Sampling plan description for biological data

Azores At Market ICCAT

MS: PRT	
Region: Other regions - ICCAT	
Sampling scheme names: Pole and line for tuna at Market; Drifting Longline at Market	
Sampling scheme type: At market	
Time period of validity: 2021-2024	
Short description: Sampling schemes aiming at sampling length of species landed at ports by Azorean vessels operating in ICES 10.a.2. All landed species are sampled, including species 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) but occurrences are not expected in this sampling scheme since in on shore sampling of commercial fishing trips only the "Landings" fractions are sampled.	
Description of the population	

Population targeted: Lengths of species landed at port by Azorean vessels operating in ICES 10.a.2 and licensed for the use of different fishing techniques.
 	
Primary Sampling Unit (PSU): port*day
 	
Population sampled: Lengths of species landed at port by a subset of Azorean vessels operating in ICES 10.a.2 from a fleet segment/gear/species assemblage combination are sampled based on the result of the application of a developed algorithm for previous year combinations. All minor ports without the presence of a scientific observer are excluded and no sampling occurs during the weekends.
 	
Population sampled/not sampled per metier and sampling scheme:
 	
-Metier LHP_LPF
    Population sampled: Main ports with licensed vessels using pole and line targeting tuna species (PDL - Ponta Delgada; MAD - Madalena; VPT - Vila do Porto)
      Stratum ID code: AZM24 - LHP_LPF_<12m and AZM25 - LHP_LPF_>12m
    Population not sampled: Minor ports with licensed vessels using pole and line targeting large pelagic fish
      Stratum ID code: AZ26 – LHP_LPF_out of frame
 	
-Metier LLD_LPF
    Population sampled: Main port with licensed vessels using drifting longlines targeting swordfish (PDL - Ponta Delgada)
      Stratum ID code: AZM29 - LLD_LPF
    Population not sampled: Minor ports with licensed vessels using drifting longlines targeting swordfish
      Stratum ID code: AZ30 – LLD_LPF_out of frame
 	
Stratification: In order to improve sampling coverage through the year (by quarter) and in the most important auctions (main ports) to be sampled within each fleet segment/gear/species	

assemblage combination allocated by quarter proportionally to previous sampling year.

Sampling design and protocols

Sampling design description: Scientific observers on shore attempt to sample a predefined number of vessel sale events (landing of one fishing trip) for every auction*visit date. This is conducted by random selection from vessels present at the harbour. Boxes of all species landed are sampled by conducting concurrent sampling scheme for all catch fractions landed. A fishing effort related questionnaire is also performed to the fishing vessel master selected for sampling.

On shore sampling schemes sample Landings (All fractions):

a. The Azorean fleet is stratified by fleet segment, metier and time. Sampling effort is established as number of trips expected to be sampled in each fleet (~ metier) and allocated to auctions and quarters proportionally to last year's landings;

b. In every port*day, samplers attempt to sample a predefined number of vessel_sale event. Each vessel_sale event corresponds to the landings of one fishing trip. Samplers randomly select the vessel_sale event from vessels present at the harbor;

c. In each vessel_sale event, the samplers aim to sample boxes from every commercial species and commercial category. This way, a concurrent sampling scheme is applied, although sometimes the coverage of all species is not possible;

d. Within each commercial category samplers randomly select boxes to be sampled aiming for a minimum number of 50 fishes;

e. A fishing effort related questionnaire is also performed to the shipmaster of the vessel selected for sampling;

f. Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme (along with quantification of PETS observation effort) but occurrences are not expected in this sampling scheme since in on shore sampling of commercial fishing trips only the "Landings" fractions are sampled. Within a sampled commercial fishing trip, PETS observation effort is done in all boxes sampled for other species (protocol described in topics a-d);

g. Refusal rates are recorded.

During the sampling period covered, fish length measurements will also be recorded in five auctions using an electronic system composed by a local unit for automatic image acquisition of fish boxes and a remote database to record the processed images using Fishmetrics system.

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

Regional coordination: Not applicable.

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

Compliance with international recommendations: Y. Sampling design in line with international recommendations (e.g., ICCAT Manual).

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

Sampling implementation

Recording of refusal rate: Y.

Monitoring of sampling progress within the sampling year: The executed number of PSU per trimester per sampling scheme executed versus planned is monitored monthly. When necessary and possible, the number of PSU planned but not executed (due to operational/logistical limitations) is rescheduled.

Data capture
Means of data capture: Depending on the species, lengths are collected using measuring board/tape or calipers. Scales are used for weight data. Fishing effort questionnaires are conducted in person or by phone. **Data capture documentation**: https://www.iccat.int/en/iccatmanual.html **Quality checks documentation**: Y. https://www.iccat.int/en/iccatmanual.html - Data Base and Manual.

Data storage
National database: NA. **International database**: https://www.iccat.int/en/iccatmanual.html - Data Base. **Quality checks and data validation documentation**: https://www.iccat.int/en/iccatmanual.html - Data Base and Manual.

Sample storage
Storage description: Age structures are mostly kept in *eppendorfs*, which are placed in PCR tube storage racks, at the laboratory and for indefinite period. Access to samples is organised by species and sampling date. Samples are not stored under the auspices/responsibility of any international organization. Quantities of sampled stored by species/stock, geographic sub-area and by year can be found at https://datacollection.jrc.ec.europa.eu/ars. **Sample analysis:** https://www.iccat.int/en/iccatmanual.html

Data processing
Evaluation of data accuracy (bias and precision): Y. https://www.iccat.int/en/submitSTAT.html (Submitting Stat Data). **Editing and imputation methods:** Y. https://www.iccat.int/en/iccatmanual.html **Quality document associated to a dataset**: https://www.iccat.int/en/submitSTAT.html **Validation of the final dataset**: Data is submitted to quality check to meet ICCAT requirements and is validated by ICCAT.