

## Sampling plan description for biological data

### Mainland At Sea IOTC

<b>MS:</b> PRT
<b>Region:</b> Other regions - IOTC
<b>Sampling scheme name:</b> Longline for swordfish: At-sea
<b>Sampling scheme type:</b> At sea
<b>Time period of validity:</b> 2021-2024
<b>Short description:</b>  Sampling scheme aiming at sampling catch (discards + landings) composition, volume, length of species and biological variables (age, weight, sex, maturity of selected species ) captured by Portuguese vessels operating in IOTC. All species sampled are listed in Table 1 of the EU MAP Delegated Decision annex. Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort).
<b>Description of the population</b>
<b>Population targeted:</b>  Population: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in IOTC.  Population targeted: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by Portuguese vessels operating in IOTC.  Population studied: lengths of species and biological variables (age, weight, sex, maturity of selected species) captured by a subset of Portuguese vessels operating in IOTC from a fleet segment (~metier), based on a combination of gear licences and the main species landed in previous year.  Primary Sampling Unit (PSU): fishing trip
<b>Population sampled:</b>  Population sampled / not sampled per metier and sampling scheme:  -Metier LLD_LPF Population sampled: All vessels Stratum ID code: PTS26 - LLD_LPF
<b>Stratification:</b> No stratification.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> At sea sampling schemes sample Catches (All fractions).  a) The Portuguese fleet is stratified by fleet (~metier), area and quarter. One trawl metier operates in IOTC: LLD_LPF. Annual sampling effort (number of planned PSUs = fishing trips) is fixed and

only 1 trip is allocated to this metier.

b) Vessel is selected by SRSWR and fishing trip (= PSU) is selected by SRSWOR.

c) Sampling is done per gear and gear segment during hauling. Number and length of species are recorded, as well as biological variables (age, weight, sex, maturity) of selected species.

d) Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort).

PETS observation effort is the same as for other species - i.e. it is done during hauling of the gear following the protocol described in topics a-c.

**Is the sampling design compliant with the 4S principle?: Y.**

**Regional coordination:** N.

**Link to sampling design documentation:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

**Compliance with international recommendations:** Y.

Sampling design in line with international recommendations:

- Resolution IOTC 15/02: Mandatory Statistical Reporting Requirements for IOTC Contracting Parties and Cooperating Non-Contracting parties (CPCS))
- IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

**Link to sampling protocol documentation:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

### **Sampling implementation**

**Recording of refusal rate:** N. Recording of refusal rates will be developed in 2022-2024.

**Monitoring of sampling progress within the sampling year:** NA. One fishing trip is sampled per year.

### **Data capture**

**Means of data capture:** Biological data is collected with measuring board/tape (variable length) and scale (variable weight).

**Data capture documentation:** Documentation on data capture is disclosed to all scientific observers and under constant improvement (e.g. species identification guides, age reading protocols, maturity stage guides, biological sampling protocols).

Specificities for IOTC data capture can be found in:

IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

**Quality checks documentation:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

#### **Data storage**

**National database:** <http://nautilus.ipma.pt/>

**International database:** IOTC data base

**Quality checks and data validation documentation:** Data is submitted to quality check to meet IOTC requirements and is validated by IOTC.

#### **Sample storage**

##### **Storage description:**

Biological samples are stored at IPMA and a record of samples per species/stock by geographic sub-area is kept.

Hard tissues (otoliths and hard tissues for age reading) are stored until and after processing/analysis. Soft tissues (stomachs, gonads) are stored until processing/analysis.

**Sample analysis:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

#### **Data processing**

**Evaluation of data accuracy (bias and precision):** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

**Editing and imputation methods:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

**Quality document associated to a dataset:** IOTC Secretariat (2014). Guidelines for the reporting of Fisheries Statistics to the IOTC. IOTC Secretariat, Mahé, Seychelles, January 2014. 70pp.

##### **Validation of the final dataset:**

Data is submitted to quality check to meet IOTC requirements and is validated by IOTC.

Final datasets are validated by experts / stock assessors during expert / assessment working groups / regional coordination groups.

