

Large Pelagics Regional Coordination Group

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 16 July 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 16 July 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

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

2025-2027

Version 1 (to be discussed at RCG LP 2023)

2023/MM/DD

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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. In opposition to many other RCGs, which have a specific area of interest, the RCG LP have a worldwide area of relevance. In other terms, it involves all the area covered by the tunas Regional Fisheries Management Organisations (tRFMOs) currently ICCAT, IOTC, WCPFC and IATTC. Related to the 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 global guidelines of the next year (according to the outputs of the RCG LP annual meeting and EU meetings associated 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/ices-eg/RCGs/tree/master/NWPtools/table_2_1) which will enable full transparency and easiness of maintenance and implementation.

Text Box 1A: Test studies description

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).

No test study was ongoing under the umbrella of the RCG LP.

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 fundamental tool for regional coordination. Regarding the case of LP among the RCG associated, countries in relation are split between two systems in ongoing development: the Regional Database & Estimation System (RDBES) and the Med&BS RDBFIS (regional database for the Mediterranean and Black Seas). These countries preferences are in direct relation with countries specificities in terms of needs and implications among the other RCG. With the aim to move forward on this topic, an ISSG dedicate to the development of the future RDB for Large Pelagics was launched in 2022. So far non-consensus was founded, excepted the desire not to create a new system but to join an existing one. Future discussions and actions associated will be designing the future of this topic for LP and will decide of the implication among the other RCG ISSGs.

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

1. Aim of the activities

Intersessional work at the RCG NANSEA

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 across the year, from one round of the annual technical meetings to the next, is supported with the setup of the Intersessional Subgroups.

In these subgroups the experts concentrate on specific Thematic Focus Areas, and sometimes they are 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 performed by ISSG is essential for RCG technical meeting preparation and meeting discussions and Member States are requested to name experts in the different ISSG relevant to them and these experts should allocate a significant amount of time (on average 40 hours per ISSG) for carrying the work during the intersessional year.

The ISSG may change over the years as task are completed and new needs are coming up. An updated list of the ISSG operating every year under the umbrella of the RCG NANSEA can be found here: <https://www.fisheries-rcg.eu/rcg-nansea/>

A non-exhaustive list of the ISSG is presented below:

- ✓ ISSG Development of Draft Regional Work Plan.
- ✓ ISSG National Correspondents

SECTION 2: BIOLOGICAL DATA

Text Box 2.3: Data collection for diadromous species in freshwater

General comment: This Textbox fulfils Article 5(2)(a), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II, point 2.1(b) and point 2.3 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used to collect data from freshwater commercial fisheries for salmon, sea trout and eel, and from research surveys on salmon and sea trout in freshwater, and on eel in any relevant habitat including coastal waters (max 250 words per species and area).

Not relevant for the large pelagic species.

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 discussion pop up during RCG LP annual meetings regarding the question 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:

Describe 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 baitboat (BB) for all 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:

Describe in the annex 1.1, the sampling scheme aims at monitoring at sea discards of target species (e.g., tunas, swordfish) and retained and discarded bycatch from the French tropical purse seine fishery operating in the Atlantic and Indian oceans, and the pelagic longline fishery in the Indian Ocean. The sampling scheme covers two tropical regions governed by tuna RFMOs: IOTC and ICCAT.

Text Box 2.6: Research surveys at sea

General comment: This text box fulfils Article 5 (1)(b), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapters I and II of the EU MAP Implementing Decision. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision

will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU-MAP Implementing Decision or whether it is an additional survey (max. 450 words per survey).

So far, no coordination on LP research at sea are establish under the umbrella of the RCG LP.

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. Furthermore, for several years, informal collaboration was established regarding France, Spain and Seychelles:

- In ICCAT and IOTC meetings, we collaborate for 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 our collaboration, like the development of a common R package called fishi (FISHeries Indicators, <https://github.com/OB7-IRD/fishi>).
- In addition, we coordinated the data collection of vessel information for the tropical tunas PS Spanish and French fleets. This collaboration takes the form of an excel file, called turbobat, and being updated all along the year.

Text Box 3.2: Fishing activity variables data collection strategy (for inland eel commercial fisheries)

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 3.2 of the EU MAP Delegated Decision annex. It is intended to describe the methods and data sources used to estimate fishing capacity, effort and landings data (max. 900 words).

Not relevant for the large pelagic species.

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 (Tori lines, good practice manuals, sink weights) adjusted to the gears/areas fished. Data is registered by online observers and reported to the respective RFMO.

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 real coordination was established for LP species regarding fisheries impacts on marine habitats. Furthermore, several initiatives, for example regarding stomach sampling or maturity staging, was ongoing at a national scale. Coordination on that subject should be discussed among RCG LP members in the near future.

SECTION 5: ECONOMIC AND SOCIAL DATA IN FISHERIES

Text Box 5.2: Economic and social variables for fisheries data collection

General comment: This Text box fulfils Article 5(2)(d), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 5 of the EU MAP Delegated Decision annex. It is intended to specify data to be collected under Tables 7, 8 and 9 of the EU MAP Delegated Decision annex (max. 900 words).

Information on regional agreements on economic and social variables for fisheries data collection are developed in the RWP on economic issues.

SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE

Text Box 6.1: Economic and social variables for aquaculture data collection

General comment: This text box fulfils Article 5(2)(e), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 6 of the EU MAP Delegated Decision annex. It is intended to specify the data to be collected under Tables 10 and 11 of the EU MAP Delegated Decision annex (max. 900 words).

Information on regional agreements on economic and social variables for aquaculture data collection are developed in the RWP on economic issues. Aquaculture (fattening farms) of large pelagics is expected to provide economic data to the respective countries administration.

SECTION 7: ECONOMIC AND SOCIAL DATA IN FISH PROCESSING

Text Box 7.1: Economic and social variables for fish processing data collection

General comment: This text box fulfils Article 5(2)(f), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 7 of the EU MAP Delegated Decision annex. MS should provide justification for complementary data collection for fish processing (max. 900 words).

Information on regional agreements on economic and social variables for fish processing data collection are developed in the RWP on economic issues

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'.

MS: FRA - ESP - ITA
Region: Other regions
Sampling scheme identifier: TunaSamplingOnShore
Sampling scheme type: Commercial fishing trip
Observation type: SciObsOnShore
Time period of validity: from 1998 onward
<p>Short description:</p> <p>The sampling scheme aiming at collecting length samples and species composition from commercial landings on foreign shores of purse seiner (PS) and baitboat (BB) 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>Description of the population</p> <p>Population targeted:</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>Population sampled:</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>T. albacillus</i>), bigeye tuna (<i>Thunnus obesus</i>), skipjack tuna (<i>Katsuwonus pelamis</i>) and albacore tuna (<i>Thunnus alalunga</i>).</p> <p>Stratification:</p> <p>Population is stratified according to four features:</p> <ul style="list-style-type: none"> - 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. - The fisheries are the PS/BB. Each fisheries have his own organisation and his dedicated catches. - Port - 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 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 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 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).

Link to sampling design documentation:

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](#)

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](#)

Compliance with international recommendations:

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

Link to sampling protocol documentation:

Pascal Bach et al., « Sampling on-shore procedures for tropical tuna landed by purse seiner in the Atlantic and Indian oceans » (septembre 2018), [fdi:010075957](#)

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.

Data capture

Means of data capture:

IRD has developed a fully-fledged software for capturing the fisheries landings and sampling data on foreign shores, named AVDTH. 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.

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.outils-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:

So far, T3 database is designed to store the raw data collected from logbook, landings and sampling onshore on foreign shores, and the corrected data after T3 processing. This structure should be evolved in the next years, especially with the updated of the T3 processes.

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:

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., A. Duparc, L. Floch, P. Cauquil, and J. Lebranchu. 2020. OB7-IRD/t3: Beta version of T3 software. Zenodo. Url - <https://doi.org/10.5281/zenodo.3878125>.

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

The sampling scheme aims at monitoring at sea discards of target species (e.g., tunas, swordfish) and retained and discarded bycatch from the French tropical purse seine fishery operating in the Atlantic and Indian oceans, and the pelagic longline fishery in the Indian Ocean. The sampling scheme covers two tropical regions governed by tunaRFMOs: IOTC and ICCAT.

Sampling is coordinated by IRD and is operationally carried out by subcontractors.

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, and swordfish (*Xiphias gladius*) as well as tunas for the pelagic longline.
2. Retained and discarded bycatch species (including all PETS): sharks, rays, turtles, billfishes, marine mammals, and other fish species.

Scientific observers are only deployed on a fraction of purse seine and longline vessels. Indeed, some purse

seiners in the Indian Ocean do not have room for an observer due to limited room onboard and the presence of private security agents (related to piracy). Also, some longliners (operating in the Indian Ocean) cannot embark observers because they run at full capacity in terms of room onboard, especially smaller vessels (< 12m). To cope with that, “self-reporting” (captains collecting data; see description below) was developed. Finally, having observers onboard is not mandatory and cannot be imposed, therefore some captains refuse to have observers onboard (for personal reason).

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.

Longline:

All catches (retained and discarded) of target species (swordfish, tunas) and bycatch species are monitored by observers at-sea. Observations consist in counting, identifying species, condition at release (dead or alive), taking length measurements, determining sex (when possible), and noting depredation by cetaceans and sharks. Observations include the recording of incidental catches of PETS including seabirds, turtles, marine mammals, and fish protected under EU legislation and international agreements. Within the framework of the observer scheme, “self-reporting data” are collected by fishermen themselves and consist of comparable observations (that of scientific observers) excluding measurements.

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:

No regional cooperation for observation, no agreement ongoing. The sampling scheme is analysed and revised at the occasion of an annual workshop (Observers sub-ISSG) in the frame of RCG Large Pelagic, that includes other scientific institutes using the same methodology (AZTI, Spain and SFA, Seychelles).

Link to sampling design documentation:

There is no specific document made by IRD 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 (5%) and required by EU (10%).

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. (2020) *Manuel à l'usage des*

observateurs embarqués à bord des thoniers senneurs tropicaux (version 2.1) <https://hal.ird.fr/ird-02293012v3/>

The sampling protocol pelagic longline vessels is described in detail in Bach P. and Sabarros P.S. (2018) *Manuel de l'observateur embarqué à bord des palangriers réunionnais* (version 2018) https://www.dropbox.com/s/7qpqzso8avscgf1/Manuel_Obs%20LL%20RUN%202018.pdf?dl=0

A species identification guide was developed at the attention of observers that can be use for both fisheries: Sabarros P.S. and Moussy F. (2020) *Guide d'identification des espèces capturées dans les pêcheries tropicales* (version 2.0) https://www.dropbox.com/s/90rdjf0rehlanlj/Guide_ID_esp%C3%A8ces_IRD-Ob7_v2.0.pdf?dl=0

Compliance with international recommendations:

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

Sampling implementation

Recording of refusal rate:

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

Monitoring of sampling progress within the sampling year:

Purse seine:

The operational sampling is delegated to a subcontractor that informs IRD of upcoming observer deployments. Also, the subcontractor shares online a progress table including past and upcoming observer deployments. Moreover, all observers are debriefed by IRD with the purpose to check that the protocol is carefully followed. Two steering meetings are organized each year with the subcontractor to discuss the sampling plan, progress and any relevant issues or modifications.

Longline:

The operational sampling is delegated to a subcontractor that informs IRD of upcoming observer deployments. Two steering meetings are organized each year with the subcontractor to discuss the sampling plan, progress and any relevant issues or modifications.

Coordination process:

For each fishery, two steering meetings are held annually between the subcontractors and IRD. The goal of the steering meeting is to discuss the progress of sampling operations, address the main issues encountered, and prepare the upcoming sampling plan. All discussions and decisions taken are documented in a report.

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 automatically by applying plausibility criteria consistent with the reference criteria of IRD's Exploited Tropical Pelagic Ecosystems Observatory (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 IRD, subcontractors control various key elements data entered by their observers and make sure data collected on paper forms is well transcribed digitally in ObServe.