

Report of the 2024 Meeting of the Subcommittee on Statistics *(Hybrid/Madrid, Spain meeting, 16-17 September 2024)*

1. Opening, adoption of Agenda and meeting arrangements

The annual meeting of the Subcommittee on Statistics (SC-STAT) was held in Madrid on 16-17 September 2024 in a hybrid format. The Chair of the Subcommittee on Statistics, Dr Pedro Lino (EU), opened the meeting, highlighted the complexity associated with hybrid meetings, and reiterated the need to work efficiently focusing on the main aspects under discussion.

The Agenda (**Appendix 1**) was discussed and adopted without modifications. Mr. Carlos Mayor and Mr. Fabio Fiorellato (ICCAT Secretariat) served as rapporteurs for the meeting. The List of Participants is attached as **Appendix 2**. The List the Documents presented during the meeting is summarised in **Appendix 3**, with the respective summaries provided in **Appendix 4**.

2. Summary of fisheries and biological data submitted during 2024 (Tasks 1, 2 and 3), including historical revisions

The Secretariat provided a summary of the data reported to date through an overview of the 2024 detailed Secretariat Report on Research and Statistics, covering the activities and the information on fisheries statistics and biological data received between 1 October 2023 and 1 September 2024 (the “*reporting period*”), including revision to historical data. Furthermore, it was recalled how all basic fisheries statistics and biological information have been presented by the Secretariat to the SCRS Working Groups during the SCRS intersessional meetings.

After five years of continuous improvements, the Secretariat observed a slight regression in the data provision for 2019 and 2020 data (provided during 2020 and 2021, respectively), a slight improvement for 2021 data, and again a slight regression in data completion quality for 2022 and 2023 data, reported during 2023 and 2024, respectively. The Secretariat noted that changing the deadline to submit Task 1, 2, and 3 data from 31 July to 15 July, may have had an impact on the increase of late reporting observed in 2024. This impact was compensated by the additional time available to properly verify the information and request the pertinent data corrections to consequently improve the overall data quality. Some datasets only passed the SCRS filtering criteria after the corrections introduced by the Secretariat to resolve common errors (mostly linked to incomplete forms and invalid use of ICCAT codes). In addition, the information submitted using outdated versions of the standard electronic forms (i.e., versions prior to 2024a) increased to a total of 9% of the ~1,180 forms submitted during the reporting period, with 25 Flag CPCs submitting at least one dataset using outdated versions of the forms, compared to the 19 Flag CPCs that did so in 2023. The SC-STAT reminds all CPCs that only the latest version (2024a) of the standard electronic forms is considered valid for the submission of new and historical data, as they incorporate all latest changes approved by the SCRS.

In addition to the standard activities related to the management of statistics, publications, and budgets for various data-related tasks, the Secretariat dedicated substantial additional work to support stock assessment activities (besides the preparation of data sets for the meetings) whether by participating actively in the assessment, or by coordinating and managing external support to the SCRS work. In addition, the statistical work requested to the Secretariat, together with some lack of adherence to deadlines established for data submission (slightly improved this year), continues to constitute significant additional work for the Secretariat. However, to partially mitigate the consequences of the already excessive workload, the Secretariat has been able to improve the automation of data integration and validation procedures.

The Secretariat applied the SCRS filtering criteria (as described in the [2013 Report of the Subcommittee on Statistics](#), Addendum 2 to the [2022 Secretariat Report on Research and Statistics](#), Filters 1 & 2) to accept/reject the statistical forms submitted during the reporting period. The results presented reflect the status of a total of 75 Flag CPCs (51 CP + 1 CP [15 EU Member States] + 1 CP [5 UK Flag States] + 4 NCC) with reporting obligations. All forms that were submitted with errors that the Secretariat could not correct until the end of the SCRS annual meeting were considered as “unreported data” and require CPC revisions.

The overall reporting status for 2023 data (**Figure 1**), shows that 64 of the 75 Flag CPCs (85%) have reported fisheries and biological information: 59 Flag CPCs with catches (79%) and 5 Flag CPCs with no fishing activity (5%). As the Species Group meetings will be held after the Subcommittee on Statistics, at this stage it was not possible for the Secretariat to update the figures to include new or revised data which are usually reported by CPCs in this occasion. The Secretariat reiterated that late reporting of mandatory statistical information by Flag CPCs still persists, and it considerably hampered the work of both the Secretariat and the SCRS.

2.1 Task 1 (T1FC and T1NC) and Task 2 (T2CE and T2SZ) statistics

The Secretariat presented a summary of the 2023 data reporting status for the two Task 1 datasets (T1FC - Fleet Characteristics, and T1NC - Nominal Catches dataset), as well as the three Task 2 datasets (T2CE - Catch and Effort, T2SZ - Size Frequencies, and T2CS - Catch-at-Size dataset) using the standard SCRS Report Cards included as Table 1, 2, 3 and 4 (for both T2SZ and T2CS) in the 2024 Secretariat Report on Research and Statistics [SCI_07/2024].

The form ST01-T1FC is used to report information on individual vessels (sub-form ST01A) and summarized information for vessels with a length overall of less than 20 m (sub-form ST01B). The overall reporting level of T1FC for 2023 was 75% (56 Flag CPCs), which is comparable to the 73% (55 Flag CPCs) observed for 2022 (data reported in 2023). Twenty-one Flag CPCs reported T1FC data after the deadline, and the Secretariat made corrections to the information reported by 3 Flag CPCs.

The form ST02-T1NC is used to report nominal catches using two sub-forms: 1) ST02A used to report positive catches (categorized as landings, dead discards, and live releases), and 2) ST02B used to report explicit “zero” catches. The overall reporting level of T1NC data for 2023 was 85% (64 Flag CPCs), which is comparable to the 84% (63 Flag CPCs) observed for 2022 (data reported in 2023). Eighteen Flag CPCs reported this information after the deadline, and corrections were made to the datasets of 5 Flag CPCs. Eleven Flag CPCs (15%) have yet to report their 2023 T1NC information.

The form ST03-T2CE is used to report catch-and-effort information either as recorded on the logbooks or raised to the total catches for the fleet and gear concerned. A total of 52 Flag CPCs (69%) reported T2CE for 2023, which is a level comparable to the 68% (51 Flag CPCs) observed for 2022 (data reported in 2023). Twelve Flag CPCs reported this information after the deadline, and corrections were made to the datasets of 3 Flag CPCs. Twenty-three Flag CPCs (31%) have yet to report T2CE data for 2023.

The T2SZ/CS report card covers data submitted through both form ST04-T2SZ and ST05-T2CS. A total of 44 Flag CPCs (59%), including 11 late-reporting Flag CPCs, submitted size data for 2023. A total of 31 Flag CPCs (41%) have pending the submission of 2023 size data. These indicators are slightly better than those observed for 2021 and 2022 size data (**Figure 1**).

The Secretariat informed that five Flag CPCs reported no fishing activity on ICCAT species for the 2023 calendar year, which is slightly higher than the number observed in previous years. The list of Flag CPCs with no fishing activity reports is published in the Table 5 of 2024 Secretariat Report on Research and Statistics [SCI_07/2024], which presents a summarised view of the reporting status of all the Task 1 and Task 2 datasets for 2023.

The Task 1 and Task 2 dataset provisions over the last six SCRS meetings (**Figure 1**) gives a broader perspective on the reporting status of all ICCAT Flag CPCs at the beginning of each annual SCRS meeting.

The Secretariat informed that the most common deficiencies detected across all submissions of Task 1 and Task 2 datasets continue to be: 1) the incompleteness of the forms' header and data sections, 2) the reporting of empty sub-forms (e.g., ST01B for small scale vessels; ST02B for “0” catches), 3) the use of non-ICCAT codes, and 4) the use of outdated form versions. These four types of deficiencies are identified with “orange” cells in the SCRS report cards (Tables 1 to 5 of the 2024 Secretariat Report on Research and Statistics [SCI_07/2024]), do not pass the SCRS filtering criteria, and require explicit corrections (or data completion) from the Secretariat, followed by subsequent confirmations and/or revisions by the CPCs. The Subcommittee reiterated the need for all International Commission for the Conservation of Atlantic Tunas (ICCAT) CPCs to pay a special attention to correct these types of data reporting issues in future submissions. The Subcommittee encouraged all CPC statistical correspondents that require clarifications on their 2023

data reporting status to contact the Secretariat individually, to understand the nature of the issues and resolve all identified problems.

The Secretariat also informed that the T1NC dashboard (developed using Microsoft PowerBI) is now fully working and published on the ICCAT website. During 2024, improved versions of the T1NC dashboard were also prepared for the Species Groups intersessional meetings. The Subcommittee commended the Secretariat for this work and requested to continue the development and maintenance of T1NC dashboards as an important means to properly disseminate T1NC information.

The Subcommittee on statistics was presented with a summary table highlighting the fraction of catches by species reported as *target* / *bycatch* / *unknown*, which is a mandatory requirement introduced in 2023 in the ST02-NC form, and noted how some species (billfish in particular) are frequently reported to ICCAT as bycatch. Conversely, for small tuna and major shark species, reporting CPCs often explicitly indicate the type of catch as *unknown*. The Secretariat reminded CPCs that not providing information on target / bycatch in form ST02-NC will prevent the form from being processed and trigger a request for clarification from the data provider, as will the provision of potentially inaccurate information detected by the Secretariat (e.g., tropical tuna catches reported as bycatch by purse seiners fisheries operating in the eastern Atlantic tropical area).

Some CPCs highlighted the burdensome task of submitting multiple empty forms to indicate no fishing activity in a year. The Secretariat recalled that the CPCs with no fishing activities in a given year catching ICCAT species in the Convention area, have only to report the form ST02-T1NC, by completing only the header section and stating that fact in the field "Notes". The Secretariat also confirmed that, this provision was adopted by this Subcommittee several years ago to eliminate that particular burden. The Secretariat stated that additional simplifications will be further resolved by the IOMS.

2.2 Tagging

The Secretariat provided a summary of the tagging data received by the Secretariat during the Reporting Period. The different laboratories and scientific institutions conducting electronic tagging in the ICCAT Convention area reported a total of 298 releases and 84 recoveries. With respect to the conventional tagging (details in Tables 7 of the 2024 Secretariat Report on Research and Statistics [SCI.07/2024]), a total of 5568 tags were deployed and 368 were recovered. On the same period, the Secretariat distributed about 2300 conventional tags, primarily under the tagging projects of the Atlantic-Wide Research Programme for Bluefin Tuna (GBYP).

The Secretariat also informed on several ongoing projects such as the full cross-validation of both conventional and electronic tagging databases, with the main objective of correcting all the discrepancies and missing information across all species, or the creation of a new section within the ICCAT web page where the layers representing the ICCAT area, sampling areas, stock areas, etc. will be published. In addition, the website will contain a link to a cartographic viewer that will facilitate the visualisation and consultation of the geographic layers.

In addition, regarding electronic tagging, the Secretariat also informed on the creation of a database containing the statistics of Wildlife Computers' *miniPAT* tags with the aim of carrying out an in-depth analysis of the performance of these tags over time. This database will contain information about the tag (configuration) or the data sent to the satellite (number of messages, days of transmission, etc.) as well as the metadata sent by the CPCs and the inventory created by ICCAT.

2.3 Complementary data obtained within ICCAT data collection and research programmes (GBYP, AOTTP, EPBR, SMTYP and SRDCP)

The data recovery activities conducted within ICCAT research programmes (GBYP, AOTTP, EPBR, SMTYP and SRDCP) have historically contributed to great improvements to the ICCAT fisheries statistics by recovering missing or incomplete catch series and biological samples. No major fisheries statistics datasets were recovered under these programmes during the Reporting Period. All the historical revisions made during the reporting period are presented in Table 14 (T1NC), Table 17 (T2CE), and Table 18 (T2SZ) of the 2024 Secretariat Report on Research and Statistics, which also contains the supported SCRS documents and

the adoption status of the respective Species Group. Some of these SCRS documents were associated with these programmes.

2.4 Other relevant statistics (observer data, VMS, BCDs, ISSF, etc.)

Domestic Observer data should be submitted using the 2024 version of the form ST09-DomObPrg. The Secretariat indicated that the number of Flag CPCs submitting observer data using form ST09 has shown an increase from 29 in 2023 (2022 data) to 36 in 2024 (2023 data), as summarized in Appendix 4 of the 2024 Secretariat Report on Research and Statistics. Table 9 of that same report provides a summary of the data extracted from the forms ST09-DomObPrg reported for 2023 by Species Group and discard fate, including sharks, sea turtles, and seabirds. Table 10 contains data on discards (both dead and alive) extracted from T1NC data for 2023 by species group, species, discard fate, and CPC Flag. A summary of the information submitted on ST09 forms for sea turtles, seabirds, and cetaceans is provided in Tables 11, 12, and 13 of the Report, respectively.

The Secretariat provided an overview with the statistical information available for Fish Aggregating Device (FAD) data (form ST08). **Appendix 2** of the 2024 Secretariat Report on Research and Statistics provides a summary of FAD information received in FAD Management Plans and ST08 forms for 2023 (some datasets could require revisions).

2.5 Historical revisions

The major updates to Task 1 on billfishes and tropical tuna species occurred intersessionally within their Species Groups in 2024. The updates adopted are summarised in Table 14 of the 2024 Secretariat Report on Research and Statistics [SCI_07/2024]. All the remainder updates to T1NC pending a decision by the respective Species Group, are summarised in Tables 14 and 15 of the 2024 Secretariat Report on Research and Statistics [SCI_07/2024]. The dataset revisions to T2CE and T2SZ (all adopted intersessionally) are summarised in Tables 17 and 18 of the 2024 Secretariat Report, respectively. The pending adoptions shall be presented and approved by the respective Species Groups during the 2024 Intersessional meetings.

2.6 Documents relevant to statistics

Document SCRS/2024/181 analyzes the catches obtained in longline fishing in the Gulf of Mexico by the Mexican fleet during the period 1993-2023, with the purpose of presenting the historical proportion of catches by species, particularly on the group of sharks (SHK) with the aim of implementing a program to improve fishing statistics (biological information), considering the relative composition of the target fishery, its by-catch and the behavior of the CPUE during the period. The Subcommittee welcomed these types of extensive statistical revisions and improvements and noted that the SG-SHK should revise and adopt these updates.

Document SCRS/2024/175 details the conclusions of a workshop focused on billfish and small tuna catches in the tropical and subtropical central Atlantic, especially along the West African coast, the Caribbean Sea, and South American coasts. Over the past 40 years, programs like the *ICCAT Enhanced Program for Billfish Research* (EPBR) and the *ICCAT Small Tuna Research Program* (SMTYP) have aimed to improve basic fishery data in this region. The workshop emphasized the challenges of estimating artisanal fisheries' catches due to insufficient monitoring and recommended the implementation of regional workshops to enhance CPCs' capacity to provide necessary data for scientific and monitoring efforts.

The Subcommittee on Statistics welcomed Costa Rica as a new ICCAT CPC, having joined in June 2024, and acknowledged Costa Rica's intention to contribute to the work of the SCRS by providing the best scientific data available at national level. Costa Rica confirmed their satisfaction in participating to the workshop and took the chance to congratulate the group for its work.

UK expressed interest in seeing some of their overseas territories being included in the list of selected countries to participate in these workshops and queried on the selection criteria applied. Confirming that the selection is not yet closed, the Subcommittee on Statistics explained how it was initially based on two criteria: a) significant catches of the two species (blue marlin and yellowfin tuna), and b) evident gaps in their data, and that other criteria could be considered to identify countries to be included in the next phase.

3. Summary of ICCAT Secretariat's standard (yearly based) datasets estimations

3.1 *Catch distribution (CATDIS) and Fishing effort distribution (EFFDIS)*

The Catch distribution (CATDIS) (*CATch DIStribution*) dataset represents an estimation of T1NC data for the nine major tuna and tuna-like species of ICCAT stratified by year, Flag, fleet, gear, fishing mode, catch type, quarter, and 5-degree squares. It represents one of the most used ICCAT catch estimations and is of particular importance for the ICCAT stock assessments using integrated stock synthesis models (SS3). The Secretariat has updated the CATDIS from 1950 to 2022 with the most recent statistical information available. The newly CATDIS estimations were published on the ICCAT website on 31 January 2024 (reflecting in detail the T1NC catches also published in the same date). The CATDIS was used in the majority of the 2024 intersessional SCRS meetings, and Vol. 49 of the Statistical Bulletin was also updated with the most recent CATDIS (maps) estimates of the period 1950-2022. A small, intermediate update was required intersessionally by the tropical tunas Species Group (SG-TRO) in relation to yellowfin tuna, to reflect the various updates made to the T1NC at the Data Preparatory Meeting.

As of today, due to the lack of adequate T2CE information (see also the corresponding SCRS catalogues), the CATDIS does not include estimations for the remainder four (out of 13 in total) major species, namely spearfish (SPF), blue shark (BSH), shortfin mako (SMA), and porbeagle (POR). However, and considering the requests in this regard emerging from the various Species Groups, further attempts should be made to recover T2CE information with more complete species catch compositions (containing those four species), to allow estimating CATDIS for these species in the near future.

Through a quick overview of the updated SCRS catalogues, the Subcommittee on Statistics agreed that as of today it is still unfeasible to perform CATDIS estimations for the three main shark species, even when reducing the estimation timeframe to the last twenty years. This because of the almost complete lack of T2CE data for the three species, which is a fundamental piece of information required by the CATDIS estimation process.

The Subcommittee on Statistics acknowledged the additional efforts made by the Secretariat to synchronize the CATDIS estimations with the adopted SCRS statistics in relation to the times series coverage, which will greatly benefit the future work of the SCRS and reduce the number of partial CATDIS updates required intersessionally.

The EFFDIS estimations of Atlantic longline fisheries were first published on the ICCAT website in 2023 (period 2000-2021), as recommended by the Subcommittee on Ecosystems and Bycatch. Since then, they have been updated in line with all the other ICCAT fishery statistics dissemination process.

The Subcommittee on Statistics acknowledged the Secretariat efforts and encouraged the Secretariat to continue with the recovery and improvement of T2CE datasets.

The Subcommittee on Statistics noted that when CPCs provide updates to their T2CE datasets beyond the "3 + 1 years rule", they must then follow the standard SCRS requirements for the revision of historical data which include the provision of a SCRS paper providing details on the updates and the methods used for the data recovery and associated estimations.

3.2 *CAS (catch-at-size) and CAA (catch-at-age)*

The catch-at-size (CAS) management system has not changed in terms of database structures, and associated management tools. During 2024, only the yellowfin tuna CAS was updated by performing a simple update for the period 1969-2022. This estimation was used by the tropical tuna species group on the stock assessment session, mainly to respond to concerns raised by Panel 1.

No major changes were discussed in relation to the current CAS provision requirements. Therefore, the current Subcommittee on Statistics recommendation from 2023 (see [Report of Biennial Period, 2022-23, Part II \(2023\)](#), section 8, Appendix 13) remains in place.

4. Review of data deficiencies and ongoing data recovery plans pursuant to [Recommendation by ICCAT on compliance with statistical reporting obligations \[Rec. 05-09\]](#)

4.1 2023 Report cards with SCRS validation criteria (Filters 1 and 2)

During the last decade the Secretariat has systematically applied the SCRS filtering criteria (Filter 1 and 2, as described in Addendum 2 to the 2022 Secretariat Report on Research and Statistics of 2013 SCRS report, updated by the SCRS in 2016) to validate and accept Task 1 (forms ST01 and ST02) and Task 2 (forms ST03, ST04 and ST05) statistics submitted through those official forms. The filtering criteria are also embedded in each one of these forms.

The results of applying Filter 1 to 2023 data are presented in the SCRS Report Cards included in the 2024 Secretariat Report on Research and Statistics (Tables 1, 2, 3, 4, and 5, with a summary in Figure 1), with more detailed results described in the 2024 Secretariat Report on Research and Statistics [SCI_07/2024]. The SCRS Report Cards remain one of the most important instruments to evaluate the correct adherence of CPCs to the ICCAT reporting requirements. This tool has proven to be very effective to impose strict reporting obligations and enforce minimum data quality standards to improve the work of ICCAT and the SCRS in the future. In addition, the SCRS Report Cards help CPCs to identify their own data deficiencies and provide updates to overcome such deficiencies.

4.2 SCRS Score cards and catalogues of major ICCAT species (last 30 years)

[Rec. 05-09](#) recognized the need to establish clear process and procedures to identify data gaps, particularly those that limit the ability of SCRS to conduct robust stock assessments and to find appropriate means to address those gaps and evaluate the effectiveness of the ICCAT conservation and management measures. This contributes to the request of evaluating how reducing uncertainty can help minimizing the risk of failing to meet management objectives.

The SCRS catalogues are produced to comply with Paragraph 1 of [Rec. 05-09](#). The Secretariat presented in Annex 1 of the 2024 Secretariat Report on Research and Statistics the SCRS catalogues of Task 1 and 2 data availability for the major ICCAT species, by stock, and for the last 30 years (1994 to 2023). The small tuna species SCRS catalogues were also prepared and made available to the SCRS annual meeting. As recommended by the SCRS in 2020, the Secretariat continues to publish the two SCRS catalogues on the [ICCAT website](#), with the latest having been published in January 2024, and summarising the information approved by the SCRS and the Commission in 2023.

An overview of the SCRS score cards, in the format adopted by the SCRS in 2019, is presented in **Table 6** of the 2024 Secretariat Report on Research and Statistics for all major ICCAT fisheries and species and covering the period from 1994 to 2023.

Despite the multiple recommendations made by the Subcommittee on Statistics and by the Species Groups, the reporting of dead discards and live releases (see Section 2.4) continues to be very poor, and this has a negative impact on the accuracy of the estimates of total biomass removals and total mortality needed to conduct robust stock assessments.

Document SCRS/2024/169 addresses the significance of the artisanal fishing sector in Morocco, which plays a crucial role in supporting coastal communities and the national seafood supply. The study, conducted in accordance with [Recommendation by ICCAT to establish minimum standards for fishing vessel scientific observer program \(Rec. 16-14\)](#), focuses on estimating bycatch and discard rates of various species in Moroccan artisanal fisheries, with particular attention to tunas and tuna-like species. It also aims to identify and define key fishing areas within Moroccan Atlantic and Mediterranean waters. The study employs a stratified sampling strategy based on geographical, temporal, and gear-related factors. An innovative web platform has been developed to enhance data management and analysis, featuring interactive maps, data simulation tools, and a centralized information hub. This platform supports the visualization of fishing data and scenario simulation and is currently undergoing development and validation for future use by regulatory and management authorities. Simulated data is exclusively used to streamline the development of the web application's features and to perform testing, serving the same function as real data.

The Group acknowledged and supported the continuation of this project for artisanal small-scale fisheries. Since the project currently works only with simulated data, the Chair reminded the Group that an external review will be required to assess the methodology and data results. In response to a CPC question regarding the future inclusion of information collected using this framework in the ICCAT databases, the Chair noted that this is still a distant prospect. Possible adjustments will need to be made after collecting real data, which will follow an observer-like structure.

Document SCRS/2024/170 presents the development and implementation of a web-based platform designed to monitor and estimate bycatch and discards in Moroccan longline fisheries targeting swordfish in the Atlantic. In response to ICCAT Recommendations [Rec. 16-14](#), the study uses a scientific sampling plan that integrates direct observations by on-board observers with advanced statistical techniques like bootstrapping. The analysis of the data collected revealed significant seasonal variations in catches and provided precise estimates of dead and live discards for the captured species. The platform, built on the Django framework, offers a comprehensive interface for downloading, processing, and visualizing data. This tool is intended to enhance stock assessments and decision-making by providing accurate and detailed information on discards.

Following the presentation of the document, several points were discussed. There were questions about inconsistencies in the reported fishing effort, where travel days are discounted and only some days of a 15-day trip are counted for fishing activity and it was reiterated that longline effort should be reported in terms of the number of hooks. Additionally, there was an inquiry about whether other CPCs could adopt the methodology and if VMS could be used to geolocate sets. It was noted that this information is already recorded by on-board observers.

5. Review of ICCAT data collection forms and templates (statistics and tagging)

SCRS/2024/134 - A proposal to accommodate the sea turtle data request in [Recommendation by ICCAT on the bycatch of sea turtles caught in association with ICCAT fisheries \(combine, streamline, and amend Recommendations 10-09 and 13-11 \(Rec. 22-12\)\)](#)

Recalling [Rec. 22-12](#), and more specifically the additional mandatory data fields required for each detected interaction with marine turtles, the Subcommittee on Statistics acknowledged that the Recommendation lacks clear information regarding: 1) the purpose of submitting the required data, 2) the mechanism to report the data, and 3) whose responsibility is to decide on the reporting mechanism.

The Subcommittee on Statistics discussed about the three possible options, which include: a) reporting data through Annual Reports, b) reporting data through a new statistical form (ST012), and c) modify the existing ST09 form to accommodate for the missing information.

As the first two options were deemed unfeasible or unpractical, the Subcommittee on Statistics agreed on the proposal of including the additional (missing) fields necessary to fulfil the requirements of [Rec. 22-12](#) to sub-forms ST09A and ST09C. However, it was noted that sub-form ST09C is currently *optional* and that therefore it is necessary to change its status to *mandatory* for this proposal to be effective.

For these reasons the Subcommittee on Statistics recommended that the Secretariat work together with the ad-hoc group to modify form ST09 to include the minimum feasible subset of additional information requested by [Rec. 22-12](#), and to determine how to deal with potential discontinuities caused by changing the structure of form ST09. The result of the work of the ad-hoc group will be presented at the 2025 meetings of the Subcommittee on Ecosystems and Bycatch and Subcommittee on Statistics.

The Secretariat gave a presentation on updates to the statistical forms. First, a summary of the updates to the previous year's forms was presented, followed by a proposed modification to the ST06 form. The modification involves establishing five fields for different BCDs that could be involved in a 1st caging at farms, instead of the single field available until now. This modification was supported by the Subcommittee. Lastly, two matters were raised for debate by the Subcommittee: a potential modification to the reporting of the ST07 form, and the issue of maintaining a single code for the species SAI (Atlantic sailfish, *Istiophorus albicans*) and SFA (Indo-Pacific sailfish, *Istiophorus platypterus*) under the code SAI, as there is sufficient documentation supporting that they are the same species.

The Subcommittee on Statistics noted that there is consensus on the necessity of keeping only one species code for SAI (Atlantic sailfish, *Istiophorus albicans*) and SFA (Indo-Pacific sailfish, *Istiophorus platypterus*), as they are likely to represent the same species (*Istiophorus albicans*). The Subcommittee on Statistics suggested that the matter be presented at the SG-Billfish for further discussion and confirmation, and to keep FAO informed of the outcomes in order to update the Aquatic Sciences and Fisheries Information System (ASFIS) list of species (if required).

The Subcommittee on Statistics acknowledged a number of issues raised by CPCs and specifically regarding the reporting of T2CE data when efforts are unavailable for some strata, as well as the need to allow more than one coverage level to be reported in the same form when this includes data for multiple gears.

The Subcommittee on Statistics agreed that the reporting of complete and accurate effort information is a requirement whose importance has been re-iterated by the SCRS, and therefore, form ST03 should be updated to remove the possibility of providing “NO DATA” as one of the available effort units.

The Subcommittee on Statistics recalled how the provision of coverage levels is of great importance for the reconstruction of global fleet efforts and discussed about several possible options to report multiple coverage levels in a single form ST03 when catch and effort for more than one gear group is provided in the form. Eventually, the Subcommittee on Statistics identified two feasible approaches: 1) including multiple coverage fields in the form header (similarly to what already done in form ST09), or 2) adding a separate worksheet in form ST03 to explicitly report an (unbound) number of gears / coverage associations.

The Secretariat gave a presentation on new tools for disseminating statistical information. These tools are based on R scripts and Shiny apps, offering great flexibility in querying data. They provide simple data visualization, making it easy to view large datasets. Additionally, some tools have the functionality to export data stored in ICCAT-DB related to statistical forms ST*.

The Subcommittee on Statistics acknowledged that the processes managing statistical data validation and storage have been almost entirely automated and will further benefit from the envisaged integration within IOMS, noting that data dissemination, including the preparation of datasets for the scientific meetings, still requires substantial manual work.

In light of this, the Subcommittee on Statistics welcomed the approach proposed by the Secretariat and consisting in the development of software libraries written in the R statistical language (that support process automation and output consistency) complemented by interactive web applications developed using R-Shiny. The combination of these two *artifacts* allows implementing more effective means to handle and disseminate standard statistical information (T1 and T2 datasets, SCRS catalogues, maps, charts, trend analysis, etc.) and increase the reproducibility of the results.

The Subcommittee on Statistics highlighted the importance of assigning timestamps to all public information and datasets downloaded from the new interactive applications, to uniquely identify the point in time when data were known to be current.

The Subcommittee on Statistics congratulated the Secretariat for the extensive work carried on so far, recognized the potential of the presented approach, and agreed that the presented application prototypes can effectively replace the existing dissemination tools as currently available through the ICCAT website, consisting in dynamic query facilities (for T1NC and T2CE datasets) and standalone, downloadable Microsoft Access databases.

Considering the need for further developments (following the feedback provided by CPCs and the SCRS), as well as the necessity to deploy the applications on a dedicated cloud infrastructure, the SC-STAT recommended that additional funds are set aside specifically for these purposes.

6. Brief overview of ICCAT Online Management System (IOMS) work

The IOMS implementation process is governed by the ICCAT Online Reporting Technology Working Group (WG-ORT), whose mandate was established under [Recommendation by ICCAT for the development of an](#)

online reporting system (Rec. 16-19) and extended through Recommendation by ICCAT to continue the development of an integrated online reporting system (Rec. 19-12).

In 2024, the Meeting of the Online Reporting Technology Working Group (WG-ORT) was held (see the [Report of the Meeting of the Online Reporting Technology Working Group \(WG-ORT\)](#)), where the existing workplan was reviewed and the next phases were planned. The system development during this year focused on the Vessels modules, including the Fisheries Language for Universal Exchange (FLUX) module, and the Form Manager, with both modules expected to be ready for production launch by early 2025. Additionally, the development team continued to support and enhance the already developed modules. The WG-ORT commended the progress made toward the main objectives of the IOMS: to simplify the data provision process and to utilize the information stored in the IOMS to produce high-quality reports and data summaries.

For 2024, a total of three workshops were planned: two on the Vessel module (April 30 and October 7) and one on the Form Manager (24 June). These workshops were designed to help IOMS users become familiar with the developing modules and to allow the development team to address any issues that might arise during this testing phase.

For the IOMS development period 2024/2026, the European Union (EU) is in the process of providing two complementary contributions with an extraordinary budget to support the development of the IOMS vessel record module and the integration of the FLUX-TL system for managing EU vessels (and potentially other ICCAT CPC vessels), as well as a module dedicated to the management of Task 1 Nominal Catches (T1NC) and the associated compliance table, and to design and plan the initial steps of the module responsible for Task 2 Catch and Effort (T2CE). Additionally, the Global Environment Facility (GEF)/Areas beyond National Jurisdiction (ABNJ) Project to support the functionality of exchanging IOMS information with third parties by leveraging web services is continuing its work.

This Subcommittee has maintained a strong collaboration with the WG-ORT from the beginning. The completion of the Forms Manager module will enable online reporting of information, provide users with an easier way to check the status of submitted information, and reduce the email burden for CPCs and the Secretariat. Additionally, the development of the Task 1 Nominal Catches (T1NC) module, which will begin development in early 2025, will significantly improve the understanding of the information reported by CPCs on this matter, facilitating communication. This Subcommittee recognizes the crucial importance of the IOMS for the future of ICCAT and reiterates its full support for the continued implementation of the IOMS.

The Subcommittee expressed concern about the functioning of data submission during the transition period between reporting Task 1 Nominal Catches (T1NC) forms via email and through IOMS. The Secretariat clarified that the Form Manager, once the testing period is over, will be responsible for managing submissions from the CPCs to the Secretariat. The T1NC module (as well as the T2CE) will automatically process the information, notify users of any issues with their submissions, and provide a visual representation of the data reported to the system, along with their historical data.

7. Ongoing pilot project to test the use of stereoscopic cameras on BFT first transfer and the automation of video footage analysis

Most of the catches taken under the total allowable catch for eastern Atlantic and Mediterranean bluefin tuna (BFT) allocated by the ICCAT are destined for fattening farms (live BFT).

Monitoring and control of the live BFT fishery relies heavily on video recordings of the various live BFT transfer and caging operations that take place underwater. Each transfer must be recorded underwater using stereoscopic (SC) and/or conventional cameras, including first transfers, subsequent transfers, caging, control transfers, carry-over transfer analysis, and intra-farm and inter-farm transfers.

In recent years, there have been important technological advances that may be useful in this area. These technologies are promising but need to be tested to see if they can be used to complement, supplement or replace current techniques for estimating specimen length and weight, as well as manual analysis of video recordings.

In order to address these problems, at the 23rd Special Meeting of the Commission in 2022, the European Union proposed a pilot project which was approved by ICCAT through [Resolution by ICCAT establishing a pilot project to test the use of stereoscopic cameras during first transfer and the automation of video footage analysis \(Res. 22-15\)](#) and the automation of video recording analysis.

Accordingly, the Secretariat has awarded a short-term contract regarding two pilot projects, which have the following objectives:

- To test the use of stereoscopic cameras during the first transfers from the purse seiners or traps to the transport cages in order to be able to estimate at this stage the weight of the bluefin tuna caught.
- Test the use of software and artificial intelligence (AI) to automatically determine the number of individuals and their size, allowing estimation of their weight. For this second objective, both the videos obtained in the first objective and the videos provided by the operators themselves who have offered to collaborate in the project would be used.

Given the very different characteristics of each objective, it was decided to carry out two separate tenders to cover the two objectives described. The first was awarded to the Universitat Politècnica de València (UPV). The second was also awarded to the UPV and, given the conditions offered, in parallel to the company AQ1. This will allow a more extensive analysis of the data, as well as being able to establish comparisons between the two systems. The contractors will provide presentations on these pilot studies to the Bluefin tuna Species Group September 2024 meeting.

8. Responses to the Commission (Rec. 16-14)

The SCRS will advise the Commission on the suitability of the alternative approach proposed by CPCs, Rec. 16-14 para 4b

Background: *4b) Notwithstanding paragraph a), for vessels less than 15 meters, where an extraordinary safety concern may exist that precludes deployment of an onboard observer, a CPC may employ an alternative scientific monitoring approach that will collect data equivalent to that specified in this Recommendation in a manner that ensures comparable coverage. In any such cases, the CPC wishing to avail itself of an alternative approach must present the details of the approach to the SCRS for evaluation. The SCRS will advise the Commission on the suitability of the alternative approach for carrying out the data collection obligations set forth in this Recommendation. Alternative approaches implemented pursuant to this provision shall be subject to the approval of the Commission at the annual meeting prior to implementation.*

Morocco presented document SCRS/2024/169 with a new methodology using fisherman self-reporting through a mobile phone application to report by-catch and discards.

During 2024, Morocco has made a significant effort in terms of data collection on artisanal fisheries and holding meetings and consultation with fishermen to ensure the success of this approach implementation. This alternative approach aimed at estimating discards covers artisanal fisheries taking place in small boats, less than 7 meters in length where onboard observers cannot be deployed.

The Subcommittee recognized that the new proposed methodology is at present the best possible alternative to an onboard observer program in the multi-species artisanal fisheries where observer coverage is not possible. Even though this approach is a clear enhancement on the portside enquiries the Committee pointed out that this is not a true replacement for an observer program since the bycatch and discards estimates are still self-reported and the submitted data cannot be validated.

9. Workplan for 2025

The Secretariat has been working since 2017 on the ICCAT Integrated Online Managements System (IOMS). After being adopted by the SCRS and the Commission, the Commission's Online Reporting Technical Working Group (WG-ORT) has overseen the specifications and the governance of all the development

process. The Meeting of the Online Reporting Technology Working Group (WG-ORT) held on 7-8 February 2023 (see [Report of the Meeting of the Online Reporting Technology Working Group \(WG-ORT\)](#)) delineated the content of the future work to be presented at the 28th Regular Meeting of the Commission for revision and approval. The IOMS went into production on 1 August 2021, and currently manages the ICCAT CPCs Annual Reports. The IOMS is a crucial long-term ICCAT project that requires the full involvement/commitment of the Secretariat.

Additionally, the following tasks represent ongoing database improvements and maintenance that will continue throughout 2024 and beyond. Priority tasks for 2024 include:

- Finalize the upgrade of all ICCAT-DB systems from MS-SQL server 2016 to MS-SQL server 2022;
- Improve the client applications used to manage the databases of the ICCAT-DB system;
- Continue the development of the statistical/tagging dashboards (dynamic querying);
- Continue the development of the tagging database for both conventional and electronic tagging;
- Continue the development of the biological sampling database (to include data recovery/integration);
- Continue the standardization of the electronic forms (TG: tagging forms, CP: compliance forms);
- Extend the automatic data integration tools to cover all standard electronic forms;
- Continue the development of the geographic information system (GIS) project to standardize all pertinent geo-reference data available in the ICCAT-DB;
- Continue the adaptation/migration of all ICCAT-DB system databases to the new ICCAT IOMS system;
- Continue the development of software libraries (in R, and possibly Python) to standardize access and management of ICCAT public datasets;
- Continue the development of interactive applications to improve the dissemination of and simplify access to the core ICCAT public datasets through the web (T1 and T2 datasets, CATDIS, etc.);
- Study options to normalise in a single format (CSV) the existing agreed flat-form formats to provide Task 2 datasets (T2CE, T2SZ and T2CS).

The Convener of the Subcommittee proposes holding a workshop in 2025 to address issues related to data reporting. This workshop will be for statistical and tagging correspondents and would take place around one month before the data submission deadline. Regarding the possibility of repeating this workshop annually, the Subcommittee on Statistics agrees to hold this initial workshop and evaluate its usefulness for potential future workshops.

10. Recommendations (with special emphasis on those with financial implications)

10.1 Review of Recommendations from 2024 Intersessional meetings

The Subcommittee reviewed the recommendations for statistics from the 2024 Intersessional meetings. The following recommendations were endorsed by the Subcommittee:

General recommendations to the Commission

Albacore (SCI-71)

The Group recommends that an ad hoc group focus on the Mediterranean albacore fisheries statistics with the objective of having an overall and comprehensive review of the historical catch Task 1 and catch and effort Task 2 CE series. It should focus on historical catches associated with gears like purse seines, gillnets, etc., and consider catches that may have not been reported historically before monitoring programs were in place. This ad hoc group will report to the Albacore Species Group on research projects, progress, and general recommendations on the historical series for the next assessment(s) of Mediterranean albacore, including potential alternative catch scenarios to be considered in future assessments or MSE efforts.

Sharks (SCI-74)

Considering the need to improve stock assessments of pelagic shark species impacted by ICCAT fisheries and bearing in mind [Recommendation by ICCAT to replace Recommendation 16-13 on improvement of compliance review of conservation and management measures regarding sharks caught in association with ICCAT fisheries \(Rec. 18-06\)](#) as well as the various previous recommendations which made the submission

of shark data mandatory, the Committee strongly urges the CPCs to provide the corresponding statistics, including discards (dead and alive), of all ICCAT fisheries, including recreational and artisanal fisheries, and to the extent possible non ICCAT fisheries capturing these species, the Committee considers that a basic premise for correctly evaluating the status of any stock is to have a solid basis to estimate total removals.

Small tunas (SCI-75)

The Committee recommended that Statistical Correspondents and/or national scientists revise, update, complete, and submit their small tuna Task 1 nominal catches (T1NC) series to the ICCAT Secretariat. This revision should consider Appendix 5 (SCRS catalogues), the split of “unclassified” gear catches to specific gear codes, and the completeness of Task 1 gaps identified. The Statistical Correspondent and/or national scientists of CPCs should correct inconsistencies identified in T2SZ series. For the 13 species of small tunas, the Task 2 size data (T2SZ) revision should have as reference, the stratification of the samples by gear, month, 1°x1° or 5°x5° squares, and straight fork length (SFL) size classes of 1 cm (lower limit). CPCs should further improve their estimates of total catches, as there are still important gaps in the basic data available. These data are required as inputs for most data-limited stock assessment methods. The ICCAT Secretariat should continue its work on the data recovery and making inventories of tagging data for small tuna species. This process will require active participation of the national scientists who hold such data.

Swordfish (SCI-76)

The Group recommended that historical swordfish catch in the Palestinian area, documented in [SCRS/2024/065](#), be reviewed by the Subcommittee on Statistics, and following the Subcommittee’s approval, included in the ICCAT database.

It was noted that some bycatch of ICCAT species in the Gulf of Guinea is reported to the Fishery Committee for the Eastern Central Atlantic, [CECAF](#) (*Comité des Pêches pour l’Atlantique Centre-Est, COPACE*) but not to ICCAT. Accordingly, ICCAT CPCs should be reminded that information reported to CECAF, on swordfish and any other bycatch ICCAT species must be also reported to ICCAT as part of their obligatory ICCAT submission. Also, ICCAT may wish to engage with CECAF to get this information.

Tropical tunas (SCI-77)

The Group recommended that resources be identified to develop a more systematic and reproducible approach for the estimation of CAS, and noting the limitations of the current approach, also recommended that alternative methodologies be considered to address Commission requests that have typically may currently require a CAS matrix.

10.2 Recommendations of the Subcommittee for 2025

Recommendations with financial implications

Considering the need for further developments (following the feedback provided by CPCs and the SCRS), as well as the necessity to deploy the new public data dissemination applications on a dedicated cloud infrastructure (monthly renting of cloud servers with the required software, with potential to scale it up as required), the Subcommittee on Statistics recommends that additional funds are set aside specifically for these purposes.

Recommendations without financial implications

For the Secretariat to work together with the ad-hoc group to modify form ST09 to include the minimum feasible subset of additional information requested by [Rec. 22-12](#), and to determine how to deal with potential discontinuities caused by changing the structure of form ST09. The result of the work of the ad-hoc group will be presented at the 2025 meetings of the Subcommittee on Ecosystems and Bycatch and Subcommittee on Statistics.

The Subcommittee on Statistics recommends that scientist of all CPCs interested in participating in the ad-hoc group to modify the ST09 form to address the data requirement [Rec. 22-12](#) to contact the Secretariat before the end of 2024.

The Subcommittee on Statistics recommends that scientist of all CPCs interested in participating in the ad-hoc group to explore alternatives that could improve the form of the Task 1 Tables in the Executive Summaries to contact the Secretariat before the end of February 2025.

The Rapporteur of each Species Group is requested to forward to the Convenor of Subcommittee on Statistics the recommendations that concern specifically and are required to be endorsed by Subcommittee on Statistics.

The Subcommittee on Statistics recommends that a database be made by the Secretariat to handle the SCRS recommendations of the SCRS subsidiary bodies. The recommendation recovery process must be made backwards to cover the last 10 years.

11. Other matters

During the meeting, there were no issues to address under this section.

12. Adoption of the Report

The report of the meeting [will be/was] adopted during the SCRS Plenary meeting.

2024 Tentative Agenda

1. Opening, adoption of Agenda and meeting arrangements
2. Summary of fisheries and biological data submitted during 2024 (Tasks 1, 2 and 3), including historical revisions
3. Summary of ICCAT Secretariat's standard (yearly based) datasets estimations
4. Review of data deficiencies and ongoing data recovery plans pursuant to [Rec. 05-09](#)
5. Review of ICCAT data collection forms and templates (statistics and tagging)
6. Brief overview of ICCAT Online Management System (IOMS) work
7. Ongoing Pilot project to test the use of stereoscopic cameras on BFT first transfer and the automation of video footage analysis
8. Responses to the Commission ([Rec. 16-04](#))
9. Workplan for 2025
10. Recommendations (with special emphasis on those with financial implications)
11. Other matters
12. Adoption of the Report