully operational, the system is expected to improve data management, facilitate data validation and reporting, and enhance the overall quality and accessibility of fisheries information.

**Main findings and Priority Actions**

The challenges faced by Kenya are primarily associated with weaknesses in data collection and processing systems, as well as limited human and institutional capacity. These constraints continue to affect the quality, completeness, and timeliness of fisheries data reporting and impede the effective implementation of reporting requirements. Follow-up action and recommendations:

- review the historical datasets for coastal fisheries to improve consistency and reliability of reported data:
  - optimise fisheries data collection processes to maximise sampling effectiveness;
  - strengthen training programmes for enumerators, particularly in fish species identification;
- enhance collaboration with NGOs involved in fisheries sampling and research activities;
- resubmit the 2024 fisheries datasets after addressing identified inconsistencies, including:
  - harmonisation of datasets reported under 1DR, 1DI, and 1RC Forms;
  - consolidation of catch datasets, particularly 1RC and 3CE datasets;
  - separation of purse seine fisheries data by fishing mode;

- completion of 3DA forms using the appropriate reporting codes and species disaggregation procedures;
- strengthen liaison with vessel owners to obtain missing size-frequency data, particularly for purse seine fisheries;
- review and update ROS datasets using the latest reporting formats;
- reconstruct historical ROS observer reports for longline fisheries using the official IOTC reporting forms;
- develop a centralised repository system for the storage and management of ROS data;
- review and update the Drifting Fish Aggregating Device (FAD) management plan using the IOTC template;
- compile and submit data related to chartered vessels in accordance with Requirement 3.2 of the applicable reporting framework.

## Comoros

**Background and Objectives**

The mission was initiated by the Secretariat following the identification of Comoros as a CPC with limited fisheries data processing capacity. The primary objectives were to evaluate current data management practices, identify areas requiring improvement, and support national authorities in strengthening data processing and reporting.

The objectives of the mission were to:

1. Assess the data processing systems of Comoros, including the data collection, storage, and processing mechanisms in use,
2. Follow up on the systems implemented under the World Bank project that concluded in 2021,
3. Identify the most appropriate approaches to improve the existing systems, and
4. Review the data available to assess whether Comoros could be considered as a case-study for the activity focusing on coastal fishery data processing planned under the EU-funded project EC1350.

Limited progress has been made in the development of the Comoros fisheries sector over recent years, and the data processing system established through a joint IOTC-OFCF mission has undergone only minor modifications.

**Main findings and Priority Actions**

- The Secretariat will provide Comoros with information on conversion factors for fish products and the length-weight parameters for shortbill spearfish (*Tetrapturus angustirostris*)
- The last boat frame survey and census was conducted in 2018, in Comoros. Since then, there may have been changes in the number and composition of vessels by type. Comoros is therefore encouraged to undertake a new boat frame survey to update the national boat registry, with a major focus on the motorised vessels
- Update Comoros data in the IOTC databases by the Secretariat using the defined 5 deg x 5 deg grid coding system (i.e., grid code 6210040)
- Work in collaboration with Comoros to develop some R functions to strengthen and update validation and verification procedures for data quality control
- Review available data for the period 2012-2015, including sampling, effort, and catch data held in the national data repository, and evaluate the current sampling strategy, including post-stratification methods
- Re-develop the estimation module with ArtFishR and develop a visualisation and data export tool (Shiny application) under the IOTC project framework

- Potential interest to develop a pilot project using light GPS trackers in collaboration with fishermen to better understand the spatial dynamics of Comorian fishery activities
- Develop an inventory and monitoring system for AFADs, including the potential use of buoys equipped with echo-sounders.

## Madagascar

**Background**

The mission reviewed progress in fisheries data collection, processing and IOTC reporting. Visits and consultations in Tamatave and Antananarivo confirmed that resource constraints, institutional disruption and cyclone damage continue to affect data coverage and continuity. The immediate priority is to consolidate the existing system through achievable sampling requirements, documented estimation methods and secure data management before larger investments are undertaken.

**Main findings**

**Sampling and estimation**. The routine network is geographically unbalanced, with no coverage in the south-west. Numerous fishing units and demanding sample targets place considerable pressure on individual enumerators. Concerns about the 2023 frame survey have led to continued reliance on the 2012 survey and local adjustments. Raising factors and the treatment of unsampled regions, missing periods and fleet changes require documentation and review.

**Data quality and continuity**. Industrial landing weights provide extensive coverage, but should be reconciled with logbooks; discards require separate collection. The closure of the Tuna Statistics Unit in Antsiranana in 2022 disrupted fisheries monitoring, reduced technical capacity and resulted in the loss of access to historical data and processing software. Currently the data collectors rely largely on paper forms and Excel, without systematic secure backups. The paper and excel sheets are not uniform across the country. Any electronic tools used need to provide for all of the IOTC data requirements (i.e., catch, effort and biological sampling).

**Complementary data and biological sampling**. WWF records from southern areas, including time series extending to 2012, could help address geographical and historical gaps after methods and coverage are assessed. Ministry counterparts expressed interest in biological sampling. Practical fin-clip training was provided and equipment left with the Tamatave team, pending formal approval.

**Priority actions**

- Review fishing-unit definitions, geographical coverage and sampling targets against available staff and resources
- Introduce common forms and harmonised species and gear codes linked to local names, supported by identification and measurement training
- Document the raising method through worked examples and prepare standard protocols and reference lists before the next frame survey
- Consolidate current datasets, establish routine backups and inventory historical records for phased recovery
- Pilot sustainable electronic collection with offline entry, validation and secure transfer before progressing towards an integrated national database
- Institutional control of data, documentation and administrator access, together with funded maintenance, should be explicit requirements
- Agree with WWF how compatible records may contribute to national estimates
- Seek formal approval for genetic and morphometric sampling and finalise protocols
- Designate a ministry focal point and train a core group able to retain and share technical skills

- Subject to resources, IOTC follow-up should support sampling design, estimation, standard forms, electronic pilots and biological sampling.

## Oman

**Background and Objectives**

Oman's fisheries data collection and management systems have several recognised limitations that contribute to uncertainty in the data reported to the IOTC. In particular, the nominal catch and catch-effort data show a substantial increase in catches and catch rates in 2020, with both remaining at elevated levels thereafter. The IOTC and its Scientific Committee therefore requested a Secretariat mission to support the review of data collection and processing procedures. Since 2024, Oman has been reviewing and improving these systems to address IOTC reporting requirements and national information needs.

The objectives of the mission were to:

1. Review the updates made by the data and statistics department of the Omani Ministry of Agriculture, Fisheries, and Water Resources (MAFWR) in relation to current IOTC reporting requirements, and identify remaining reporting gaps and bottlenecks;
2. Assess progress in data handling and reporting, particularly the recently developed database for industrial fisheries;
3. Examine the methodologies currently used by the department and identify opportunities to improve reporting to the IOTC;
4. Review port sampling arrangements, including sampling coverage and gaps in data collection;
5. Observe field data collection at selected landing sites together with colleagues from MAFWR's data and statistics department.

**Landing sites visited**

The sites of Qurayyat, Sur and Al Ashkharah were visited to observe landing activities and discuss routine data collection issues with fishers and local ministry officials. Qurayyat serves skiffs from the artisanal fleet, while Sur and Al Ashkharah serve both skiffs and dhows from the artisanal and coastal fleets. The field visits were complemented by discussions at the ministry on data processing procedures and practical training for MAFWR staff on the IOTC reporting forms.

Visits to landing sites

The three sites provided an opportunity to examine data collection under different local conditions. At each site, fish being landed were observed and procedures with local government officials, many of whom were also responsible for collecting the data, were discussed. Each site was in a different governorate. Qurayyat, in the governorate of Muscat, serves as a principal regional landing hub for skiffs. Landing sites within each governorate are organised around a main hub, although catches landed at smaller sites are currently sold locally. Plans are being considered to transport these catches to the main hubs for auction. Observations at the landing sites helped clarify how some collection practices could introduce bias into the subsequent estimates. In particular, the handline category combined at least two distinct types of fishing gear: one used to catch tuna and another used for smaller grouper and snapper species. Treating these as a single category may obscure differences in fishing activity and catch composition. Some cases of species misidentification were also observed during the visits, indicating a need for further training. Discussions at all three sites were open, and local officials made considerable efforts to explain their procedures and answer questions.

Central Fish Market

A visit was also conducted at the Central Fish Market near Muscat, which handles approximately 40 tonnes of fresh fish daily. Fish are transported from landing sites, sorted and checked for quality on arrival, and sold through

an auction system. Priority is given to the domestic market, while exports are subject to specific conditions, including restrictions applying to large tunas. The market and its auction records could provide a complementary source of information for cross-checking fisheries production and trade data. These records appear to be available to MAFWR. However, their integration into the fisheries data workflow and their use in compiling national statistics remain unclear.

**Methodological discussions and findings**

Oman currently uses two databases to manage fisheries data: one for the artisanal and coastal fleets, and another for the industrial fleet operating outside Omani national waters. The artisanal fleet comprises approximately 16,000 skiffs under 8 m in length and an unspecified number of dhows without cabins. The coastal fleet consists of approximately 650 dhows with cabins. The industrial fleet comprises six purse seiners, three longliners and two support vessels. The industrial fisheries database was developed this year, reflecting the relatively recent expansion of this part of the sector. It is currently installed on a single laptop, with wider deployment progressing slowly because of the required security checks. A dedicated computer within the ministry is planned for data entry.

Several reporting issues remain unresolved. Submissions need to be checked each month to ensure that all required catch, Drifting Fish Aggregating Device (DFAD) activity and observer logbooks have been received. Some industrial fisheries data identified as missing by the IOTC cannot be recovered because they were not collected in the original logbooks. Bycatch and discard reporting also require attention, as the longline logbooks do not currently contain this information. Further training is needed, and there are plans to deploy observers on longliners to provide independent verification of reported data.

Reporting coverage for the coastal fleet is particularly limited. Fewer than ten vessels report each month, and these submissions cannot be considered representative of the fleet. Artisanal fisheries data are collected by staff operating within each governorate, but routine collection is limited to landings. Some collectors also record fishing gear and time at sea on their own initiative; these variables are not collected systematically.

Total fleet catches are estimated by raising observed landings using the probability of fishing and the number of vessels. The probability of fishing is derived from a telephone survey in which licence holders are asked whether they fished on the previous day. The current estimates assume six non-fishing days per month. This may underestimate the number of non-fishing days and will be reviewed through a re-examination of the data, with additional collection if necessary.

Species misidentification and inappropriate gear aggregation are further potential sources of bias in the catch estimates. Both issues were under investigation at the time of the mission, and the landing-site observations provided practical examples to inform this work.

**Upcoming database changes**

Oman is in the process of developing a ministry-wide data infrastructure bringing together the existing fisheries, agriculture and other databases within a common framework. For fisheries, the platform is intended to allow fishers to apply for and pay for their fishing licences, and submit the associated reports. Information submitted through the platform would feed into the existing databases.

Under the proposed arrangements, fishers would be required to enter catch and trip information before selling their catch. This could provide more timely information on fishing trips, catches and species composition. Its reliability will, however, depend on the quality of the declarations. Species misidentification and inaccurate reporting remain concerns, particularly if users receive insufficient training.

Oman was therefore encouraged to maintain the existing collection systems in parallel while the new platform is tested and refined.

**Outcomes**

The main outcomes of the mission were:

1. **Assessment of fisheries data collection and reporting systems**. The mission reviewed data management arrangements for the artisanal, coastal and industrial fleets and identified gaps affecting the completeness, reliability and representativeness of submissions to the IOTC;
2. **Identification of potential biases in catch estimates**. The review identified assumptions about fishing activity, species misidentification and inappropriate gear aggregation as priorities for further investigation and refinement of the estimation methods;
3. **Identification of improvements needed in industrial fisheries reporting**. The review of the recently developed database identified incomplete logbook submissions, historical data that cannot be recovered, and gaps in bycatch and discard reporting. Further training and independent verification through observer coverage are needed;
4. **Assessment of landing-site data collection practices**. Visits to Qurayyat, Sur and Al Ashkharah provided direct observations of field procedures and confirmed weaknesses in species identification and gear classification. The wider review also identified particularly low reporting coverage for the coastal fleet;
5. **Support for IOTC reporting capacity**. Ministry staff received practical training on the IOTC reporting forms. The discussions also identified opportunities to improve data handling and reporting procedures;
6. **Identification of considerations for the transition to an integrated data system**. The mission reviewed plans to link licensing, trip reporting and catch declarations through a ministry-wide platform. Maintaining the existing collection systems in parallel was recommended while the new arrangements are tested and refined.

# Appendix III: 2026 IOTC Technical Workshops and Meetings

## Capacity building workshops

To support further progress in the implementation of the IOTC Regional Observer Scheme (ROS), the Secretariat organised three capacity-building workshops in 2026, focusing on data collection and reporting requirements for different fishing gear groups. These workshops aimed to strengthen CPCs' understanding of ROS reporting requirements, promote the use of standardised reporting forms and improve the quality and completeness of observer data submitted to the IOTC.

**Technical workshop to improve the reporting of purse seine data to the IOTC**

The Workshop on Purse Seine Fisheries Reporting was held in Seychelles, a country that has hosted one of the largest purse seine fisheries in the Indian Ocean for several decades. Conducted from 16 to 19 March, the workshop brought together 18 participants from six CPCs with industrial purse seine fleets operating in the Indian Ocean. Participants included representatives from fishing industries responsible for purse seine vessels, as well as companies involved in the development of software for the collection and processing of purse seine fisheries data, including Regional Observer Scheme (ROS) data.

Given the workshop's focus on purse seine fisheries reporting, discussions and technical reviews addressed all mandatory reporting requirements for the fishery, including retained catch, catch and effort, size-frequency data, information on fishing activities associated with drifting Floating Objects (dFOBs), buoy usage, and the implementation and evaluation of Regional Observer Scheme (ROS) data collection programmes by CPCs. Several presentations provided an overview of the current status of these datasets, highlighting both achievements and challenges in data collection and reporting. Particular attention was given to the development of data validation tools and the ongoing review of the dFAD reporting form. Participants were also introduced to the revised ROS reporting format and accompanying guidelines, including reporting requirements and implementation considerations. A presentation on the ObServe software by the Institut de Recherche pour le Developpement (IRD) highlighted the importance of collecting high-quality fisheries and scientific observer data from purse seine vessels. The software was well received, particularly by CPCs that are still developing their fisheries data management systems for purse seine fleets. Currently, the software is being used by the European purse seine fleet and Seychelles. In response to the strong interest expressed by participants, IRD proposed organizing a dedicated training workshop on the use of ObServe. The Secretariat also committed to ensuring that all reference codes incorporated into the software remain current and aligned with IOTC reporting standards. The workshop also discussed how Electronic Monitoring (EM) data could be integrated into the existing ROS framework to enhance monitoring coverage and improve the quality and completeness of data collected from purse seine fisheries.

**ROS reporting workshop for longline fisheries**

The ROS Reporting Workshop for Longline Fisheries was held in Johannesburg from 26 to 29 May 2026 and brought together 12 participants from eight CPCs. The workshop also benefited from the participation of experts in fisheries observer programmes and electronic monitoring, who shared their knowledge and experiences with participants.

The workshop focused on the implementation and reporting requirements of the Regional Observer Scheme (ROS) for longline fisheries. CPC representatives presented the status of their national ROS programmes, including data collection and reporting workflows, as well as the challenges encountered in programme implementation and data submission. The Secretariat provided an overview of the evolution of the ROS, identified key data gaps, and presented recent developments in reporting forms, reporting requirements, and associated guidelines. Given the increasing use of Electronic Monitoring (EM) systems in longline fisheries for the collection of observer-related data, the workshop also reviewed existing data gaps and discussed the implications of EM-derived data for ROS reporting requirements and data management processes.

Unlike purse seine fisheries, where dedicated software solutions are available to support the collection and management of observer and fisheries data, no common software platform is currently used for ROS data collection in longline fisheries. Instead, individual fleets and CPCs have developed their own tools and procedures for collecting, managing, and reporting ROS data. This diversity of approaches highlighted the importance of harmonising data standards and reporting practices to improve data quality, consistency, and reporting efficiency across CPCs.

**Gillnet data collection under the IOTC ROS**

The Workshop on Gillnet Fisheries Data Collection was conducted remotely and brought together representatives from CPCs with significant gillnet fisheries, namely Sri Lanka, Indonesia, Iran, and Pakistan. Over two days, comprising a total of six hours of discussions, participants reviewed the importance of gillnet fisheries in the Indian Ocean and recent developments in the fishery. Given that gillnet fisheries are predominantly small- to medium-scale operations, participants acknowledged the considerable challenges associated with data collection, resulting in limited and often fragmented data available for assessment and management purposes. Building on discussions from previous workshops related to the Regional Observer Scheme (ROS), participants reiterated the long-standing challenges of implementing conventional observer programmes aboard gillnet vessels. These challenges remain largely unchanged and include the small size of vessels, onboard safety concerns, limited accommodation, and generally unsuitable conditions for non-fishers to remain at sea for extended periods.

The World Wide Fund for Nature (WWF)-Pakistan initiated a crew-based observer programme in Pakistan in 2012, covering a number of gillnet vessels and generating a substantial amount of fisheries data. During the workshop, two presentations were delivered on the programme. The first provided an overview of its development and implementation, while the second focused on the design of the associated data collection system. WWF-Pakistan worked closely with the Secretariat to develop data collection forms aligned with IOTC reporting requirements. Although the programme generated valuable information, it was discontinued in 2019. Furthermore, as WWF acted as a secondary data holder rather than the competent authority, the data collected through the programme were not formally submitted to the Secretariat. A crew-based observer programme has been operating on a trial basis in Sri Lanka since 2018. Given the scale and diversity of the country's gillnet fisheries, including vessels operating both within areas under national jurisdiction and on the high seas, different management and monitoring arrangements apply across fisheries. As a result, the implementation of the crew-based observer programme has progressed at varying rates, reflecting the differing operational and management contexts.

For high-seas gillnet fisheries, the crew-based observer programme follows a data collection format closely aligned with the Regional Observer Scheme (ROS), covering most of the required data fields. While some information is not currently collected, this is largely due to the absence of specific fields in the existing data collection forms rather than operational constraints, and could be readily incorporated if required. The programme is primarily funded by the private fishing sector and is implemented through close collaboration between industry stakeholders and the Sri Lankan Government.

In contrast, Iran and Indonesia currently do not operate observer programmes within their gillnet fisheries. Data collection in these fisheries relies primarily on port sampling and landing-site monitoring.

In Iran, port sampling is largely limited to tuna and tuna-like species. Biological information for non-target species is generally unavailable, as many fish are processed at sea or prior to landing, resulting in catches being landed in a headed and gutted condition. Iran expressed interest in exploring a crew-based observer approach, recognising its potential to improve biological data collection while remaining cost-effective and fostering greater collaboration with fishers.

Indonesia, meanwhile, presented its recently introduced OBOR application, which has been in use since 2025 and employs artificial intelligence (AI) to support species identification and catch enumeration. The system was developed to strengthen fisheries data collection and processing; however, it remains unclear to what extent it has been implemented within gillnet fisheries, given that Indonesia does not have a gillnet fleet operating beyond areas under national jurisdiction.

The workshop concluded with a proposal to organise an in-person meeting focused on alternative data collection approaches for gillnet fisheries, including practical training on data requirements and collection methodologies. Participants also requested an independent review of existing ROS data collection approaches, including conventional observer programmes, crew-based observation systems, and emerging electronic monitoring and technology-based solutions, with the aim of identifying best practices and improving data coverage across gillnet fisheries in the Indian Ocean.

## Participation in Other Workshops

The Data Section participated in three other workshops in 2026 related to fisheries data management.

The International Seafood Sustainability Foundation (ISSF) workshop aimed to improve understanding of the impacts of large-scale and small-scale tropical tuna fisheries, with particular emphasis on data and governance gaps. Representatives from several tuna Regional Fisheries Management Organizations (t-RFMOs) participated and presented the current status of tropical tuna fisheries within their respective management areas. Discussions highlighted differences in data availability, reporting obligations, and management approaches between fisheries and regions. A key recommendation from the workshop was the need for greater collaboration among t-RFMOs to review and harmonise data requirements, while improving alignment between reporting obligations and management measures. During the workshop, the Data Coordinator presented a case study on large-scale and small-scale fisheries within the IOTC area of competence. The presentation highlighted the absence of a universally accepted definition and classification of artisanal, small-scale, and subsistence fisheries across CPCs, and the challenges this creates for data collection, and reporting. The ongoing efforts by the Secretariat to improve the categorisation of these fisheries and to support more consistent reporting practices across CPCs were also presented and discussed.

The Indian Ocean Shark Research Plan workshop focused on identifying research priorities and data requirements to support the development of a coordinated regional research plan for sharks. Discussions included a review of existing IOTC shark data holdings, their availability and reporting status, and the main gaps and challenges affecting the collection, reporting and use of shark fisheries data. The workshop provided an opportunity to identify priority research needs and opportunities to improve data collection and availability in support of shark stock assessments and management.

The Data Section participated in a technical webinar organised by FAO and the Southeast Asian Fisheries Development Center (SEAFDEC) on 14 October 2026. The webinar reviewed existing approaches and frameworks for collecting and reporting information on abandoned, lost or otherwise discarded fishing gear (ALDFG). Discussions highlighted opportunities to harmonise data collection methods, reporting procedures and terminology, with a view to improving the consistency and comparability of ALDFG information and supporting the development of regional guidelines.

## External meetings

The Data Section participated in four external meetings held virtually in 2026. Two of the meetings were related to European Union fisheries data status, while the other two focused on bycatch-related data.

# Appendix IV: Data-Related Requests from Other Meetings

**Tab. A2:** Data-related requests to the 22nd Working Party on Data Collection and Statistics (WPDCS22)

| Meeting | Paragraph | Description |
|---|---|---|
| SC28 (December 2025) | 27-28 | The SC RECALLED that the National Report does not replace the need for submission of data according to the IOTC Mandatory Data Requirements listed in the relevant IOTC Resolutions (and in particular Resolution 15/02). For these reasons, the SC REQUESTED all CPCs to ensure that information and data presented in the respective National Reports and the official submissions available to the IOTC are in agreement with each other |
| | 62 | The SC NOTED that the WPNT is exploring alternative data-poor methods that utilise length-frequency data. The SC REQUESTED countries harvesting these species to work to improve their length frequency data, with support from the Secretariat, to make the future assessments feasible and less uncertain. |
| | 102 | The SC NOTED that there have been unusually high catches of striped and blue marlin by purse seines in vert recent years. The SC REQUESTED the WPB and WPDCS to investigate these data to check if those estimates are realistic. |
| WGEMS06 (April 2026) | 22 | The WGEMS DISCUSSED the possibility of holding this workshop directly ahead of the WPDCS meeting as many of the participants to the workshop would also be present at WPDCS. However, the workshop timing was not fully confirmed. |
| | 80 | The WGEMS AGREED that the IOTC specific technical workshop on EM data and implementation to support CPC's EM implementation, and described in paragraphs 19-22, be held following this joint tuna RFMO EM harmonization workshop together with the WPDCS in 2027. |
| | 85 | The WGEMS RECOMMENDED that the WPDCS consider and endorse the WGEMS Programme of Work (2027–2031), as provided in Appendix IV. |
| WPICMM09 | 130 | The WPICMM09 RECOMMENDED the Secretariat to make available in the IOTC website a table which documents the yellowfin tuna catch limits, over-catch and applicable payback across the years that yellowfin catch limits have been in force |
| CoC23 (May 2026) | 63 | The CoC23 NOTED that Somalia have not reported catch figures previously and RECOMMENDED that the Commission task the Working Party on Data Collection and Statistics (WPDCS) to discuss the reported catch figure of Somalia |
| | 137 | The CoC23 NOTED that the European Union had submitted its revised catch data for 2018 to the IOTC Secretariat, which has since been incorporated into the IOTC datasets, and FURTHER NOTED that a methodological description, as advised by CoC22, had also been submitted to the Secretariat. The CoC23 REQUESTED the Secretariat to table the methodology for further consideration by the Working Party on Data Collection and Statistics |
| S30 (May 2026) | 48 | The Commission NOTED that paragraph 7 of Resolution 23/06 requests the SC to develop best practice guidelines for the safe handling and release of cetaceans by 2025, taking into account relevant work undertaken by other RFMOs. The Commission REQUESTED the WPDCS, WPEB and the SC to examine the existing recommendations related to this provision and provide an updated recommendation for endorsement by the Commission in 2027, including through intersessional collaboration among interested CPCs. |

| Meeting | Paragraph | Description |
|---|---|---|
| WGFAD08 (June 2026) | 12 | The WGFAD NOTED that changes to reporting forms are currently documented through change logs available on various information-sharing platforms. However, the WGFAD SUGGESTED that the Secretariat consider mechanisms to make such changes more visible to CPCs. |
| | 13 | The WGFAD SUPPORTED the Secretariat's proposed timeline for updating Form 3DA and the associated codelists in advance of their consideration by the WPDCS. |
| | 14 | The WGFAD REQUESTED the Secretariat to continue intersessional efforts to develop updated and standardised guidelines for Form 3DA, to be presented at the WPDCS. This revision should include: (i) standardisation of date and time formats; (ii) inclusion of vessel type classification; (iii) definition of biodegradability categories; (iv) clarification of mesh size reporting; and (v) revision and harmonisation of activity categories related to buoys and FADs. The WGFAD REITERATED the importance of the Secretariat's commitment to supporting CPCs before, during and after data submission to ensure that the highest possible data quality is achieved. The WGFAD NOTED that such support may be provided through informal exchanges aimed at resolving reporting issues or, where necessary, through requests for resubmission. |
| | 50 | The WGFAD NOTED the ongoing work of the Secretariat on developing a glossary of important terms in IOTC fisheries including the definition of a 'fishing event' which it intends to present to the WPDCS. The WGFAD NOTED that the final intention would be to discuss this glossary and any recommendations relating to it from the WPDCS further at FAO's Coordinating Working Party on Fishery Statistics (CWP) in 2027 in an effort to standardise these definitions across all RFMOs as currently CWP's definitions are very limited. The importance of aligning terminology and definitions across RFMOs to improve consistency and comparability was emphasised. The WGFAD RECALLED its previous review of FAD definitions, which resulted in updated definitions being incorporated into Resolution 24/02, and supported efforts to advance agreed definitions through the CWP process |
| WPNT16 (July 2026) | 124 | The WPNT NOTED that revisions to Indonesia's historical catches have introduced significant differences relative to the last assessment. For Spanish mackerel, annual discrepancies range from 20,000 to 36,000 tonnes over 2017–2022 (kawakawa shows similar differences; longtail tuna differences are considerably smaller). Consequently, the current assessment results are not directly comparable to 2023. The revised catch series, endorsed by the SC, is based on logbook and landing-site data and is considered more reliable. However, the WPNT AGREED that it remains difficult to explain why the revision disproportionately affects some species (e.g., COM and KAW) over others (e.g., LOT) given they are caught in the same fisheries. The WPNT REQUESTED the WPDCS to investigate this discrepancy further. |
| WPB24 (September 2026) | 111 | NOTING the necessity to gather information to enable the development of advice relating to a range of potential management measures to complement the commonly used CPC based catch advice, the SC REQUESTED:<br>• That the IOTC Secretariat (or alternately CPCs, where the Secretariat does not hold a CPCs relevant data or information) provide summaries of observer data (or logbook data or other relevant information) to WPB pertaining to the following data types for the following fishery types:<br>o All gear/fishery types – discarding/retention rates and at-haul mortality (%) for each marlin and sailfish species, by fishery/gear type<br>o Longline – proportion of each fleet using different hook types and |

| Meeting | Paragraph | Description |
|---|---|---|
| | | sizes (Japanese tuna, J hook, Circle hook, other)<br>o Gillnet – estimate of the proportion of the gillnet fleet using subsurface setting, and if possible, preferred depths used in fishery, and whether the fishery predominantly sets/soaks the gear overnight or through the day (or other).<br>• CPCs to consider undertaking analyses (e.g., model-based) of at-haul mortality, at a longline fleet level (and if possible for troll/handline), to help identify key factors driving at-haul mortality and subsequently, possibly help identify additional options to reduce at haul mortality<br>• CPCs individually or collaboratively conduct gillnet experimental fishing trials that:<br>o Aim to test different setting depths and times of setting/soaking (e.g. day/night), on catch rates and mortality of interacting species<br>o Collect data on all interacting species including billfish bycatch, target tuna and vulnerable species (e.g. cetaceans, turtles), in order to provide the Commission a quantified understanding of likely effects and possible trade-offs of various subsurface setting options, on each species.<br>o Prioritise accurate species identification. |
| | 24 | The WPB NOTED that some fisheries targeting oilfish (Ruvettus pretiosus) and escolar (Lepidocybium flavobrunneum) in the southwestern Indian Ocean may catch substantial amounts of tuna and tuna-like species, including billfish species, and REQUESTED the Secretariat to liaise with SIOFA to determine whether data on these catches are reported to the IOTC. |
| | 27 | The WPEB NOTED that some preliminary analyses of data reported by CPCs for 2025 show some improvements in the reporting at species level. The WPEB NOTED that India reported sharks catches at species level for the first time and the WPEB REQUESTED the Secretariat to work closely with India to review previous catches. |
| | 176 | The WPEB NOTED that India has adopted stringent measures to protect more than 20 shark species, including introducing minimum size limits, a complete finning ban, and trade and export controls of shark fins. India's National Plan of Action (NPOA) for sharks was adopted in 2024. The WPEB also ACKNOWLEDGED India's efforts to report shark catches at the species level in recent years and NOTED the potential to review historical catch data as well. The WPEB REQUESTED the Secretariat to liaise with India to review the reporting of historical shark catches. |
| | 318 | NOTING that many items on the PoW for the WPEB relate to improving data which are valid for many working parties, the WPEB REQUESTED the Secretariat to summarise common issues across Working Parties for discussion during the meeting. The WPEB further REQUESTED the WPDCS to ensure that their PoW is harmonised with all the Working Parties then take any common issues to the SC for discussion and endorsement. |
| WPTT28 (October 2026) | 17 | The WPTT STRESSED the need for CPCs undertaking historical catch reviews to accelerate these processes and provide updated datasets as soon as possible. The WPTT REQUESTED that the WPDCS prioritise historical catch reviews and strengthen efforts to ensure that CPCs provide adequate supporting documentation describing the methodologies used to estimate and revise catches, and that the outcomes of these reviews and the associated methodologies be reported back to the WPTT. |
| | 23 | The WPTT REQUESTED that the Secretariat clearly distinguish between anchored FAD (AFAD) and other FAD categories in analyses of Indonesian purse seine fisheries. |

| Meeting | Paragraph | Description |
|---|---|---|
| | 24 | The WPTT NOTED the suggestions to present catch and size-frequency information aggregated across all EU Member States rather than by individual Member State. However, the WPTT NOTED that Resolution 12/02 applies confidentiality provisions to fleets comprising three or fewer vessels, and REQUESTED further discussions between the Secretariat and the European Union to determine the most appropriate approach for presenting and interpreting these data while respecting confidentiality requirements. |
| | 20 | The WPTT NOTED that raising size-frequency data is a standard practice intended to reduce sampling bias and improve the representativeness of size-composition data. However, given the potential influence of raising procedures on assessment results, the WPTT REQUESTED that CPCs document and report the methodologies used to raise their size-frequency data. |
| | 21 | The WPTT NOTED the substantial increase in size-frequency samples reported from the Iranian gillnet fishery over the last two years and REQUESTED that Iran clarify whether these data represent actual samples collected or raised estimates. |
| | 61-62 | The WPTT NOTED the development of a machine-readable application for National Reports, which could facilitate data extraction, validation, and cross-checking. NOTING that such a tool could improve the transparency, consistency, and usability of National Reports, while also helping to identify opportunities for enhancing reporting templates.<br>The WPTT SUGGESTED that the paper and associated application be presented to the WPDCS for review and feedback, particularly regarding its potential use in supporting data validation and improving reporting practices. |

# Appendix V: Progress on WPDCS21 Recommendations

**Tab. A3:** Recommendations from the 21st IOTC Working Party on Data collection and Statistics (WPDCS21) to the 28th Scientific Committee (SC28), and responses and follow-up by the 30th session of the Commission (30)

| Type | WPDCS21 (para) | Recommendations | SC28 (para) | Response / follow-up by the SC28 | S30 | Commission response / suggestions for consideration at WPDCS22 |
|---|---|---|---|---|---|---|
| Data reporting | 87 | The WPDCS RECOMMENDED that the SC ADVISE the Commission to ensure that the transition from the current website to the FAO one does not affect the operations of the Commission and set aside enough resources for this transition | 236 | Updates: The SC RECOMMENDED that the Commission ensures that the transition from the current website to the FAO one does not affect the operations of the Commission and set aside enough resources for this transition | | Update: None |
| National statistical systems | 135 | The WPDCS RECOMMENDED that the SC consider adding specific code to longline logbook and ROS templates to enable the collection of data on the use of loop devices in longline fisheries. The WPDCS ACKNOWLEDGED that the ratio between the number of hooks and loop lines may provide a simple and efficient metric for effort and further NOTED that species-specific catch data should be collected for both hook-based and loop-based effort units | 146 | The SC ENDORSED the recommendation to add a specific code to longline logbook and ROS templates to enable the collection of data on the use of loop devices in longline fisheries. The SC ACKNOWLEDGED that the ratio between the number of hooks and loop lines may provide a simple and efficient metric for effort and further NOTED that species-specific catch data should be collected for both hook-based and loop-based effort units | | Update: None |
| WPDCS programme of work | 220 | The WPDCS RECOMMENDED that the SC consider and endorse the WPDCS Programme of Work (2026-2030) | 287 | Update: The SC NOTED the proposed Programme of Work and priorities for the SC and each of the working parties and AGREED to a consolidated Programme of Work as outlined in Appendix 36a-g. The Chairpersons and Vice Chairpersons of each working party will ensure that the efforts of their respective working parties are focused on the core areas contained within the appendix, considering any new research priorities identified by the Commission at its next Session | | Update: None |

| Type | WPDCS21 (para) | Recommendations | SC28 (para) | Response / follow-up by the SC28 | S30 | Commission response / suggestions for consideration at WPDCS22 |
|---|---|---|---|---|---|---|
| Draft review and report adoption | 228 | The WPDCS RECOMMENDED that the Scientific Committee consider the consolidated set of recommendations arising from WPDCS21, as detailed in Appendix VI | 303 | Update: The SC RECOMMENDED that the Commission consider the consolidated set of recommendations arising from SC28, provided at Appendix 40 | para. 51 | Update: The Commission ENDORSED the SC's 2025 list of recommendations as its own |

# Appendix VI: Projects Supporting IOTC Data Section Activities

## SWIOP – Sustainable Western Indian Ocean Programme

**Strengthening Fisheries Data Systems and Scientific Capacity in the Western Indian Ocean**

Under Pillar 1 (*Ocean Governance*) of the Sustainable Western Indian Ocean Programme (SWIOP), activities are planned to strengthen fisheries data systems and scientific capacity in the Western Indian Ocean (WIO), in collaboration with the Indian Ocean Tuna Commission (IOTC) and the Southern Indian Ocean Fisheries Agreement (SIOFA). The activities aim to modernise data infrastructure, harmonise collection and processing procedures, improve the availability and interoperability of fisheries and biological data, and support their use in scientific assessments and management advice.

Modernisation of RFMO Digital Systems

SWIOP will support the modernisation of IOTC data management infrastructure and associated procedures through:

- Migration and redesign of the IOTC Statistical and Biological Data System using a PostgreSQL architecture aligned with FAO standards, covering catch, effort, size-frequency, fish aggregating device (FAD), licensing and socio-economic data.
- Modernisation of Regional Observer Scheme (ROS) data management, including interoperability with national systems and IRD's ObServe software, improved validation and security, and metadata aligned with FAIR (Findable, Accessible, Interoperable and Reusable) principles.
- Streamlining and automation of data processing workflows, supported by standard operating procedures and centralised workflow management.
- Upgrading the drifting FAD (DFAD) Register to strengthen traceability, compliance monitoring and interoperability with vessel monitoring systems (VMS) and other IOTC information systems.
- Development of a common quality-assurance framework, including harmonised validation rules and version control.

Harmonisation of Catch and Biological Data

Activities led by Ifremer, in coordination with IOTC and SIOFA, will support more consistent fisheries sampling and biological data management. They include regional workshops on sampling strategies and species identification, reviews of national catch recording systems, and national training on biological sample collection, preservation and labelling. The programme also envisages establishing the Western Indian Ocean Fish Bank (WIO-FishBank), combining regional specimen storage with digital traceability of biological samples.

Integration and Dissemination of Spatial Data

SWIOP will support the integration of geographic information systems (GIS) into routine RFMO data management and analysis. Planned activities include developing shared geospatial databases linking VMS, observer, FAD and environmental information; producing harmonised maps and analytical products for scientific and compliance purposes; and establishing metadata standards and DOI-based publication procedures for spatial datasets.

Scientific Capacity Development

Regional workshops on the R programming language will support CPC scientists in fisheries data processing, analysis and stock assessment, including the application of methods and tools such as JABBA, CMSY and LB-SPR. These activities are intended to strengthen national analytical capacity and participation in RFMO scientific processes.

Expected Contribution

Together, these activities are expected to improve the quality, consistency, traceability and accessibility of fisheries data, strengthen cooperation among national institutions and regional organisations, and support more reproducible scientific analyses and evidence-based fisheries management in the WIO region.

## EC1350 – EU-Funded Support to the IOTC Scientific Committeeâ€™s Programme of Work

**Strengthening Biological Knowledge and Coastal Fisheries Data Systems**

The EU-funded EC1350 project supports the IOTC Scientific Committeeâ€™s Programme of Work by improving biological information on tuna and bycatch species and strengthening coastal fisheries data systems. The activities relevant to the Data Section fall under Goal 1, on biological knowledge, and Goal 3, on coastal fisheries data systems. They aim to improve the quality, consistency and usability of information used in stock assessments and management advice.

Goal 1 – Improving Biological Knowledge

**Scoping and pilot for a regional sampling framework.** The project will assess options for a coordinated regional biological sampling programme to address gaps in size-frequency, morphometric and other biological information. Planned activities include:

- Reviewing existing size and morphometric datasets to identify gaps and priorities.
- Defining the scope, priority species (particularly albacore, yellowfin and bigeye tuna), logistics and resource requirements of a regional programme.
- Developing harmonised sampling, preservation and associated data protocols.
- Implementing a pilot in three priority CPCs covering morphometric measurements, genetic sampling and advanced biological sampling, potentially including ageing or close-kin mark–recapture approaches.

The scoping study and pilot will inform the design of a longer-term regional sampling framework and support the development of more reliable biological parameters for scientific assessments.

Goal 3 – Improving Coastal Fisheries Data Systems

**Review of national data collection and processing tools.** The project will assess the systems and procedures used by CPCs to collect, validate, process and report coastal fisheries data, identifying opportunities to reduce inconsistencies and promote harmonised, scalable approaches.

**Enhancement of OpenARTFISH and artfishR.** In collaboration with FAO and selected CPCs, the project will support improvements to these tools to better meet IOTC reporting requirements, including:

- Alignment with international fisheries statistical classifications and IOTC reporting standards.
- Integration of size-frequency data modules.
- Testing and refinement through national case studies.
- Development of accessible reporting, data export and visualisation outputs.

**Regional capacity development.** A regional workshop will address sampling theory, statistical raising procedures and the practical application of OpenARTFISH and artfishR, with the aim of supporting reproducible national workflows for estimating and reporting coastal fisheries catch and effort.

Expected Contribution

The combined activities are expected to strengthen biological sampling and coastal fisheries data processing, improve the consistency of catch estimates and biological information submitted to the IOTC, and support more robust stock assessments and national reporting capacity.