

# Large Pelagics Regional Coordination Group



**Regional Coordination Group**  
Large Pelagics

## Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017

on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast)

## Commission Delegated Decision (EU) 2021/1167 of 27 April 2021

establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors from 2022

## Commission Implementing Decision (EU) 2021/1168 of 27 April 2021

establishing the list of mandatory research surveys at sea and thresholds as part of the multiannual Union programme for the collection and management of data in the fisheries and aquaculture sectors from 2022

## Commission Implementing Decision (EU) 2022/39 of 12 January 2022

laying down rules on the format and timetables for the submission of national work plans and annual reports for data collection in the fisheries and aquaculture sectors, and repealing Implementing Decisions (EU) 2016/1701 and (EU) 2018/1283

# **Large Pelagics Regional Work Plan for data collection in the fisheries sectors**

**2025-2027**

Version 1.1

30/08/2024

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## SECTION 1: GENERAL INFORMATION

### Data collection framework at regional level

*General comment: Use this text box to describe how data collection is organised in your RCG (countries involved, contact information, max 1000 words).*

As agreed during RCG 2022 decision meetings, this Regional Workplan is the first official regional programme for the period 2025-2027.

The Regional Coordination Group on Large Pelagics (RCG LP, <https://www.fisheries-rcg.eu/rcg-lp/>) is composed of the 9 European countries currently involved in Large Pelagics (LP) fisheries: Croatia, Cyprus, France, Greece, Ireland, Italy, Malta, Portugal and Spain. In addition, several end users (like ICCAT, IOTC or ICES) and third countries (Senegal and Seychelles) are involved regarding their relations with the LP fisheries and work associated. In terms of structure, 5 Intersessional Subgroups (ISSGs, linked to different LP fisheries under the umbrella of the RCG LP) compose the global architecture of the group: the tropical tuna, longlines fisheries outside Mediterranean Sea, Mediterranean Sea large pelagics fisheries, bluefin tuna and baitboat/pole and line ISSG. Moreover, one ISSG focussing on the development of the future regional database for the RCG LP was established in 2022 based on a short time mandate. In contrast to many other RCGs, which have a specific area of interest, the RCG LP have a worldwide area of relevance. In other word, it encompasses all the area covered by the tunas Regional Fisheries Management Organisations (RFMOs) which currently include ICCAT, IOTC, WCPFC and IATTC. Related to the RCG LP internal coordination, one annual meeting is organised, normally in the midyear. All along the year, the ISSGs work in autonomy with at least one meeting/coordination at the end of the year to define the general workplan of the next year (according to the outputs of the RCG LP annual meeting and the associated EU meetings like the decision meeting).

The RWP Large Pelagics 2025-2027 contains the following textboxes and tables:

- **Section 1: General information**
  - Textbox 1B: Other data collection activities
    - Table 1.2: Regional and International coordination
- **Section 2: Biological data**
  - Table 2.1: List of required species/stocks [to be updated in RCG/TM 2023]
  - An addition of a control table is proposed for countries to compare declared landings in the RDB and in EUROSTAT; this is only for information purpose. [to be updated in RCG/TM 2023]
  - Textbox 2.5: Sampling plan description for biological data
- **Section 3: Fishing activity data**
  - Textbox 3.1: Fishing activity variables data collection strategy
- **Annex 1.1: Quality report for biological data sampling scheme**
  - T3 programme
  - Sampling biological variables at port

#### Process for filling NWP

As a general rule, the information relevant to a given country (use the filter on the column MS to select your country) in the tables need to be copied and paste to the relevant tables of the NWP. The information given in textboxes and annexes are to be referenced in the relevant textboxes and/or tables of the NWP and should not be duplicated. Specificities regarding Table 2.1 are given as follows:

Table 2.1 (list of required stocks), is not currently available but planned to be included in the RWP 2025-27 with the most recent reference years, i.e. 2020-2022. For The RWP Large Pelagics, the proposed information

will be derived only from EUROSTAT. The work initiated in Fishn'Co has continued and is about to be finalised in a tool (<https://github.com/OB7-IRD/rwptool>) which will enable full transparency and easiness of maintenance and implementation.

### **Text Box 1A: Test study on CKMR on bluefin tuna**

*General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex. This text box applies to the work plan and the annual report (max 900 words per study).*

The Atlantic-Wide Research Programme for Bluefin Tuna (ICCAT GBYP) has confirmed the feasibility of using Close-kin Mark Recapture (CKMR) and epigenetics for age determination for the eastern stock of Atlantic bluefin tuna. The full feasibility study will be presented to the SCRS in 2024, when spatially modelled and intensive biological sampling for genetic purposes in the Mediterranean Sea is expected.

### **Text Box 1B: Other data collection activities**

*General comment: This text box applies to the work plan and the annual report. Use this text box to provide information on other data collection activities that relate to your EMFAF operational programme and need to be included in the work plan and the annual report. Describe activities that are funded by the DCF but fulfil objectives under other EMFAF priorities, like marine knowledge, or activities funded by the DCF, but without a direct link to the EU MAP specific requirements or WP template tables, like freshwater fisheries. You can also include one-off specific studies for a particular end-user need that do not enter the regular data collection (max 900 words per activity).*

#### **RCG's Secretariat**

##### **1. Aim of the activity**

Support the operation and functioning of the RCG's Secretariat for a fluent regional coordination of data collection activities, as stipulated by Article 9 of the DCF Regulation (EU) 2017/1004.

##### **2. Duration of the activity**

2025-2027

##### **3. Methodology and expected outcomes of the activity**

The Secretariat's organizational structure has been set up and pilot tested throughout the SecWeb project (MARE/2020/08 grant). The key functions of the RCG's Secretariat have been determined in close collaboration with all RCGs, in particular with RCG and Intersessional Subgroups (ISSGs) chairs. A business model has been developed. In addition, good practices in communication within and among the RCGs have been promoted and installed. The overall capacity to reach out to a wider public and increase the visibility of the work and output of the RCGs has been boosted with the development of a dedicated website and the consolidation of a visual identity.

RCG chairs and the RCG's network have acknowledged the added value of having an RCG's Secretariat to the overall aim of improving data collection activities.

Based on the SecWeb project outputs the proposed activities will connect the whole RCG network and stakeholders to work together on common goals. The Secretariat provides fluent administrative and

coordination support for more efficient regional coordination liberating national experts involved in data collection activities from heavy burden administrative tasks.

Overall expected outcomes:

- A full-time dedicated Secretariat support service for the RCGs enables a consistent approach to organising RCG activities, facilitates communication, and enhances the intersessional work, supporting also the work of sub-groups.
- A dynamic and permanently updated website (<https://www.fisheries-rcg.eu/>) will be kept available including as features:
  - Integration – allowing seamless synchronization with third-party information needs and requests;
  - Responsive display – to serve content across multiple devices, screens, and browsers;
  - User experience- maintaining a satisfactory user experience throughout the website sections;
  - Accessibility – To any interested visitor in a user-friendly way across the website sections;
  - Retention- keeping visitors coming back to the website;
  - Links to relevant restricted access sites and virtual environments.

The Visual identity for the RCGs is increasingly consolidated and visibility and understanding of the work by the RCGs is enhanced for the relevant stakeholder groups.

A regularly updated Stakeholders' database improves the communication function among the RCGs' experts and the stakeholders' community.

Internal communication protocols and helpdesk in place makes it easier for any newcomer to efficiently join, adopt responsibilities, and contribute to the RCGs objectives and work commitments.

The public description of the secretariat functions, operational working protocols and commitments will build trust and enhance the whole network transparency and accountability.

## **Regional data base development**

### *1. Aim of the activities*

To contribute to the development and operation of the future Regional Database for Large Pelagics (LP) data.

### *2. Duration of the activity*

2025 – 2027

### *3. Methodology and expected outcomes of the activity*

The development of a Regional Database (RDB) is a crucial tool in achieving the goals of regional coordination. Regarding the case of LP among there is a division in preference of the RCG associated countries between two ongoing development systems: the Regional Database & Estimation System (RDBES) and the Med&BS RDBFIS (regional database for the Mediterranean and Black Seas). These country preferences are directly influenced by their specificities in terms of needs and participation to other RCG and/or RFMOs. To progress on this topic, an ISSG dedicate to the development of the future RDB for Large Pelagics was launched in 2022. So far no consensus has been reached, except for the desire expressed by all MS to avoid creating a new system and focus all effort in joining an existing one. Future discussions and associated actions will shape the future of this topic for LP and will determine the implications among RCG ISSGs.

## **Regional Coordination taking place in ISSGs and pan regional cooperation between RCGs**

1. *Aim of the activities*

Intersessional work at the RCG LP

2. *Duration of the activity*

2025 – 2027

3. *Methodology and expected outcomes of the activity*

Regional cooperation is meant to improve the efficiency of data collection through sharing of expertise, data, best practices, knowledge and collaborative tasks. The RCGs bring together several Member States to coordinate planning and implementation of data collection. Their workplan spans across the year, from one round of the annual technical meetings to the next, and is supported with the setup of the Intersessional Subgroups.

In these subgroups the experts concentrate on specific Thematic Focus Areas, which sometimes they can be pan-regional. During the relevant RCG's technical meetings, the different ISSGs present progress and hurdles encountered across the period and propose the update of their Terms of Reference with the tasks and targets for the new intersessional period for approval. The work carried out by ISSGs is essential for RCG technical meeting preparation and meeting discussions. Member States are requested to nominate experts in the relevant ISSG who should allocate a significant amount of time (on average 40 hours per ISSG) for carrying out the work during the intersessional year.

The ISSG may change over the years as tasks are completed and new needs are emerging.

## SECTION 2: BIOLOGICAL DATA

### Text Box 2.4: Recreational fisheries

*General comment: This text box fulfils Article 5(2)(a), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II, point 2.2 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used for the data collected on marine and freshwater recreational catches (max 900 words per region).*

Several discussions arise during RCG LP annual meetings regarding the thematic of the recreational fisheries (mainly in relation to and ISSG working on that topic under the umbrella of the RCG Mediterranean and Black Sea), but no coordination action was established so far.

### Text Box 2.5: Sampling plan description for biological data

*General Comment: This text box fulfils Article 5 (2)(a) and (b), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2, point 2.1(a) and 4.1 of the EU MAP Delegated Decision annex. This text box complements Table 2.5 (one text box, max. 1 000 words, per region/RFMO/RFO/IO).*

#### **Tuna Sampling On Shore scheme:**

Described in the annex 1.1, the Tuna Sampling On Shore scheme aiming at collecting length samples and species composition from commercial landings on foreign shores of purse seiner (PS) and bait boat (BB) for all tropical tuna species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers two other regions which are managed by tuna RFMOs (IOTC and ICCAT). The sampling protocol has been jointly developed by Spain and France. For the unique vessel associated to the Italian fleet, collaboration is ongoing between France and Italy to optimise the data collection.

#### **Observe scheme:**

As outlined in the annex 1.1, the sampling scheme is designed to monitor at sea discards of target species (e.g., tunas,) and retained and discarded bycatch from the French, Italian and Spanish tropical purse seine fishery operating in the Atlantic and Indian oceans. The sampling scheme covers two tropical regions governed by tuna RFMOs: IOTC and ICCAT.



## SECTION 3: FISHING ACTIVITY DATA

### **Text Box 3.1: Fishing activity variables data collection strategy**

*General comment: This text box fulfils Article 5 (2)(c), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 3.1 of the EU MAP Delegated Decision annex. It is intended to describe the method used to derive estimates on representative samples where data are not to be recorded under the Control Regulation (EC) No 1224/2009 or where data collected under Regulation (EC) No 1224/2009 are not at the right aggregation level for the intended scientific use. Text Box 3.1 should be filled only in case complementary data collection is planned (max. 900 words).*

No official coordination among RCG LP was established regarding data collection of fishing activity variables. Nonetheless, for several years, informal collaboration was established between France, Spain and Seychelles:

- In ICCAT and IOTC meetings, a collaboration exists to present summarised time series (each time actualised with the current year) of fishing activity variables. In addition, several developments are ongoing to increase and facilitate collaboration, like the development of a common R package called fishi (FISHeries Indicators, <https://github.com/OB7-IRD/fishi>).
  - o Lerebourg, Clara, Mathieu Depetris, Julien Lebranchu, et IRD - Ob7 Observatory of Exploited Tropical Pelagic Ecosystems. « Fishi: Package Fisheries Indicators ». Zenodo, 30 juillet 2024. <https://doi.org/10.5281/zenodo.13134074>.
- Furthermore, coordinated data collection of vessel information for the Spanish and French fleets engaged in tropical tunas PS is in place. This collaboration is facilitated through the exchange of an excel file, called TURBOBAT, which is updated continuously throughout the year.

## SECTION 4: IMPACT OF FISHERIES ON MARINE BIOLOGICAL RESOURCES

### **Text Box 4.2: Incidental catches of sensitive species**

*General Comment: This text box fulfils Article 5(2)(a) and (b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2 point 4.1 of the EU-MAP Delegated Decision annex. This text box complements Table 2.5 (One text box (max. 1 000 words) per region/RFMO/RFO/IO).*

Several measures are implemented within each RFMO (mitigation measures, etc.) tailored to the specific gears and areas of fishing. Data are registered by scientific observers and reported to the respective RFMO.

The on-board sampling scheme aiming at monitoring the French, Italian, and Spanish tropical purse seine fisheries operating in the Atlantic and Indian oceans includes sensitive bycatch species. The sampling scheme covers two tropical regions governed by the RFMOs: IOTC and ICCAT. The sampling protocol has been collaboratively developed by Spain and France. In the case of the unique Italian vessel operating in the area, collaboration is ongoing between France and Italy to facilitate data collection.

### **Text Box 4.3: Fisheries impact on marine habitats**

*General comment: This text box fulfils Article 5 paragraph 2(a) and 2(b), Article 6 paragraph 3(a), 3(b) and 3(c) of Regulation (EU) 2017/1004 and Chapter 2, section 4.2 of the EU MAP Delegated Decision annex. It contains information on additional studies on the fisheries impact on marine habitats. This text box applies to the work plan and the annual report (max 900 words per study, max 900 words per study).*

No significant coordination has been established for LP species regarding fisheries impacts on marine habitats. Furthermore, several initiatives, are underway at national levels, such as stomach sampling or maturity staging.

Croatia will develop a reliable DNA metabarcoding protocol by the end of 2025 for the analysis of tuna and swordfish stomach contents aiming to quantify relative diet composition and prey selectivity based on presence-absence inventories, considering ontogenetic preferences of the fish.

Coordination on this subject should be discussed among RCG LP members in the near future.

## ANNEX 1.1 - QUALITY REPORT FOR BIOLOGICAL DATA SAMPLING SCHEME

The quality report fulfils Article 6(3)(d) of Regulation (EU) 2017/1004. This document is intended to specify data to be collected under Chapter II, point 2 of the EU MAP Delegated Decision annex: Biological data on exploited biological resources caught by Union commercial and recreational fisheries. Use this document to state whether documentation in the data collection process (design, sampling implementation, data capture, data storage, sample storage and data processing) exists and identify where this documentation can be found. Names of sampling schemes and strata shall be identical to those in Tables 2.2, 2.3, 2.4, 2.5, 2.6 and 4.1 of the WP/AR. In case of quality information on scientific surveys, use the survey acronym as a sampling scheme identifier. For mandatory surveys, refer to Table 1 of the EU MAP Implementing Decision annex, see also MasterCodeList 'Mandatory survey at sea'.

<b>MS:</b> FRA - ESP - ITA
<b>Region:</b> Other regions
<b>Sampling scheme identifier:</b> TunaSamplingOnShore
<b>Sampling scheme type:</b> Commercial fishing trip
<b>Observation type:</b> SciObsOnShore
<b>Time period of validity:</b> from 1998 onward
<p><b>Short description (max 100 words):</b></p> <p>The sampling scheme aiming at collecting length samples and species composition from commercial landings on foreign shores of purse seiners (PS) and baitboats (BB) operating in tropical areas for all tuna species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers two other regions which are governed by tuna RFMOs (IOTC and ICCAT). The sampling protocol has been jointly developed by Spain and France. For the unique vessel associated to the Italian fleet, collaboration is ongoing between France and Italy to optimise the data collection.</p>
<p><b>Description of the population</b></p> <p><b>Population targeted:</b></p> <p>The population targeted are the major tropical tuna stocks of Atlantic and Indian ocean exploited by the French, Spanish and Italian PS and BB fishery. The primary sampling unit is the vessel, PS and BB of the corresponding fleet.</p> <p><b>Population sampled:</b></p> <p>The sampled population are the major tropical tuna stocks of Atlantic and Indian ocean exploited by the French, Spanish and Italian PS and BB fishery landed in major ports. Only major ports are covered by the sampling scheme: Dakar (Senegal), Abidjan (Côte d'Ivoire) and Victoria (Seychelles). The sample design excludes landings in minor ports.</p> <p>Major tropical tuna species targeted are yellowfin tuna (<i>Thunnus albacares</i>), bigeye tuna (<i>Thunnus obesus</i>), skipjack tuna (<i>Katsuwonus pelamis</i>) and albacore tuna (<i>Thunnus alalunga</i>).</p> <p><b>Stratification:</b></p> <p>Population is stratified according to four features:</p> <ul style="list-style-type: none"> <li>- Population stratified in 2 geographical lots: "Atlantic Ocean Central East and West" (FAO areas 34, 41 and 47) and "Indian Ocean" (FAO areas 51 and 57). Each lot is governed by a dedicated tuna RFMO: ICCAT and IOTC, respectively.</li> <li>- The fisheries are the PS/BB. Each fisheries have its own organisation and dedicated catches.</li> <li>- Port</li> </ul>

- Vessel

## Sampling design and protocols

### Sampling design description:

In the case of tropical tuna fisheries, it is imperative to estimate the species composition of landings insofar as these are weighted according to commercial categories based more on length size than on species, which is a major source of bias. The catch for each species can be estimated by crossing information from fishing logbooks, VMS data and information about landings provided by the producer organisation, as well as from the scientific sampling of species composition at the landing site. Sampling is carried out concurrently in major ports. All vessels (PSU) and almost every landing (SSU) are covered and wells (TSU) within landings are selected according to quality criteria (fishing mode, homogeneity in species composition). Finally simple random sampling is performed on selected wells. The aim of such hierarchical design is to cover both the spatial and temporal dimension of the catch by the fisheries. This involves a minimum number of samples for each stratum and a predetermined population of individuals for each sample. Adherence to these procedures results in an important number of sampled and measured individuals, this arises from the fact that to achieve a reasonable level of precision for the estimation of the species composition it is necessary to examine many individuals for each sample (500 for log sets, 200 for free school sets).

### Is the sampling design compliant with the 4S principle?

Y

### Regional coordination:

The sampling scheme is analysed in joint workshops (T3 sub-ISSG) in the frame of RCG Large Pelagic, with other scientific institutes using the same methodology (IEO for Spain, SFA for Seychelles) and IRD for France.

### Link to sampling design documentation:

Báez, J.C., M<sup>a</sup>.L. Ramos, M- Herrera, H. Murua, J.L. Cort, S. Deniz, V. Rojo, J. Ruiz, P.J. Pascual-Alayón, A. Muniategi, A. Perez San Juan, J. Ariz, F. Fernández & F. Abascal (2020). Monitoring of Spanish flagged purse seine fishery targeting tropical tuna in the Indian ocean: Timeline and history. *Marine Policy*, 119: 104094. <https://doi.org/10.1016/j.marpol.2020.104094>

Duparc, A., P. Cauquil, M. Depetris, P. Dewals, D. Gaertner, A. Hervé, J. Lebranchu, F. Marsac, and P. Bach. 2018. Assessment of accuracy in processing purse seine tropical tuna catches with the T3 methodology using French fleet data. Case of the French fleet in Indian Ocean. Pages 1–19 Report of the 20th session of the IOTC Working Party on Tropical Tunas. IOTC, Victoria, Seychelles [10.5281/zenodo.3255565](https://zenodo.org/record/3255565)

Pianet R., P. Pallares and Ch. Petit, 2000. New sampling and data processing strategy for estimating the composition of catches by species and sizes in the European purse seine tropical tuna fisheries. [IOTC-WPDCS/2000/10](https://www.iotc.int/WorkingPartyDocs/2000/10)

### Compliance with international recommendations:

Yes, the sampling design and protocols follow the RFMOs guidelines of sampling.

### Link to sampling protocol documentation:

P. Bach et al., « Sampling on-shore procedures for tropical tuna landed by purse seiner in the Atlantic and Indian oceans » (September 2018), [fdi:010075957](https://doi.org/10.1007/978-94-007-5957-7)

### Compliance with international recommendations:

Yes, the sampling design and protocols follow the RFMOs guidelines of sampling.

## Sampling implementation

### Recording of refusal rate:

Y

**Monitoring of sampling progress within the sampling year:**

For onshore on foreign shores, the sampling design and protocols follow the RFMOs guidelines of sampling. Outliers and anomalous registrations have been detected using statistical techniques and routinely applications which avoid their input.

A meeting of a steering group comprising IRD and sampling companies is held on a semester basis. The mandate of the steering group is to discuss the realisation, address the main issues encountered and prepare for the next semester.

IEO is in close communication with the sampling teams, and organising the work together.

**Data capture**

**Means of data capture:**

The capturing of the fisheries landings and sampling data on foreign shores is managed at national level.

**Data capture documentation:**

Dewals Patrice, Damiano Alain, Floch Laurent, Cauquil Pascal. (2017). AVDTH : Acquisition Validation des Données Thon : Manuel de l'utilisateur (màj 27/07/2017). Sète : IRD, 75 p. multigr. [fdi:010082886](https://doi.org/10.10082886)

**Quality checks documentation:**

Y. All quality checks are detailed on the AKaDo website (<https://git.ouutils-is.ird.fr/ob7/akado2/-/wikis/home>) which is the software dedicated to these tasks. Furthermore, these quality checks will be upgraded soon, in term of software structure and quality checks efficiency.

**Data storage**

**National database:**

Depending on the choice made by each state members

**International database:**

NA

**Quality checks and data validation documentation:**

The data validation documentation is still in development. The latest version is available online: <https://ob7-ird.github.io/t3/>

**Sample storage**

**Storage description:**

NA

**Sample analysis:**

NA

**Data processing**

**Evaluation of data accuracy (bias and precision):**

N. Development is ongoing regarding this section. Last documentation and methodology will be available through the T3 R package documentation <https://ob7-ird.github.io/t3/>.

**Editing and imputation methods:**

Articles:

Báez, J.C., M<sup>a</sup>.L. Ramos, M- Herrera, H. Murua, J.L. Cort, S. Deniz, V. Rojo, J. Ruiz, P.J. Pascual-Alayón, A. Muniategi, A. Perez San Juan, J. Ariz, F. Fernández & F. Abascal (2020). Monitoring of Spanish flagged purse seine fishery targeting tropical tuna in the Indian ocean: Timeline and history. Marine Policy, 119: 104094. <https://doi.org/10.1016/j.marpol.2020.104094>

Duparc, A., P. Cauquil, M. Depetris, P. Dewals, D. Gaertner, A. Hervé, J. Lebranchu, F. Marsac, and P. Bach. 2018. Assessment of accuracy in processing purse seine tropical tuna catches with the T3 methodology using French fleet data. Case of the French fleet in Indian Ocean. Pages 1–19 Report of the 20th session of the IOTC Working Party on Tropical Tunas. IOTC, Victoria, Seychelles

Duparc, A., V. Aragno, M. Depetris, L. Floch, P. Cauquil, J. Lebranchu, D. Gaertner, F. Marsac, and P. Bach. 2019. Assessment of the species composition of major tropical tunas in purse seine catches: a new modelling approach for the Tropical Tuna Treatment processing. Pages 1–35 Report of the 21st session of the IOTC Working Party on Tropical Tunas. IOTC, San Sebastián, Spain.

Duparc, A., M. Depetris, P. Cauquil, and J. Lebranchu. 2020a. Improved version of the Tropical Tuna Treatment process: new perspectives for catch estimates of tropical purse seine fishery. Pages 1–21 Report of the 22nd session of the IOTC Working Party on Tropical Tunas - Stock Assessment Meeting. Virtual Meeting.

Duparc, A., M. Depetris, L. Floch, P. Cauquil, P. Bach, and J. Lebranchu. 2020b. Development status of the new Tropical Tunas Treatment (T3) software. Pages 1–5 Report of the 22nd session of the IOTC Working Party on Tropical Tunas - Data preparatory meeting. Online/virtual.

Software:

Depetris, M., Duparc, A., Cauquil, P., Floch, L., & Lebranchu, J. (2022). t3: A R package for processing tropical tuna fisheries data (1.0.0). Zenodo. <https://doi.org/10.5281/zenodo.6476877>

The online documentation:  
<https://ob7-ird.github.io/t3/>

**Quality document associated to a dataset:**

There is no quality document. However, the estimation process followed are described in the report of RCG LP’s Tropical Tuna ISSG.

**Validation of the final dataset:**

N.

**MS:** FRA - ESP - ITA

**Region:** Other regions

**Sampling scheme identifier:** Observe

**Sampling scheme type:** Commercial fishing trip

**Observation type:** SciObsAtSea

**Time period of validity:** from 2005 onward

**Short description (max 100 words):** The sampling scheme aims at monitoring at sea discards of target species (e.g., tunas,) and retained and discarded bycatch from the French, Italian, and Spanish tropical purse seine fishery operating in the Atlantic and Indian oceans. The scheme covers two tropical regions which are governed by the RFMOs (IOTC and ICCAT). The sampling protocol has been jointly developed by Spain and France. For the unique vessel associated to the Italian fleet, collaboration is ongoing between France and Italy regarding data collection. Some non-EU countries, such as Seychelles and Mauritius, share the same protocol. Sampling is coordinated by IRD, IEO and AZTI.

**Description of the population**

**Population targeted:**

The targeted population corresponds to the catches (retained and discarded) of commercial purse seine and pelagic longline fishing operations. The primary sampling unit (PSU) is the trip.

**Population sampled:**

The sampled population is a selected list of the species listed in table 2.1 with a different priority:

1. Discards of target species: yellowfin tuna (*Thunnus albacares*), bigeye tuna (*Thunnus obesus*), skipjack tuna (*Katsuwonus pelamis*) and albacore tuna (*Thunnus alalunga*) for the purse seine
2. Retained and discarded bycatch species (including all PETS): sharks, rays, turtles, billfishes, marine mammals, and other bony fish species.

**Stratification:**

The population is stratified in 2 geographical lots: “Atlantic Ocean Central East and West” (FAO areas 34, 41 and 47) and “Indian Ocean” (FAO areas 51 and 57). Each lot is governed by a dedicated tuna RFMO: ICCAT and IOTC, respectively.

**Sampling design and protocols****Sampling design description:****Purse seine:**

Discards of target species (tropical tunas) and retained and discarded bycatch are monitored by observers at-sea. Observations consist in counting, determining species composition, condition at release (dead or alive), taking length measurements (and weighting when possible), and determining sex (when possible). The observer monitors exhaustively the entire sorting operations. Observations include the recording of incidental catches of PETS including seabirds, turtles, marine mammals, and fish protected under EU legislation and international agreements.

The observation programme is within the framework of the PNDB, with a 10% coverage for the European PS fleet.

**Is the sampling design compliant with the 4S principle?**

Y. The sampling design of PSU can be defined as “non-probabilistic convenience”, meaning the trips of only vessels that can embark observers (some cannot due to the lack of place on the vessel) are sampled depending on opportunities, and in a fashion where all fishing companies (that may have different fishing strategies or practises) are represented.

**Regional coordination:**

Yes, there is some coordination. The sampling scheme is analysed and revised at the occasion of an annual workshop (Data Management – Observer meeting sub-ISSG) in the frame of RCG Large Pelagic, that includes several scientific institutes using the same methodology (IRD (France), IEO and AZTI, (Spain), and SFA (Seychelles)).

**Link to sampling design documentation:**

There is no specific document made describing the sampling design. The sampling design is based on the respective Regional Observer Schemes (ROS) of ICCAT and IOTC. The ROS defines the minimum standards and mandatory information to be collected and reported to each RFMO. Also, the sampling scheme complies with the minimum observer coverage required by each RFMO. Importantly, the sampling scheme is supposed to comply with the minimum observer coverage required by each RFMO, which in the case of ICCAT is 100% this is not covered by the EU-MAP.

**Compliance with international recommendations:**

Y - observer coverage is in line with EU requirements and with ICCAT and IOCT recommendations.

**Link to sampling protocol documentation:**

The sampling protocol on purse seine vessels is described in detail in Sabarros, P.S., Mollier, E., 2023. Manuel à l'usage des observateurs embarqués à bord des thoniers senneurs tropicaux - Instructions pour la collecte de données - v2.2. IRD-Ob7. <https://ird.hal.science/ird-02293012v4>

The sampling protocol pelagic longline vessels is described in detail in Bach, P., Sabarros, P.S., 2022. Manuel de l'observateur embarqué à bord des palangriers pélagiques réunionnais - v2022. IRD-Ob7. <https://hal.science/hal-04175881>

A species identification guide was developed at the attention of observers that can be use for both fisheries: Sabarros, P.S., Moussy, F., Mollier, E. Guide d'identification des espèces capturées dans les pêcheries tropicales – v2.1. IRD-Ob7. <https://hal.ird.fr/hal-03358650>

**Compliance with international recommendations:**

Y – sampling protocol is in line with ICCAT and IOTC recommendations.

**Sampling implementation****Recording of refusal rate:**

N. Refusals for embarking observers is dealt with by the contractors that will reschedule on a different date or vessel if needed.

**Monitoring of sampling progress within the sampling year:**

Purse seine:

. Sampling effort is managed at the MS level and not coordinated at the regional level.

**Coordination process:**

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Coordination is conducted under the purse seine observer ISSG coordination meeting. The group's main objective is the coordination of the on-board data collection and monitoring of the tropical purse seine fleet operating in the Atlantic and Indian Oceans, as well as the preparation of the EU data provision to ICCAT and IOTC. There is a yearly face to face meeting, and additionally intersessional work can be conducted to address specific issues.

**Data capture****Means of data capture:**

IRD has developed a fully-fledged software for entering data collected at sea by observers, named ObServe. This software offers scientists and technicians the complete palette of forms required for the entry of all types of data to be collected as part of EU-MAP and during fieldwork in general. Its core purpose is thus to cover the biological sampling and scientific surveys at sea. To ensure high quality for the data prior to their transfer to the central database, the data are pre-validated at the national level automatically by applying plausibility criteria consistent with the reference criteria (active vessels, taxonomic references, reference lists of métiers, etc.). In addition, this software also provides observers with all the documentation required for their data collection activities.

**Data capture documentation:**

Cauquil P. (2018) ObServe 7: Système intégré de gestion de données d'observation de pêche à la senne et à la palangre : manuel d'utilisation de l'observateur (Révision 60 le 20/11/2018), 67 p. multigr. [fdi:010082885](https://doi.org/10.10082885)

**Quality checks documentation:**

There are different levels of controls for the data. First, data entry controls are part of ObServe used by observers. These controls based of reference data are used to constrained data entry to plausible data. Secondly, prior to being sent to the correspondent national institute, subcontractors control various key elements data entered by their observers and make sure data collected on paper forms is well transcript digitally in ObServe. Third, data are screened at national level through several scripts before uploading to the respective central database.



<b>Data storage</b>
<p><b>National database:</b> The data is stored at the institute level (i.e., IRD, IEO, AZTI) in PostgreSQL databases (ObServe), which share the same structure, format, and encoding, greatly facilitating data exchange and consolidation. Additionally, all of them are on web servers, allowing them to be interconnected to perform tasks such as synchronizing reference tables and codes.</p> <p><b>International database:</b> N/A</p> <p><b>Quality checks and data validation documentation:</b> There are a series of quality indicators and R routines that are used before consolidating trip data into the final database. These indicators and protocols are presented annually at the ISSG-observers. However, until this group reaches an agreement on the final list of indicators to be used, each institute applies its own protocol.</p>
<b>Sample storage</b>
<p><b>Storage description:</b> N/A</p> <p><b>Sample analysis:</b> N/A</p>
<b>Data processing</b> not applicable yet. The processing is done at national level and the results are discussed during the Data Management – Observer meeting sub-ISSG of RCG Large Pelagic