Sampling scheme identifier: **Madeira At Sea ICCAT**

MS:
PRT

Region:
Other regions

Sampling scheme identifier:
Madeira At Sea ICCAT

Sampling scheme type:
Commercial fishing trip

Observation type:
SciObsAtSea

Time period of validity:
2025-2027

Short description (max 100 words):
The objective of this sampling scheme (Work Plan – Table 2.5) is to collect length-frequency distributions of commercial fish species landed at auctions by Madeiran vessels operating in FAO 34.1.2 (RFMO/RFO/IO ICCAT), for species listed in Table 1 of the EU MAP Delegated Decision annex (2021/1167/EU). Data collection includes both landings and discards, in terms of number and volume of specimens, and in length frequency distributions. Occurrence of incidental bycatch of PETS (Protected Endangered and Threatened Species) is also recorded.

Description of the population

Population targeted:

The primary sampling scheme design is set to measure the length of fish species (listed in the Work Plan – Table 2.2), caught by Madeiran active vessels of all length classes, licenced to operate in FAO 34.1.2 (RFMO/RFO/IO ICCAT). The sampled frame includes a list of vessels for each fleet segment/métier that can provide for and are willing to take onboard observers. Furthermore, within each métier, sampling effort distribution in space and time is proportional to effort and/or landings.

Primary Sampling Unit (PSU): vessel * trip

Population sampled:

Population sampled / not sampled per metier and sampling scheme:
-Metier LHP_LPF:
Population sampled:
Main Madeiran ports of this metier: FUNCHAL, CANIÇAL and PAÚL DO MAR
Sampling frame identifier: LPF2_M3 (n = 10 trips)
Population not sampled:
Minor Madeiran ports of this metier
Sampling frame identifier: LPF4_M3_out of frame

Stratification:
Sampling scheme stratification includes vessel length class and métier. Overall, stratification is implemented to improve sampling coverage throughout the year.

Sampling design and protocols

Sampling design description:

At-sea sampling is conducted by scientific observers, who are voluntarily accommodated on board by the owner of the vessel and/or the shipmaster.
Every trip's haul is selected for sampling and, for each fishing operation, recorded data includes:
a. gear type and technical characteristics of the fishing operation;
b. geographical location of fishing sets;

c. species composition of the total catch (retained and discarded), and landings (collected at the fish auction following the trip) in number and biomass;
d. lengths of retained (subsample), discards (census) and landings (subsample);
e. sex for elasmobranchs and crustaceans;
f. reason for discarding each individual;
g. condition upon discarded (alive/dead);
h. outcome for the retained fraction of the catch that might not be landed;
i. interactions with vulnerable fauna (e.g. sea-birds, sea-turtles and marine mammals) are also recorded.
j. Occurrence of incidental bycatch of PETS (Protected Endangered and Threatened Species) is also recorded.

The Madeira at-sea observer programme will collect comprehensive data on species length composition of all retained and discarded fractions on a haul-by-haul basis, and therefore will provide Scheme 1 concurrent sampling of Group 1 – 3 species. Landings from vessels with an observer on board will be further statically sampled by at-port observers, on previously randomly assigned dates.
The target population corresponds to the total number of fishing trips for a given métier and during a specific time period.

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

Regional coordination:
N.

Link to sampling design documentation:
https://www.iccat.int/en/iccatmanual.html

Design follows international recommendations:
Y.

Link to sampling protocol documentation:
https://www.iccat.int/en/iccatmanual.html

Protocol follows international recommendations:
Y.

Sampling implementation

Recording of refusal rate:
Y.

Monitoring of sampling progress within the sampling year:
Sampling design is monitored and adjusted throughout the year in order to reach the minimum number of samples required.

Data capture

Means of data capture:
Commercial species length data is obtained through measurements, using a measuring board. Observations are noted down on appropriate sampling sheets. Sampling is executed by two observers, one of which is responsible for measuring and the other for taking note of data.

Data capture documentation:
https://iccat.int/en/accesingdb.html

Quality checks documentation:
Y.

Quality checks and validation procedures are implemented:
1. All samples are checked by the coordinator before the data is inputted into the local database;
2. After all data is introduced into the local database it is subsequently checked for errors and outliers;
3. A random check of 10% of the data is executed by inspecting the registered data for logical errors;
4. Length distribution and effort information is then connected with vessel logbooks for future cross examinations;
5. All data is made public in ICCAT Secretariat and respective website.

Data storage

National database:
Local Database.

International database:
https://iccat.int/en/accesingdb.html

Quality checks and data validation documentation:
The obtained data is used for the elaboration of peer-reviewed scientific publications with an impact factor, and hence data quality is assured by journal editorial boards and reviewers.

Sample storage

Storage description:
NA.

Sample analysis:
NA.

Data processing

Evaluation of data accuracy (bias and precision):
https://www.iccat.int/en/iccatmanual.html
https://www.iccat.int/en/submitSTAT.html

Editing and imputation methods:
https://www.iccat.int/en/iccatmanual.html

Quality document associated to a dataset:
https://www.iccat.int/en/iccatmanual.html

Validation of the final dataset:
Data is submitted to quality check to meet ICCAT requirements and is validated by ICCAT.
Final datasets are validated by experts / stock assessors during expert / assessment working groups / regional coordination groups.