

UNIONE EUROPEA

MINISTERO DELL'AGRICOLTURA DELLA SOVRANITÀ ALIMENTARE E DELLE FORESTE

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

IT Work Plan for data collection in the fisheries and aquaculture sectors

2025-2027

Version 2 – 2024

Rome, 4th November 2024

CONTENTS

SECTION 1: GENERAL INFORMATION 15

DATA COLLECTION FRAMEWORK AT NATIONAL LEVEL 15
TEXT BOX 1B: OTHER DATA COLLECTION ACTIVITIES 17
Region: Mediterranean and Black Sea 17
Activity: RCG ' s Secretariat 17
Activity: Med&BS Regional data base (RDBFIS) 18
Activity: Regional Coordination taking place in ISSGs and pan regional cooperation between RCGs 18
Activity: Monitoring PETs in small pelagic fishery 18

SECTION 2: BIOLOGICAL DATA 19

TEXT BOX 2.3: DIADROMOUS SPECIES DATA COLLECTION IN FRESHWATER 19
Region: Mediterranean and Black Sea 19
TEXT BOX 2.4: RECREATIONAL FISHERIES 20
Region: Mediterranean and Black Sea 20
TEXT BOX 2.5: SAMPLING PLAN DESCRIPTION FOR BIOLOGICAL DATA 22
Region: Mediterranean and Black Sea 22
Sampling scheme name: SciObsOnShore 22
Sampling scheme name: Sci Obs Shore Commerc Sel Stock 22
Sampling scheme name: Sci Obs AtSea Commerc Sel Stock 23
Sampling scheme name: PTM_Out of Frame 23
Sampling scheme name: Tuna Sampling On Shore scheme 24
Sampling scheme name: Observe Scheme 24
TEXT BOX 2.6: RESEARCH SURVEYS AT SEA 24
Region: Mediterranean and Black Sea 24
Research survey: International bottom trawl survey in the Mediterranean (MEDITS) 24
Research survey: Beam Trawl Survey (SOLEMON) 25
Research survey: Mediterranean International Acoustic Survey (MEDIAS) 25
Research survey: DRES Chamelea (non-mandatory survey) 25
Research survey: DRES Ensis (non-mandatory survey) 27

SECTION 3: FISHING ACTIVITY DATA 28

TEXT BOX 3.1: FISHING ACTIVITY VARIABLES DATA COLLECTION STRATEGY 28
TEXT BOX 3.2: FISHING ACTIVITY VARIABLES DATA COLLECTION STRATEGY (FOR INLAND EEL COMMERCIAL FISHERIES) 28

SECTION 4: IMPACT OF FISHERIES ON MARINE BIOLOGICAL RESOURCES 29

TEXT BOX 4.2: INCIDENTAL CATCHES OF SENSITIVE SPECIES 29
Region: Mediterranean and Black seas 29
TEXT BOX 4.3: FISHERIES IMPACT ON MARINE HABITATS 31
Region: Mediterranean and Black Seas 31
Study: Regional coordination on fish stomach contents collection and analysis in the Medb 31
Study: ECOVMS 32

SECTION 5: ECONOMIC AND SOCIAL DATA IN FISHERIES 33

TEXT BOX 5.2: ECONOMIC AND SOCIAL VARIABLES FOR FISHERIES DATA COLLECTION 33

SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE 34

TEXT BOX 6.1: ECONOMIC AND SOCIAL VARIABLES FOR AQUACULTURE DATA COLLECTION 34

SECTION 7: ECONOMIC AND SOCIAL DATA IN FISH PROCESSING 35

TEXT BOX 7.1: ECONOMIC AND SOCIAL VARIABLES FOR FISH PROCESSING DATA COLLECTION 35

ANNEX 1.1 - QUALITY REPORT FOR BIOLOGICAL DATA SAMPLING SCHEME 36

RELATED TO TABLE AND TEXT BOX 2.5 36
Sampling scheme identifier: Sci Obs Shore Commerc Sel Stock *36*
Sampling scheme identifier: Sci Obs Sea Commerc Sel Stock. *39*
Sampling scheme identifier: PTM - Out of Frame *41*
Sampling scheme identifier: TunaSamplingOnShore *44*
Sampling scheme identifier: Observe Scheme *2*
RELATED TO TABLE AND TEXT BOX 2.6 5
Sampling scheme identifier: MEDITS *5*
Sampling scheme identifier: SOLEMON *8*
Sampling scheme identifier: MEDIAS *10*
Sampling scheme identifier: DRES Chamelea *13*
Sampling scheme identifier: DRES Ensis *15*
RELATED TO TABLE AND TEXT BOX 2.3 17
Sampling scheme identifier: Diadromous (commercial) *17*
*Sampling scheme identifier: SciObs water body*Diadromous (scientific)* *21*
*Sampling scheme identifier: SciObsOnShore*Diadromous (recreational)* *24*
RELATED TO TABLE AND TEXT BOX 2.4 28
*Sampling scheme identifier: SciObsOnShore*recreational (off site surveys)* *28*
RELATED TO TABLE 4.1 (STOMACH SAMPLING) 33
Sampling scheme identifier: MEDITS_Stomach *33*

ANNEX 1.2 - QUALITY REPORT FOR SOCIOECONOMIC DATA SAMPLING SCHEME 36

Sampling scheme identifier: 1RWP_ECON *36*
Sampling scheme identifier: FA_PSS_MBS *37*
Sampling scheme identifier: AQ_PSS_MBS *41*
Sampling scheme identifier: 2Fishery_PSS_MBS *43*
Sampling scheme identifier: 3Fishery_C_ ALL *45*
Sampling scheme identifier: 4Fishery_NPS_ALL *47*
Sampling scheme identifier: 5Fishery_IND_ALL *49*
Sampling scheme identifier: 6Fishery_C_OFR *52*
Sampling scheme identifier: 7Processing_C_MBS *53*
Sampling scheme identifier: 8Processing_NPS_MBS *55*

SECTION 1: GENERAL INFORMATION

Data collection framework at national level

General comment: Use this text box to describe how data collection is organised in your Member State (institutions involved, contact information) and in which regional coordination groups (RCG) your Member State participates.

The National Fisheries Data Collection Program provides for the collection and management of biological, environmental, technical and socio-economic data necessary for fisheries management purposes, in compliance with EU Regulation no. 1004/2017 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice on the common fisheries policy. As well as with the subsequent Delegated Decision (EU) no. 1167/2021 which established a multiannual Union program for the collection, management and use of data in the fisheries and aquaculture sector starting from 1 January 2022 and with the subsequent Implementing Decision (EU) no. 1168/2021 of the Commission which establishes the list of mandatory campaigns at sea and the thresholds below which Member States are not required to collect data on their fishing and aquaculture activities or to carry out research campaigns at sea. The acquisition and management of such data benefit from funding from the European Fund for Maritime Affairs and Fisheries and Aquaculture (FEAMPA), established by Regulation (EU) no. 1139/2021, in accordance with the Operational Program for the period 2021-2027.

The National Program includes the procedures and methods to be used for the collection and analysis of data as well as for the estimation of their accuracy and precision. Data collection and monitoring protocols and methods comply with the quality standards established by international scientific bodies and regional fisheries management organizations.

Italy coordinates its national plan with that of the other Member States within the following Regional Coordination Groups: RCG MED & BS (coordination group for the Mediterranean and Black Sea), RCG LP (coordination group for large pelagics), RCG LDF (coordination group for fisheries in areas other than the Mediterranean). The role of the RCG, in addition to facilitating this coordination, is to develop and implement the procedures, methods, quality control for the collection and processing of data, to further improve the reliability of scientific opinions. In addition, regional coordination groups can develop draft regional work plans, compatible with the multi-year program of the Union (Article 9 of EU Reg. 1004/2017).

The administrative procedure to identify the institutes contributing to the data collection activities is still ongoing, the full names, acronyms and contacts of the entities will be communicated as soon as the public procurement procedure is concluded.

*The contact details of the **National Correspondent** are:*

Name: Maria Vittoria Briscolini
Role: Head of Unit of PEMAC 1 at Italian Ministry of Ministry of Agriculture, food sovereignty and forestry.
Address: Via XX Settembre 20 00187 Roma
Tel: +39 0646655031
E-Mail: pemac1@masaf.gov.it
PEC: aoo.pemac@pec.masaf.gov.it
Website: https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/202

The contact details of the participating institute are:

National Research Council - Institute for Biological Resources and Marine Biotechnology: CNR-IRBIM
Address: Largo Fiera della Pesca, 2, 60125 Ancona AN
Tel.: +39 071 207881
E-mail: info@irbim.cnr.it;
web-site: https://www.irbim.cnr.it/
Administrative Responsible: GIAN MARCO LUNA
Biological sampling of commercial demersal and small pelagic species in GSA 10, 16, 17 and 18
Monitoring of By Catch and PETS in GSA 10, 16 and 17
Stomach contents analysis of samples in GSA 10, 16 and 17
MEDITS survey in GSA 10 and 16
SOLEMON survey in GSA 17

MEDIAS survey in GSA 9, 10, 16, 17 and 18
DRES survey in GSA 17
General coordination of Data Collection and data base maintenance
website is https://fishdatanet.cnr.it/web/

Consorzio per il Centro Interuniversitario di Biologia Marina ed Ecologia Applicata "G. Bacci" (CIBM)
Address: Viale Italia, 6, 57126 Livorno LI
Tel.: +39 0586 807287
E-mail: cibm@cibm.it;
web-site: https://www.cibm.it/
Administrative Responsible: CARLO PRETTI
Biological sampling of commercial demersal and small pelagic species in GSA 9
Monitoring of By Catch and PETS in GSA 9
Stomach contents analysis of samples in GSA 9
MEDITS survey in GSA 9

COISPA Tecnologia & Ricerca Scarl, Stazione Sperimentale per lo Studio delle Risorse del Mare
Address: Via Trulli, 18-20, 70126, 70126 Bari BA
Tel.: +39 080 5433596
E-mail: info@coispa.it;
web-site: https://www.coispa.it/it/homepage/
Administrative Responsible: GIUSEPPE LEMBO
Biological sampling of commercial demersal and small pelagic species in GSA 18 ad 19
Monitoring of By Catch and PETS in GSA 18 and 19
Stomach contents analysis of samples in GSA 18 and 19
MEDITS survey in GSA 18

Consorzio Nazionale Interuniversitario per le Scienze del Mare (CoNISMa)
Address: Piazzale Flaminio n.9 00196 – Roma RM
Tel.: +39 06 85355476
E-mail: info@conisma.it;
web-site: http://www.conisma.it/it/
Administrative Responsible: MICHELE SCARDI
Biological sampling of commercial demersal and small pelagic species in GSA 11
Monitoring of By Catch and PETS in GSA 11
Monitoring of diadromous species
Stomach contents analysis of samples in GSA 11 and 17 and 19
Impact of fishing activity on marine ecosystems
MEDITS survey in GSA 11, 17 and 19
DRES survey in GSA 17 and 18

NISEA Società Cooperativa
Address: Via Irno 11 - 84135 – Salerno SA
Tel.: +39 089 795775
E-mail: niseacoop@arubapec.it;
web-site: http://www.nisea.eu/
Administrative Responsible: PAOLO ACCADIA
Social and economic data in fishing industry
Social and economic data in fish processing industry

RETE MARE, Consorzio Nazionale Statistica ed Economia Pesca e Ambiente,
Address: VIA TORINO, 146, 00184, ROMA, Roma
Administrative Responsible: PAOLO TIOZZO BRASIOLA
Estimation of fishing production and effort
Impact of fishing activity on marine ecosystems
Social and economic data in fish processing industry

UNIMAR Società Cooperativa
Address: Via Nazionale, 243 – 00184 Roma RM
Tel.: +39 06.47.82.40.42
E-mail: unimar@pec.it;
web-site: https://www.unimar.it/it/home/
Administrative Responsible: GIAN PAOLO BUONFIGLIO
Biological sampling of commercial large pelagic species
Monitoring of diadromous species
Monitoring of By Catch and PETS on large pelagic fishery
Monitoring of recreational fisheries
Social and economic data in aquaculture
DRES survey in GSA 9, 10 and 17

OCEANIS srl
Address: Via Via Marittima, 59 - 80056 Ercolano (NA)
Tel.: +39 081 777 51 16
E-mail: oceanissrl@gmail.com;
web-site: https://www.oceanissrl.it/
Administrative Responsible: NELLOPAOLO PIGNALOSA
Biological sampling of commercial large pelagic species
Monitoring of large pelagic fishery
Monitoring of By Catch and PETS on large pelagic fishery

FEDERPESCA RICERCA & SVILUPPO s.r.l
Address: Corso D'Italia n.92, Roma
Tel.:+39063201257
web-site: https://www.federpesca.it/
Administrative Responsible: SILVESTRI LEONARDO PAOLO
Biological sampling of commercial demersal and small pelagic species in GSA 10, 16, 17 and 18
MEDITS survey in GSA 10 and 16

AGER srl
Address: Via XXIV Maggio, 43 00187 Roma, Italia
Tel.: +39 06 46821
web-site: https://www.coldiretti.it/servizio/progettazione-e-sviluppo
Administrative Responsible: RAFFAELE GRANDOLINI
Biological sampling of commercial demersal and small pelagic species in GSA 10, 16, 17 and 18
MEDITS survey in GSA 10 and 16

website is https://fishdatanet.cnr.it/web/

(max. 1000 words)

Text Box 1b: Other data collection activities

Region: Mediterranean and Black Sea

Activity: RCG's Secretariat

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the

regular data collection.

Name of the regional activity: RCG's Secretariat

RWPs MED&BS, ECON and LP implementation years 2025-2027
National specifics if applicable

Concerning the activities carried out by the RCG's Secretariat, please refers to the Regional Work Plans of the RCGMED&BS, RCG ECON and RCG LP at
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30;
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/econ_rwp_2025-2027;
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/large_pelagics_rwp_2025-2027_text_2024-09-25;

(max 250 words per study)

Activity: Med&BS Regional data base (RDBFIS)

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Name of the national activity: Med&BS Regional data base (RDBFIS)

Concerning the activities carried out by the RDBFIS project, please refers to the Regional Work Plan of the RCGMED&BS, at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

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

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the regular data collection.

Name of the national activity: Regional Coordination taking place in ISSGs and pan regional cooperation between RCGs

Concerning the activities carried out, please refers to the Regional Work Plan of the RCGMED&BS, at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30, as well as to Regional work Plan of the RCGECON at https://www.fisheries-rcg.eu/rcg-econ/

Activity: Monitoring PETs in small pelagic fishery

General comment: Describe either activities that are funded by the DCF without a direct link to the EU MAP specific requirements or WP template tables, like marine knowledge, or activities funded by other financial instruments and/or programmes that relate to EU MAP requirements, like actions under the marine action plan. You can also include one-off specific studies for a particular end-user need that will not enter the

regular data collection.

Name of the national activity: Monitoring PETs in small pelagic fishery

In line with the main objectives of the Marine Action Plan to improve the planning of data collection and efforts to address by-catches of sensitive species, a dedicated scientific observation at sea sampling scheme has been planned. In fact, Italy has defined a sampling plan (PTM_Out of Frame, for more details see Table 2.5, Box 2.5, Box 4.2 and Annex 1. 1), which will be different from the routine sampling planned for the collection of commercial population structure and biological information, as it will be carried out specifically for the collection of incidental by-catch of sensitive species such as cetaceans, birds, reptiles and protected fishes during pelagic trawl fisheries in the Adriatic, in order to fulfil the EU obligations set out in the Habitats Directive (92/43/EEC), Regulation (EU) 2019/1241 of 20 June 2019 (repealing Regulation (EC) 812/2004) on the conservation of fishery resources and the protection of marine ecosystems.

SECTION 2: BIOLOGICAL DATA

Text Box 2.3: Diadromous species data collection in freshwater

Region: Mediterranean and Black Sea

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 2.1(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 and inland commercial and recreational fisheries for salmon, sea trout and eel. Also include overview of data to be collected from research surveys on salmon, sea trout and eel in freshwater, and on eel in any relevant habitat including coastal waters.

Commercial fisheries

Data collection for Eel in Italy will deal with eel commercial inland fisheries (freshwaters and transitional waters), marine eel fisheries being definitively closed by the Decree of the Ministry of Agriculture and Forestry Police (MIPAAF) n. 403 of July 25th, 2019, and with eel research surveys in relevant habitats.

Data Collection for eel commercial fisheries shall be carried out in the 9 Eel Management Units, and will be structured as follows (see Table 2.3. Biological variables) :

- reporting by Regional Administrations of official catch data, based on requirements of Regional EMPs under Council Regulation (EC) No 1100/2007 and with a standardized protocol (census of all fishers, interviews and questionnaires submitted to fishers in all fishing sites)
- data quality check based on direct surveys on samples of fishers in each EMU
- computation for each EMU of catches for single eel life stages relative to habitat types (habitat types: RIV rivers, LAK lakes, LGN lagoons, MLG managed lagoons)
- Samplings from commercial catches for biological variables, in one site per EMU identified with EMU Administrations based on the most significant in terms of volume of catch targeting yellow eel and silver eel. Sampling scheme is 15 individuals per stage per EMU, e.g. 135 individuals per stage (yellow and silver eel respectively) for a total of 270 individuals per year.
- In 2025-2027 the following biological variables will be collected: developmental stage (every year) and length and weight (every year), sex and age every three years, starting in year 2025.

Research surveys on salmon, sea trout and eel

The Italian collection of data from eel surveys in relevant habitats have submitted to the Eel Management Plan in order to collect data on recruitment, standing stock, and migration. This involves 7 EMUs surveys over the 9 EMUs, according to a work program that considers No. 5 EMUs/year. Based on the information and data collected during the previous surveys, the need has emerged to optimize monitoring in order to ensure continuity of data collection over the years, for some particularly significant sites, for monitoring purposes, adopting the same survey methodologies.

With this objective, from 2025 onwards the work plan includes survey activities in 5 EMUs each year. The surveys will be conducted in 2 different environments (lagoon and river), identified in 4 different EMUs, 2 facing the Adriatic Sea (Emilia Romagna and Puglia) and 2 facing the Tyrrhenian Sea (Lazio and Tuscany). In addition, 1 survey per year will be conducted in one of the remaining 3 EMUs, including insular EMU (Sardinia), identified in a significant aquatic environment for monitoring different eel growth stages.

Recreational fisheries (eel)

Data collection will target catch data for the two eel life stages targeted by recreational fisheries in transitional and freshwaters in the 9 EMUs, recreational eel fisheries being closed in the rest of the National water bodies (by Regional decrees following the implementation of the Italian Eel Management Plan under Regulation 1100/2007) and marine eel recreational fisheries being non-existent.

Within each EMU, data collection is further stratified according to habitat type, taking into account 3 strata of eel habitat typologies identified in the 9 EMUs, where recreational fisheries occur: RIV (river), LAK (Lake), LGN (Lagoon). Data collection of eel recreational fisheries relies on information provided by EMUs Administrations and their internal system of licensing and catch recording (logbooks, on-line declarations, any other).

Data capture for eel recreational catches recording will be based on off-site interviews to a sample of fishermen by observers, extracted on a statistical basis for each habitat typology in each EMU. The methodology (questionnaires, interviews, catch declarations) is agreed in each EMU with the EMU Administration, depending on the system already in place at the local level, and further standardized for all EMUs.

Data capture foresees catch (yellow and silver eel separated), type of gear, number of gears used daily, and number of fishing days per year.

In Italy, recreational fisheries for eel species is currentlyclosed according to the "*Eel Decree*" (Prot. N.0111260 of 06/03/2024). Nonetheless, no *a priori* information is available regarding a possible re-opening of these fishery activities.

(max 250 words per species and area)

Text Box 2.4: Recreational Fisheries

Region: Mediterranean and Black Sea

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 to collect data on marine and freshwater recreational catches. For freshwater diadromous species, use Table and Text Box 2.3.

(RWP MED&BS implementation years 2025-2027)

For the description of the Recreational fisheries please refer to Table 2.4 in the RWPs of the RCG Med&BS available at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

National specifics if applicable

In table 2.4, Annual e Triennial survey have been reported with the same sampling scheme frame code*(max 250 words per sampling scheme)*

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 to collect data on marine and freshwater recreational catches. For freshwater diadromous species, use Table and Text Box 2.3.

National sampling schemes outside RWP

Description of the sampling scheme/survey according to Table 2.4.

The recreational fisheries activities refers to:

1) *species identified in the GFCM Report (WGRF 2021 appendix 3 and 5): The exact list of species is not yet consolidated, and will be definitively decided at RCG Med&BS level, taking into consideration the work done by GFCM as well;*
2) *large pelagic species, according to the ICCAT list of elasmobranchs and highly migratory species.*

As regards the GFCM species, two different steps will be followed:

- *A telephone screening survey conducted every three years, to update the population of fishers and collect general information. The resulting list will be the base to extract a panel of fishers for a subsequent data collection phase. This one consists of a scientific survey conducted through interviews, realized by observers (interviewers) that fill in the logbook during the interviews.*
- *The data collection phase, carried out annually. The variables collected concern the daily catches per species (retained and/or released), fishing area and fishing type (i.e., shore, boat and underwater fishing). The results will be used to estimate total catches per species.*

As regards the large pelagic species, the monitoring plan foresee:

- *A triannual census of the boats potentially involved in the large pelagic recreational fishery. This census will be considered as the estimate of the universe of anglers, since this type of fishing can only be operated by boat;*
- *A data collection phase, carried out annually, through interviews, realized by observers (interviewers) that fill in the logbook during the interviews. The variables requested concern the monthly catches per species (retained or released), area and fishing technique. This information will be used to estimate total catches per species. The official register of catches for bluefin tuna and swordfish will also be considered.*

*For both species categories (GFCM and large pelagics) and both activities (triennial and annual) the same sampling scheme identifier will be used (SciObsOnShore*recreational (off site surveys))*

(max 900 words per region)

Text Box 2.5: Sampling plan description for biological data

Region: Mediterranean and Black Sea

Sampling scheme name: SciObsOnShore

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): SciObsOnShore

RWP MED&BS implementation years 2025-2027
For the description of the Commercial fishing trip please refer to Table 2.5 in the RWPs of the RCG Med&BS available at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

(max 250 words per sampling scheme)

Sampling scheme name: Sci Obs Shore Commerc Sel Stock

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): Sci Obs Shore Commerc Sel Stock

National schemes from region Mediterranean and Black Seas GFCM and ICCAT

Additional information on sampling schemes

The number of planned samples (PSUs as fishing trips) has been estimated using the sampling optimisation approach (see Appendix 1.1 for details). The high number of PSUs planned to be sampled on shore is due to the fact that for many fishing vessels it is not possible to go on board due to safety reasons, technical and administrative constraints, etc. In general, for the small-scale fisheries (GNS, GTR, etc.), the planned PSUs are all planned to be carried out ashore, whereas for the trawlers (OTB, TBB, etc.), several on-board sampling schemes are planned.

Additional description of sampling frames

For each year the SciObsShoreCommercSelStock sample frame listed 51 different GSA metier combinations (including two targeting large pelagics in all areas). The total number of PSU planned on shore for all the combinations is 1362. For each PSU, the total landings by species will be recorded. In addition, all species are sampled simultaneously with different priorities. The highest priority is given to species that are at the centre of the international management process due to their commercial importance, wide geographical distribution, sampling intensity and interest from fleets of several countries. These include species covered by EU plans, such as management or recovery plans, long-term multi-annual plans or action plans for conservation and management under Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources; then species for which fishing is regulated at international level (GFCM management plans and ICCAT regulations) and important species taken as by-catch that are not regulated at international level; and finally *all other species taken as "by-catch"*.

(One text box (max. 1 000 words) per region/RFMO/RFO/IO)

Sampling scheme name: Sci Obs AtSea Commerc Sel Stock

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): Sci Obs AtSea Commerc Sel Stock

National schemes from region Mediterranean and Black Seas GFCM and ICCAT

Additional information on sampling schemes

As mentioned above, the number of planned samples (PSUs as fishing trips) has been estimated using the sampling optimisation approach (see Appendix 1.1 for details). The planned PSUs to be carried out on board will monitor the activities of the trawlers (OTB_DEF, MDD and DWS), the beam trawlers in GSA17 (Adriatic Sea). The pelagic pair trawlers still in GSA17 and the two main metiers targeting large pelagic species (purse seiners and longliners).

Additional description of sampling frames

For each year the SciObsAtSeaCommercSelStock sample frame listed 19 different GSA metier combinations (including two targeting large pelagics in all areas). The total number of PSU planned at sea for all the combinations is 235.For each PSU, the total catches by species will be recorded. In addition, all species are sampled simultaneously with different priorities (see the brief description in the SciObsAtSeaCommercSelStock sections)

Discards by species and pets information will be collected in each of the on board sampling.

Sampling scheme name: PTM_Out of Frame

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): PTM_Out of Frame

National schemes from region Mediterranean and Black Seas GFCM

Additional information on sampling schemes

NA

Additional description of sampling frames

In addition to the two-sampling frame described above, a dedicated scientific observation at sea sampling scheme, i.e. out-of-frame sampling, has been planned. This out-of-frame sampling scheme will differ from the routinely planned sampling in the collection of commercial population structure and biological information because it will be conducted specifically in the collection of incidental bycatch of sensitive species such as cetaceans, birds, reptiles and protected fish during pelagic trawl fisheries, in order to fulfil the EU obligations set out in the Habitats Directive (92/43/EEC), Regulation (EU) 2019/1241 of 20 June 2019 (repealing Regulation (EC) 812/2004) on the conservation of fishery resources and the protection of marine ecosystems.

The main metier target of this ad-hoc sample frame will be the Pair Trawlers fishing in the Adriatic Sea (Pelagic pair trawl for small pelagic species in GSA17 - GSA17_PTM_SPF_>=20_0_0)

Sampling scheme name: Tuna Sampling On Shore scheme

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): Tuna Sampling On Shore scheme

RWP LP implementation years 2025-2027

For the description of the Tuna Sampling On Shore scheme please refer to Table 2.5 in the RWP of the RCG LP available at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/large_pelagics_rwp_2025-2027_text_2024-09-25

Sampling scheme name: Observe Scheme

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) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.

Sampling scheme name (or identifier): Observe Scheme

RWP LP implementation years 2025-2027

For the description of the Observe Scheme scheme please refer to Table 2.5 in the RWP of the RCG LP available at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/large_pelagics_rwp_2025-2027_text_2024-09-25

Text Box 2.6: Research surveys at sea

Region: Mediterranean and Black Sea

Research survey: International bottom trawl survey in the Mediterranean (MEDITS)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Research survey: International bottom trawl survey in the Mediterranean (MEDITS)

RWP 2025-2027 implementation years

Concerning the activities carried out for the International bottom trawl survey in the Mediterranean, please refers to the Regional Work Plan of the RCGMED&BS, at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

(max 450 words per survey)

Research survey: Beam Trawl Survey (SOLEMON)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Research survey: Beam Trawl Survey (SOLEMON)

RWP 2025-2027 implementation years

Concerning the activities carried out for the Beam Trawl Survey (SOLEMON), please refers to the Regional Work Plan of the RCGMED&BS, at
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

(max 450 words per survey)

Research survey: Mediterranean International Acoustic Survey (MEDIAS)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Research survey: Mediterranean International Acoustic Survey (MEDIAS)

RWP 2025-2027 implementation years

Concerning the activities carried out for Mediterranean International Acoustic Survey (MEDIAS), please refers to the Regional Work Plan of the RCGMED&BS, at
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

(max 450 words per survey)

Research survey: DRES Chamelea (non-mandatory survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Research survey: DRES Chamelea (non-mandatory survey)

1. Objectives of the survey
Concerning hydraulic dredges for striped venus clam *Chamelea gallina* (GSA 17 and GSA 18) two management plans have been adopted in Italy through the Ministerial Decree n. 9913 of 17/06/2019 (Italian National Management Plan) and the Delegated Regulation (UE) 2022/2587 of the Commission (Discard Plan) . Both plans highlight the need to conduct a standardized annual survey (scientific survey), aimed at assessing the state of the resource and the effectiveness of the technical measures adopted. Scientific surveys will be conducted to assess the spatial distribution, abundance and population structure of the species. Information from surveys combined with that from commercial data (landings) are necessary for stock assessment and to define the reference points of management plans. The main biometric measurements (length and weight) will be recorded for the mentioned species.
.

2. Description of the survey design, vessel and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.
The more recent surveys have been conducted following the standard national protocol. A specific survey manual has been prepared in 2018 and it is available on the Italian DCF website (DRES, 2018; Protocol for Dredgers Mollusc Surveys available at https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA). Commercial vessels will be used to conduct the surveys.
Vessel: Commercial vessels will be used to conduct the surveys. The commercial hydraulic dredge used to harvest *C. gallina*, will comprise a rectangular cage around 3 m wide (with distance between rods of 12 mm), weighing approximately 0.6 t, mounted upon two sledge runners. The cage is connected to a hose, which serves to eject water under pressure from the nozzles at the mouth of the dredge and inside the dredge cage.
Sampling protocol: Surveys for *C. gallina* will be conducted in 13 sub-areas of the Adriatic Sea, corresponding to the official maritime departments (GSA 17 and GSA 18; see Fig. d). Each sub-area will be surveyed along regularly spaced transects, approximately 2 nautical miles apart, running perpendicular to the coast. The number of transects will vary depending on the size of each department. Along each transect, sampling stations will be established at fixed intervals (0.25 NM for *C. gallina*) until clams are found, typically at depths of 12-14 meters. At each station, a fishing operation using a hydraulic dredge will be conducted, towing the dredge parallel to the coastline at a constant depth. The dredge will be lowered with the fishing vessel almost stationary, and the start of the tow will be marked when the water pump is activated, and the two side straps become taut. The end of the tow, conversely, will occur when the water pump is turned off, the propeller stops, and the tension in the two side straps is released. In each tow, the aim will be to explore roughly the same area (approximately 300 m^2); to this end, the dredge (width 3 m)) will be towed for a distance of 100 m. The length of the stretch will preferably be measured by recording the tow's track on a GPS navigator or, in the absence of one, using the vessel's radar (if available).
Catch analysis: At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. The catch of the striped venus clam will be conveyed to a mechanical vibrating sieve, composed of a sieving grid (19 mm hole diameter). All striped venus clams retained by the sieve will be weighed, whereas all the unretained clams and discard will be immediately rejected at sea through the waste exhaust pipe. In case of huge catch, a sub-sample will be taken for further analysis. For each sample collected, the length frequency distribution of clams will be studied. In addition, one of the purposes of biological sampling is to study the fraction of juvenile clams. To sample the juveniles striped venus clam, a net bag sampler with small meshes (12 mm diameter) will be mounted inside the dredge. At the end of the haul the total weight of the net bag sampler will be recorded and size frequency distribution of this sample will be also analyzed.
Goal: Carrying out standardized annual surveys at Department level for bivalve mollusks, given their sedentary habit, is of key importance to *i)* investigate the status of the resource (abundance and biomass of the entire population), *ii)* support Consortia in the management of the resource evaluating the most suitable management measures to adopt, *iii)* evaluate the effectiveness of previous management measures taken, *iv)* develop stock assessment models at Department level coupled with the need of landings data availability, *v)* gather key information for drawing up National Management Plans and *vi)* finding scientific explanations to support policy makers on the appropriate measures to be adopted.

Data collection activities are conducted annually. The number of sampling activities planned is 639 for each year while the days at sea will be approximately 31.

NWP 2025-2027 implementation years

(max 450 words per survey)

Research survey: DRES Ensis (non-mandatory survey)

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 annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

Research survey: DRES Ensis (non-mandatory survey)

1. Objectives of the survey

The survey aims to assess the status of the razor clam Ensis minor in the central Tyrrhenian Sea (GSA 9 and 10) where the species is a main target of the hydraulic dredges, usually caught within 0.3 nm from the coast at a maximum depth of 4-6 m. Scientific surveys will be conducted to assess the spatial distribution, the abundance and the main biometric measurements (length and weight) of the species

2. Description of the survey design, vessel and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey.

The more recent surveys have been conducted following the standard national protocol. A specific survey manual has been prepared in 2018 and it is available on the Italian DCF website (DRES, 2018; Protocol for Dredgers Mollusc Surveys available at https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA).

Vessel: Commercial vessels will be used to conduct the surveys. The commercial hydraulic dredge used to harvest *E. minor* will comprise a rectangular cage around 3 m wide (with distance between rods of 17 mm), weighing approximately 0.6 t, mounted upon two sledge runners. The cage is connected to a hose, which serves to eject water under pressure from the nozzles at the mouth of the dredge and inside the dredge cage.

Sampling protocol: Surveys for *E. minor* will be conducted in 3 Departments (Roma, Gaeta, Napoli; GSA 9 and GSA 10, see Fig. d). The sampling will follow a transect pattern perpendicular to the coastline, spaced approximately 2 nautical miles apart, unless impeded by obstacles at sea (e.g., breakwater barriers) that prevent regular positioning. Sampling stations will be positioned based on a bathymetric gradient (rather than the distance from the coast described for the clam survey). This is due to the distribution range of the species, which is confined to a narrow coastal strip (the species is rarely found beyond 0.2 miles from the coast). For each transect, sampling stations will be located at increasing bathymetries from 1 to 5 m (1, 2.5, 5 m). At each station, the dredge will be towed parallel to the coastline at a constant depth, using an anchor instead of the propeller towing method described for the clam survey. In each sampling station, an area of around 300 m^2 will be surveyed (width of cage 3 m x 100 m of tow). The dredge will be lowered into the sea with the vessel stationary, and the start of the tow will coincide with the activation of the water pump and when the two side straps become taut. Conversely, the end of the tow will coincide with the water pump being turned off and the retrieval of the anchor placed at the stern. Since the dredge will be towed by retrieving the anchor cable, which is lowered into the sea at the start of the fishing operation, the length of the anchor cable (100 m) will define the length of the area swept by the dredge. If needed, the distance covered may be reduced to 70 m to avoid excessively long fishing times. The length of the swept area will be monitored by the track recorded on a GPS navigator (in addition to checking the length of the cable).

Catch analysis: At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. All specimens retained by the dredge will be sorted manually (given the absence of sieves onboard dredgers fishing for razor clams) and weighed. For each sample, the razor clam length frequency distribution will be studied. In addition, to sample the juveniles razor clams, a net sampler bag with small meshes (12 mm diameter) will be mounted inside the dredge. Size frequency distribution of this sample will be also analyzed.

Goal: Carrying out standardized annual surveys at Department level for bivalve mollusks, given their sedentary habit, is of key importance to *i)* investigate the status of the resource (abundance and biomass of the entire population), *ii)* support Consortia in the management of the resource evaluating the most suitable management measures to adopt, *iii)* evaluate the effectiveness of previous management measures taken, *iv)* develop stock assessment models at Department level coupled with the need of landings data availability, *v)* gather key information for drawing up National Management Plans and *vi)* finding scientific explanations to support policy makers on the appropriate measures to be adopted.

Data collection activities are conducted annually. The number of sampling activities planned is 106 for each year while the days at sea will be 8.

NWP 2025-2027 implementation years

(max 450 words per survey)

SECTION 3: FISHING ACTIVITY DATA

Text Box 3.1: Fishing activity variables data collection strategy

Region: Mediterranean and Black Seas

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

National strategies
Explain the reasons for implementing complementary data collection.

The collection of transversal data will be carried out in a differentiated manner for the following categories of fleets.

- Fleet >=10 meters: Control Regulation (logbook and VMS)
- Fleet < 10 meters: PSS - Probability Sample Survey
- Dredgers: Control Regulation

Data from the Control Regulation will be used as the source for collecting fishing activity variables for vessels that are 10 meters or longer. Vessels shorter than 10 meters are exempt from complying with the control regulation and are instead subject to probability sample survey (PSS).
The data reported and transmitted under Regulation (EC) No 1224/2009, logbooks, sales notes and positional data, such as VMS data, shall be provided in primary form. Then such data are checked and validated monthly using a specific procedure developed in RStudio environment.
Dredgers fleet. The units engaged in fishing for clams (*Chamelea g*allina, striped venus), based on specific ministerial decrees are associated in the Management Consortium established on the basis of single maritime districts (Compartimenti). Consortia, manage on a monthly basis, both the activity level and the maximum amount of landing per day of fishing. Considering that the vessels are required to make the declarations required by the control regulation, the sample survey in this case is considered useless.

(max. 900 words)

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

Region: Mediterranean and Black seas

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.
National strategies. The total eel fishing capacity in Italy (number of commercial fishermen) is difficult to estimate as it could coincide with the full amount of licensed fishermen in inland waters (rivers and lakes) and coastal lagoons, because so specific eel license is contemplated. In reality, the fishers actually involved in eel fishing in the EMU concerned, regardless of the type of habitat in which they operate, is much lower. Overall, a representative sample of fishers (either autonomous fishers or cooperatives) involved in eel fishing in the 9 regions in the various habitats types (strata: Rivers –RIV, Lakes, LAK, Lagoons- LAG, Managed lagoons MLG) are interviewed annually, although at regular intervals (every 2-3 years) a census and interview of all fishermen is carried out. The interviews are conducted with questionnaires in which each fisher reports data relating to eel catches per stage, types of fishing gear, the number of gear used daily and the number of actual fishing days in the months concerned. *(max. 900 words)*

SECTION 4: IMPACT OF FISHERIES ON MARINE BIOLOGICAL RESOURCES

Text Box 4.2: Incidental catches of sensitive species

Region: Mediterranean and Black seas

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.
RWP MED&BS implementation years 2025-2027 Concerning the activities carried out for Incidental catches of sensitive species, please refers to the Regional Work Plan of the RCGMED&BS, at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30 *(max 250 words per activity)*

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.
National activities *Additional information on planning the observation of incidental catches of sensitive species (if already filled in in Annex 1.1, please indicate where it can be found):* Incidental bycatch of sensitive species (Protected, Endangered and Threatened - PET) will be recorded through the SciObsAtSea sampling scheme (in all the at sea PSU planned), and additional information will be collected through i) dedicated onshore interviews as part of the SciObsOnShore sampling scheme and ii) Logbooks. For both SciObsOnShore data collection (interviews and logbooks), fishers will be asked to provide information about quantitative and qualitative structure of the bycatch. In addition, a dedicated scientific observation at sea sampling scheme, i.e. out-of-frame sampling, has been planned. This out-of-frame sampling scheme will differ from the routinely planned sampling in the collection of commercial population structure and biological information because it will be conducted specifically in the

collection of incidental bycatch of sensitive species such as cetaceans, birds, reptiles and protected fish during pelagic trawl fisheries in Adriatic, in order to fulfil the EU obligations set out in the Habitats Directive (92/43/EEC), Regulation (EU) 2019/1241 of 20 June 2019 (repealing Regulation (EC) 812/2004) on the conservation of fishery resources and the protection of marine ecosystems.

- *Has an assessment of the relative risk of bycatch for the different gear types/metiers taken place and been taken into account for the sampling design?*

A complete assessment of the relative risk of bycatch for the different gear types/metiers was not realised yet. According to Recommendation 4 of RCG Med&BS 2021, a joint workshop of RCG Med&BS and STREAMLINE on data needed to assess the impact of fisheries on the marine ecosystem took place in April 2022. The outcomes are considered. A PSA-based risk analysis was conducted for the Mediterranean (Li Veli et al., 2024) at sub-regional level, but not at the metier and GSA level. However, the outputs of this study were also considered.

- *What are the gear types/metiers that present the highest risk of bycatch per species/taxa of PETS in a given region?*

Through a series of pilot activities, pelagic trawls, bottom trawls, longlines (both bottom and drifting), and set nets were identified as high-risk gear types for PETS bycatch. However, the risk related to the gear- PET species varies with area: e.g., bottom trawling poses high risk for sea turtles in the Adriatic Sea (GSA 17 and the northern part of GSA18), while the risk is negligible in the Tyrrhenian and Ligurian seas.

One of the follow-up actions will be to better identify high-risk gears by group of species/areas/seasons for bycatch monitoring, considering the results of pilot studies. Particular attention will be paid to pelagic trawlers, as mentioned above, with a specific sampling based on Reg (UE) 2019/1241.

- *What are the methods to calculate the observation effort?*

For on-board sampling (SciObsAtSea sampling scheme) of demersal trawls, pelagic purse seines, beam trawls and pelagic trawls (both SciObsAtSea sampling scheme and ad-hoc Out of Frame sampling scheme), bycatches are recorded by scientific observers throughout the fishing trip.

The PSU is the fishing trip. On-board observers are responsible for monitoring, during all fishing operations of a day (the fishing trip), the presence of bycatch of PET species and species that indicate the presence of VMEs. The observation effort is calculated as the ratio between observed trips to total fleet trips (total effort) per métier and GSA.

In addition, to ensure data quality, observers are instructed to take photographs of the haul at the opening of the codend before the sorting process begins, as well as photographs of any rare species caught.

- *Does the sampling design and protocol follow the recommendations from relevant expert groups? Provide appropriate references. If there are no relevant expert groups, the design and protocol have to be explained in the text.*

Yes.

FAO. 2019. Monitoring the incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: Methodology for data collection. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO: https://www.fao.org/gfcm/publications/series/technical-paper/640/en/

EU obligations set out in the Habitats Directive (92/43/EEC), Regulation (EU) 2019/1241 of 20 June 2019 (repealing Regulation (EC) 812/2004) on the conservation of fishery resources and the protection of marine ecosystems.

Additional information on observer protocols (if already filled in in Annex 1.1, indicate where it can be found):

Observer protocols are available in Annex 1.1. The sampling protocols are based on the recommendations of GFCM (please see the GFCM Manual on the monitoring of the bycatch of vulnerable species, https://www.fao.org/gfcm/publications/series/technical-paper/640/en/).

Recording sheets were developed during the Pilot Study of PETs bycatch performed under the Italian NWP 2017-2019. Those documents are in line to the proposals provided by the EU regional grants MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthning-regional-cooperation), and STREAM (see Deliverable 4.3 embedded into the Final Report, https://datacollection.jrc.ec.europa.eu/documents/d/dcf/med-and-bs_stream_mare-2016-22).

The ongoing work performed under STREAMLINE (MARE/2020/08) is also taken into consideration.

- *Does the on-board observer protocol contain a check for rare specimens in the catch at opening of the cod-end? If YES is the observer instructed to indicate if the cod-end was NOT checked in a haul?*

Yes, onboard observers do check for rare specimens and are instructed to indicate if the cod-end was not checked.

- *In gill nets - and hook-and-line fisheries: does the on-board observer protocol instruct the observer to indicate how much of the hauling process has been observed for (large) incidental bycatches that slip out of the net?*

Yes

- *In large catches: does the protocol instruct to check for rare specimens during sorting of the catch (i.e. at conveyor belt)? Is the observer instructed to indicate what percentage of the sorting or hauling process has been checked at "haul level"?*

Yes, both are carried out accordingly.

Additional information on sampling schemes

Member State may add specific contextual information related to a region and the implementation year(s), for instance highlighting new developments not yet detailed in the quality document, regional adaptation and/or perspectives for the future. Insert the information under the same sampling scheme identifier as in Table 2.5.

NA

Additional description on sampling frames

Member State may add complementary description to what includes the 'Sampling frame description' column of Table 2.5. Insert the information under the same identifier and name as in columns 'Sampling frame identifier' and 'Sampling frame description' of Table 2.5, and in the same order (Sampling frame identifier + Sampling frame description).

NA

(One text box (max. 1 000 words) per region/RFMO/RFO/IO)

Text Box 4.3: Fisheries impact on marine habitats

Region: Mediterranean and Black Seas

Study: Regional coordination on fish stomach contents collection and analysis in the Medb

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.

Name of the study: Regional coordination on fish stomach contents collection and analysis in the Med&BS

RWP MED&BS implementation years 2025-2027
National specifics if applicable
For the description of the Regional coordination on fish stomach contents collection and analysis in the Med&BS please refer to the RWPs of the RCG Med&BS available at
https://datacollection.jrc.ec.europa.eu/documents/d/dcf/medbs_rwp_2025-2027_text_2024-08-30

(max 250 words per study)

Study: ECOVMS

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.

Name of the study: ECOVMS

National studies

1. Aim of the study
Ecosystems are spatially heterogeneous and spatial patterns and processes are important to ecosystem structure and function, whereas the distribution of fishing activities depends on the distribution of the targeted resource. Mediterranean regulations very often have a spatial component explicitly through time and area closures. Spatial management tools are used to protect spawning aggregations, to reduce bycatch, or to meet other single-species objectives. Within this framework, this study aims at providing ecosystem indicators for spatial effort to define and to evaluate management measures.

2. Duration of the study 2025-2027

3. Methodology and expected outcomes of the study
Within the Italian WP, the following ecosystem indicators for spatial effort will be estimated:
"Distribution of fishing activities". It will be based on the total area of grids (3 km x 3 km) within which VMS records were obtained, each month. This indicator will apply MCDA (Multi-Criteria Decision Analysis) to estimate the contribution of the small-scale fisheries, attempting to provide an overall representation of fishing effort.
"Swept area of fishing activities". It will be based on assessment of fishing effort by the total monthly swept area with respect to the 3 km x 3 km grid, for the portion of the fleet equipped by VMS and/or AIS.
"Aggregation of fishing activities". It will be based on the total area of grids (3 km x 3 km) within which 90% of VMS records were obtained, each month.
"Gini's Index of the fishing pattern". It will be represented by the value of the Gini's index computed, at a monthly scale, on the fishing effort pattern (hours of fishing per cell) returned within the computation of the indicators 5.
"Areas not impacted by mobile bottom gears". Indicator of the area of seabed that has not been impacted by mobile bottom fishing gears in the last year. It will be computed also at a monthly scale.
"Substrates not impacted by mobile bottom gears". Indicator of the area of seabed that has not been impacted by mobile bottom fishing gears in the last year with respect to the type of sea bottom substrates (fishing effort will be mapped on substrates distributions) and or bathymetric stratum (0–20m, 20–50m, 50– 80m, 80–130m, 130–200 m, 200–500 m, 500–800 m, 800–1000 m, > 1000m). It will be computed at both annual and monthly scale.
The proposed ecosystem indicators will provide estimations and distribution of spatial effort. In order to assess the impact of fisheries on marine habitats, the proposed indicators will be combined with habitat information. To this aim, the seabed habitats mapped within the EMODNET project will be used

(http://www.emodnet.eu/seabed-habitats).

(max 900 words per study)

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.

RWP ECON implementation years 2025-2027
National specific aspects
1. Description of clustering

In line with Table 8 of EUMAP (Commission Delegated Decision (EU) 2021/1167 of 27 April 2021), the fleet is segmented into homogeneous groups of vessels according to the prevalent fishing technique and the length class. A further segmentation of the fleet based on FAO geographical sub-areas (GSA) is used in the sampling design to improve the representativeness of the sample. This level of stratification may generate very small strata that have to be clustered to ensure statistical confidentiality and in order to design a statistically sound sampling plan. Consistency in clustering scheme is maintained constant over time unless structural changes in the fleet require to adjust the segmentation.
Table 5.1 reports the fleet segments that have been clustered. Clusters are named after the biggest segment in terms of number of vessels. Only "segments similar to other segments" are clustered for sampling purposes. Similarity is explained in the following text using expert knowledge on fishing patterns and on available data on capacity structure.

As reported in Table 5.1, the clusters defined on the basis of the most recent available fleet (that is 2023) are: Dredgers 12-< 18 m *, Vessels using hooks 18-< 24 m *, Vessels using Polyvalent "passive" gears only 12-< 18 m *, Beam trawlers 12-< 18 m *, and Pelagic trawlers 12-< 18 m *.

The cluster "Dredgers 12-< 18 m *" consists of fleet segments "Dredgers 12-< 18 m", "Dredgers 6-< 12 m" and "Dredgers 18-< 24 m". The clustering of dredgers is due to the high similarity of the vessels, which are very specialised targeting mainly striped venus and smooth clam (*Chamelea gallina* and *Callista chione*). Furthermore, dredgers are homogenous in terms of size, gears and fishing practices. Vessels have an average LOA of 13.5 meters and 86% of them belong to the class 12-18 meters; just a vessel is longer than 18 meters. Therefore, the division into length classes is not statistically justified. Moreover, it is demonstrated that revenues are not correlated with the LOA of the vessels, and this proves the high level of homogeneity of the vessels.

The cluster "Vessels using hooks 18-< 24 m *" consists of fleet segments "Vessels using hooks 18-< 24 m" and "Vessels using hooks 24-< 40 m". As the fleet segment "Vessels using hooks 24-< 40 m" includes just 2 vessels, the clustering is due to confidentiality reasons and the design of the sampling plan. The method used for clustering is based on the similarity between the two fleet segments.

The cluster "Vessels using Polyvalent "passive" gears only 12-< 18 m *" consists of fleet segments "Vessels using Polyvalent "passive" gears only 12-< 18 m", "Vessels using Polyvalent "passive" gears only 18-< 24 m" and "Vessels using Polyvalent "passive" gears only 24-< 40 m". As the fleet segment "Vessels using Polyvalent "passive" gears only 18-< 24 m" and "Vessels using Polyvalent "passive" gears only 24-< 40 m" consist of just 3 vessels and 1 vessel respectively, the clustering is due to confidentiality reasons and the design of the sampling plan. The method used for clustering is based on the similarity between the three fleet

segments.

The cluster “Beam trawlers 12-< 18 m *” consists of fleet segments “Beam trawlers 12-< 18 m” and “Beam trawlers 6-< 12 m”. As the fleet segment “Beam trawlers 6-< 12 m” includes just 3 vessels, the clustering is due to the design of the sampling plan. The method used for clustering is based on the similarity between the two fleet segments.

The cluster “Pelagic trawlers 12-< 18 m *” consists of fleet segments “Pelagic trawlers 12-< 18 m” and “Pelagic trawlers 6-< 12 m”. As the fleet segment “Pelagic trawlers 6-< 12 m” includes just 3 vessels, the clustering is due to the design of the sampling plan. The method used for clustering is based on the similarity between the two fleet segments.

2. Description of activity indicator
No activity indicator is applied.

3. Deviation from the RCG ECON (ex. PGECON) definitions
No deviation.

(max. 900 words)

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 data to be collected under Tables 10 and 11 of the EU MAP Delegated Decision annex.

RWP ECON implementation years 2025-2027

National specific aspects

1. Description of the threshold application

According to the latest data for 2022, available on Eurostat for the EU-27, Italian aquaculture production, with a production of 138,247 t, represents approximately 13% of the European total, placing itself, together with Greece, in fourth place after Turkey with 510,924 t, Spain with 272,589 t and France with 184,052 t. The thresholds that will be applied to the individual production segments (see Table 11 of the EU MAP) for the collection of economic data will be lower than 5% of the aquaculture production of the Member State both in weight and in value. For species that represent less than 5% of the total National aquaculture production, in volume and value, production data will not be collected, because they are considered negligible and not significant on the total national production

2. Deviation from the RCG ECON (ex. PGECON) definitions

In the data collection activity there are no deviations and changes from the provisions of the EU MAP Guidance Document. The specifications will be maintained regarding the Aquaculture techniques, the Aquaculture species group and the Type of variable and Economic and Social variables

(max. 900 words)

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.

RWP ECON implementation years

National specific aspects

1. The Member State should provide justification for complementary data collection for fish processing in addition to Eurostat data.
Data collection for the fish processing sector is planned to be carried out following the same approach as in previous years. Detailed data (by size classes and by NUTS2) on processing industry is needed in Italy as additional data is required for supporting the programming and the evaluation of measures targeting the fishing processing industry which are planned for the Italian programming period 2021- 2027 under the umbrella of EMFAF.

2. Deviation from the RCG ECON (ex. PGECON) definitions

No deviations

(max. 900 words)

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.

Related to Table and Text Box 2.5

Sampling scheme identifier: Sci Obs Shore Commerc Sel Stock

MS : ITA
Region: Mediterranean and Black Sea
Sampling scheme identifier: *Sci Obs Shore Commerc Sel Stock*
Sampling scheme type: Commercial fishing trip
Observation type: *SciObsOnShore*
Time period of validity: from 2025 until 2027
Short description (max 100 words): The species to be monitored are those listed in Table 1 of the Annex to the Delegated Decision of the EU MAP whose landings exceed the threshold of 200 tons or 10% of the yield of the fisheries of the Member States in the region. Sampling will be carried out on the vessel selected by the ranking system procedure to assess the biological characteristics of the selected species in the catches, including the discarded fraction. The monitoring of incidental catches of PETs (Protected, Endangered and Threatened Species) will be carried out, where possible, through a series of interviews in line with the at-sea data collection for the métiers where incidental catches are more likely to occur, such as pelagic trawls, demersal trawls, bottom longliners, surface longliners and fixed gears (see also Box 4.2 and Table 2.5)
Description of the population
Population targeted: The target population for the reference year will be the mean number of fishing trips by métier of the most recent three years. Fishing trip will be considered equal to fishing day **Population sampled**: The sampled population will be a selection of fishing trips, mainly on a spatial (GSA) and temporal (quarterly) stratification basis, with measurements of catch composition in order to detect seasonal differences in the demographic structure and composition of landings and discards for different métiers. The catch of selected fishing trips shall be sampled directly at landing. The number of fishing trips to be sampled by métier and GSA is shown in Table 2.5 and has been planned according to a sampling optimisation approach. Indeed, an ad hoc national working group on sampling optimisation has been set up to estimate the optimal number of primary sampling units (PSUs) for the compilation of Table 2.5 of the 2025-2027 work plan. This analysis is based on work carried out in the European STREAM project and further consolidated in the STREAMLINE project, as well as contributions from the ICES WGBIOPTIM Working Group and the Inter-Sessional Sub-Group (ISSG) on Sampling Optimisation (Regional Coordination Group Mediterranean and Black Sea, RCG Med&BS). The tool used to estimate the primary sampling units (PSUs) in terms of sampling trips is SDTool, which is available on GitHub (https://github.com/aleligas/STREAM_MARE-2016-22/tree/master/Task%203.3). SDTool (Sampling Design Tool) was first developed in the MARE/2014/19 Med&BS project using R language to explore the effects of various changes in the current sampling design (e.g., number of trips) on precision, measured by the Coefficient of Variation (CV). This analysis employs resampling techniques (bootstrapping) on detailed historical data. The underlying statistical principle is that the CV decreases as the number of sampling units increases, forming a curve. Within the Sampling Design Tool, the section of the curve where the tangent changes and begins to flatten (i.e. the curvature region) is considered an appropriate trade-off between precision and sampling effort, and is proposed as the 'optimal' sample size in terms of number of trips. The recommended solutions represent a compromise for a number of target species in order to maintain or improve the current

level of sampling precision.

The SDTool was applied to a set of species selected according to their presence in the DCF species list (Table 1 Mediterranean and Black Sea RCG. Commission Delegated Decision (EU) 2021/1167), their economic relevance (revenues), their presence in a Multi-Annual Management Plan (MAP; e.g. Recommendation GFCM/43/2019/5 and following) and their inclusion in the GFCM G1 and/or G2 species group (priority species, GFCM-DCRF-manual-2018_v.23.2).

The most relevant métiers for demersal and pelagic species of each GSA were identified based on the ranking system applied in the Data Collection Framework, using FDI 2023 data. Métiers not included in the ranking system, but considered relevant, were included based on a minimum annual sampling effort (e.g. 12 sampling occasions).

Finally, due to the fact that in many cases the vessels belonging to the small-scale fisheries métiers (GTR trammel nets, GNS gillnets, LL longliners) are too small to obtain permission from the maritime authorities to go on board, all the PSU selected for these métiers are carried out ashore. The shore-based sampling has also been applied to larger vessels such as trawlers that spend too many days at sea (some trawlers stay at sea for weeks).

In biological sampling (table 2.2), all species sampled have been set as Opportunistic sample due to the difficulties in planning a priori a sensible number. Future plans include the application of BioSim tool (https://github.com/aleligas/STREAM_MARE-2016-22/tree/master/Task%203.3) to identify the optimal number of individuals to be measured "at sample level" (i.e. per trip/haul) to obtain an accurate representation of the catches from the sampled population. BioSim tool built on the work of WGBIOPTIM and was finalized in STREAM project. BioSim tool allows to derive the optimal number of sex observations, sexual maturity measurements and number of hard structures to be collected (and aged) to maintain (approximately) or improve the current level of sampling precision.

Stratification: Metiers by GSA to be sampled were identified by a ranking system. Metiers by GSA contributing to the 90% of the cumulated yield, effort and value of landing of Italy were selected for sampling.

Sampling design and protocols

Sampling design description: The sampling will be accomplished according to the methods of a two-stage stratified random sampling: the sampling unit belonging to the métier (primary unit) will be the fishing trip (secondary unit). The number of fishing days to be sampled has been defined proportionally to the effort (number of days at sea for each métier). The species for which length and additional biological parameters are collected, are listed in Tables 2.1 and 2.2 respectively

Is the sampling design compliant with the 4S principle?: N. The adopted sampling design is NPCS

Regional coordination: Italy coordinates its national plan with that of the other Member States within the following Regional Coordination Groups: RCG MED & BS (coordination group for the Mediterranean and Black Sea), RCG LP (coordination group for large pelagic), RCG LDF (coordination group for fisheries in areas other than the Mediterranean). The role of the RCG, in addition to facilitating this coordination, is to develop and implement the procedures, methods, and quality control for the collection and processing of data, to further improve the reliability of scientific opinions. In addition, regional coordination groups can develop draft regional work plans, compatible with the multi-year program of the Union (Article 9 of EU Reg. 1004/2017).

Link to sampling design documentation: A summary of the methodologies applied for the estimation of demography of landings, discards, the calculation of growth and reproduction parameters, and the related precision levels, it is provided under the following link
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici

Design follows international recommendations: *Y.* The Work Plan follows the recommendations made by the

GFCM, RCG Med&BS and RCG LP

Link to sampling protocol documentation:
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici
Protocol follows international recommendations: *Y*

Sampling implementation

Recording of refusal rate: *NA*

Monitoring of sampling progress within the sampling year: During the year, the sampling process is monitored by several meetings between the administration and the RTI (Raggruppamento Temporaneo d'Imprese) researchers, who routinely provide the state of the art. In addition, the scientific institutes involved in the various modules prepare several reports summarising the progress of the work, which are submitted to the administration throughout the year.

Data capture

Means of data capture: Biological are collected at laboratories by scales, measuring board, stereomicroscope and dedicated software. Information on catch and fishing operation of the sampled trip will be obtained by interviews. A sample of discarded fraction of catches will be self-sampled by fishers following a standardized protocol furnished by researchers. Data reported and transmitted under Regulation (EC) No 1224/2009, including logbooks, sales notes and positional data, such as VMS data, will be also used to verify the interview information.
Data capture documentation: *NA.*

Quality checks documentation: *Y*

Data storage

National database: The Italian data base FishDataNet is available at: Fishnet (cnr.it)

International database: Italian data collected within the DCF program are submitted by data call and stored in EU JRC and GFCM database

Quality checks and data validation documentation: Quality and consistency controls implemented by Italy are based on the ISYCAMPBIOL system developed by COISPA Tecnologia & Ricerca to store, check and process the data collected in the Italian National Program with reference to variables relating to monitoring of commercial catch.
Documentation can be found at link:
https://dcf-italia.cnr.it/rest/uploads/Controlli%20qualit%C3%A0%20variabili%20biologiche

Sample storage

Storage description: Soft organic tissues are kept frozen or kept in cold storage. Hard structures (otoliths, etc.) are kept in dry storage. All these storage systems are securely kept.

Sample analysis: Information on the processing of the biological samples of catch is provided at link: https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici

Data processing

Evaluation of data accuracy (bias and precision): *Y*
https://dcf-italia.cnr.it/rest/uploads/Controlli%20qualit%C3%A0%20variabili%20biologiche
Editing and imputation methods: *Y*

Quality document associated to a dataset: *Y;*
https://dcf-italia.cnr.it/rest/uploads/Controlli%20qualit%C3%A0%20variabili%20biologiche

Validation of the final dataset: Final dataset validation is done within the national DataBase

Sampling scheme identifier: Sci Obs Sea Commerc Sel Stock.

MS : ITA
Region: Mediterranean and Black Sea
Sampling scheme identifier: Sci Obs Sea Commerc Sel Stock.
Sampling scheme type: Commercial fishing trip
Observation type: *SciObsAtSea*
Time period of validity: from 2025 until 2027
Short description (max 100 words): Monitored species are those included in Annex, Table 1 of the EU MAP Delegated Decision annex whose landing resulted higher than the threshold of 200 tons or the 10% of the yield of MS's fisheries in the Region. Sampling will be performed on the métier selected through the ranking system procedure, to evaluate length distribution of selected species in the catches, including discarded fraction. The objective of this sampling scheme is also to identify and characterize the bycatch of vulnerable species (PETS: Protected Endangered and Threatened Species). Observation of PETS will be covered within the sampling scheme (along with quantification of PETS observation effort).
Description of the population
Population targeted: The target population for the reference year will be the mean number of fishing trips by metier of the most recent three years. Fishing trip will be considered equal to fishing day. **Population sampled:** Specify which part of the target population will be sampled and specify which part of the target population is unreachable for sampling or excluded for some reason to explain, e.g. major ports being listed as auctions excluding all minor ports and no sampling during the weekends. For research surveys at sea describe target species in single-species surveys or ecosystem component (e.g. demersal, pelagic) in multispecies surveys. The sampled population will be a selection of fishing trips, mainly on a spatial (GSA) and temporal (quarterly) stratification basis, with catch composition measurements to detect seasonal differences in the demographic structure and composition of landings and discards for different metiers. The number of trips to be sampled per metier and GSA is shown in Table 2.5 and was based on a sampling optimisation process (see above in the onshore section for more details). Based on the considerations reported in the onshore section about the difficulties of boarding, on-board observations were only planned for coastal/shelf trawlers or deeper/slope trawlers operating in GSAs where the bathymetry gets deeper quite close to the coast (e.g. in GSA9). Finally, for large pelagic fisheries, at-sea sampling was planned for metiers (where vessel size allows for on-board observers) and for pelagic and beam trawlers in GSA17 (Adriatic Sea). In biological sampling (table 2.2), all species sampled have been set as Opportunistic sample due to the difficulties in planning a priori a sensible number. Future plans include the application of BioSim tool (https://github.com/aleligas/STREAM_MARE-2016-22/tree/master/Task%203.3) to identify the optimal number of individuals to be measured "at sample level" (i.e. per trip/haul) to obtain an accurate representation of the catches from the sampled population. BioSim tool built on the work of WGBIOPTIM and was finalized in STREAM project. BioSim tool allows to derive the optimal number of sex observations, sexual maturity measurements and number of hard structures to be collected (and aged) to maintain (approximately) or improve the current level of sampling precision. **Stratification:** Explain the logic taken to stratify the population and the number of strata generated, e.g. population stratified in 3 geographical lots (from A to B, from B to C and from C to D). Each lot is then stratified by auction. Metiers by GSA to be sampled were identified by a ranking system. Metiers by GSA contributing to the 90% of the cumulated yield, effort and value of landing of Italy were selected for sampling. Through a series of pilot activities, it has been defined that pelagic trawls, demersal trawls, bottom and surface longlines and fixed nets are high risk gear types for by catch of PETS. One of the follow up actions is to identify high risk metiers by group of species for by-catch monitoring, considering the results of pilot studies. Particular attention will be given to pelagic trawlers on the base of Reg. (UE) 2019/124.
Sampling design and protocols

Sampling design description: The sampling will be accomplished according to the methods of a two-stage stratified random sampling: the sampling unit belonging to the metier (primary unit) will be the fishing trip (secondary unit). The number of fishing days to be sampled has been defined proportionally to the effort (number of days at sea for each metier). The species for which length and additional biological parameters are collected, are listed in Tables 2.1 and 2.2 respectively. The PET species for which data are collected are those included in the FAO (2019) manual "Monitoring incidental catch of vulnerable species in the Mediterranean and Black Sea: methodology for data collection. For all these species, all catch fractions, i.e. landings, discards and incidental catches (Protected, Endangered and Threatened species – PET) are recorded by the on-board observer (see also Text Box 4.2). The PET monitoring protocol foresees that for each haul observations on accidental catches of cetaceans, sharks, rays, sea turtles and sea birds are recorded in tems of species and number of individuals, and any additional information
Reference FAO. 2019. Monitoring incidental catch of vulnerable species in the Mediterranean and Black Sea: methodology for data collection. FAO Fisheries and Aquaculture Technical Paper N 640. Rome, FAO
link*:* *https://www.fao.org/gfcm/publications/series/technical-paper/640/en/.*

Is the sampling design compliant with the 4S principle?: N. The adopted sampling design is NPCS

Regional coordination: Italy coordinates its national plan with that of the other Member States within the following Regional Coordination Groups: RCG MED & BS (coordination group for the Mediterranean and Black Sea), RCG LP (coordination group for large pelagic), RCG LDF (coordination group for fisheries in areas other than the Mediterranean). The role of the RCG, in addition to facilitating this coordination, is to develop and implement the procedures, methods, and quality control for the collection and processing of data, to further improve the reliability of scientific opinions. In addition, regional coordination groups can develop draft regional work plans, compatible with the multi-year program of the Union (Article 9 of EU Reg. 1004/2017).

Link to sampling design documentation: A summary of the methodologies applied for the estimation of demography of landings, discards, the estimation of growth and reproduction parameters, and the related precision levels, it is provided under the following link
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici

Design follows international recommendations: The Work Plan follows the recommendations made by the GFCM, RCG Med&BS and RCG LP

Link to sampling protocol documentation: A summary of the methodologies applied for the estimation of demography of landings, discards, the calculation of growth and reproduction parameters, and the related precision levels, it is provided at the following link
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici

As concerns PETS, **The sampling protocols are based on the recommendations of GFCM (please see the GFCM Manual on the monitoring of the bycatch of vulnerable species, *https://www.fao.org/gfcm/publications/series/technical-paper/640/en/*). Recording sheets were developed during the Pilot Study of PETs bycatch performed under the Italian NWP 2017-2019. Those documents are in line to the proposals provided by the EU regional grants MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, *Regional grants - European Commission (europa.eu)*, and STREAM (see Deliverable 4.3 embedded into the Final Report, *https://datacollection.jrc.ec.europa.eu/documents/d/dcf/med-and-bs_stream_mare-2016-22)*.**

Protocol follows international recommendations:
NA

Sampling implementation

Recording of refusal rate: *NA*

Monitoring of sampling progress within the sampling year: During the year, the sampling process is monitored by several meetings between the administration and the RTI (Raggruppamento Temporaneo

d'Imprese) researchers, who routinely provide the state of the art. In addition, the scientific institutes involved in the various modules prepare several reports summarising the progress of the work, which are submitted to the administration throughout the year.

Data capture

Means of data capture: Biological are collected at laboratories by scales, measuring board, stereomicroscope and dedicated software. Information on catch and fishing operation of the sampled trip will be obtained by interviews. A sample of discarded fraction of catches will be self-sampled by fishers following a standardized protocol furnished by researchers. Data reported and transmitted under Regulation (EC) No 1224/2009, including logbooks, sales notes and positional data, such as VMS data, will be also used to verify the interview information.
Data capture documentation: *NA*

Quality checks documentation: *Y*

Data storage

National database: The Italian data base FishDataNet is available at: Fishnet (cnr.it)

International database: Italian data collected within the DCF program are submitted by data call and stored in EU JRC and GFCM database

Quality checks and data validation documentation: Quality and consistency controls implemented by Italy are based on the ISYCAMPBIOL system developed by COISPA Tecnologia & Ricerca to store, check and process the data collected in the Italian National Program with reference to variables relating to monitoring of commercial catch.

Sample storage

Storage description: Y; Soft organic tissues are kept frozen or kept in cold storage. Hard structures (otoliths, etc.) are kept in dry storage. All these storage systems are securely kept.

Sample analysis: Provide a brief description or the references to documents, including link to webpages (e.g. age reading manuals, expert group's reports and protocols) if adequate, where information on the processing of the samples is provided.

Information on the processing of the biological samples of catch is provided at link:
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici

Data processing

Evaluation of data accuracy (bias and precision): Information on the processing of the biological samples of catch is provided at link:
https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici
Editing and imputation methods: *Y*

Quality document associated to a dataset: *Y*
https://dcf-italia.cnr.it/rest/uploads/Controlli%20qualit%C3%A0%20variabili%20biologiche
Validation of the final dataset: *Final dataset will be done within the national DataBase.*

Sampling scheme identifier: PTM - Out of Frame

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: PTM - Out of Frame

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: from 2025 until 2027

Short description (max 100 words): Observation of PETS will be covered within the sampling scheme (along with quantification of PETS observation effort).

Description of the population

Population targeted: The target population for the reference year will be the mean number of fishing trips by pelagic trawlers in the Adriatic Sea (PTM in GSA17) of the most recent three years. Fishing trip will be considered equal to fishing day.

Population sampled:
This out-of-frame sampling scheme will differ from the routinely planned sampling in the collection of commercial population structure and biological information because it will be conducted specifically in the collection of incidental bycatch of sensitive species such as cetaceans, birds, reptiles and protected fish during pelagic trawl fisheries, in order to fulfil the EU obligations set out in the Habitats Directive (92/43/EEC), Regulation (EU) 2019/1241 of 20 June 2019 (repealing Regulation (EC) 812/2004) on the conservation of fishery resources and the protection of marine ecosystems.

Stratification: Observation of PETS in PTM will be only performed in the GSA17. According with the distribution of fleet, the monitoring will be stratified at a Regional and Macro-Regional level, considering 25% of the observation in Friuli-Veneto, 25% Emilia Romagna, 25% Marche, 25% Abruzzo. Observations will be temporarily stratified at a quarter level**.**

Sampling design and protocols

Sampling design description:
This out-of-frame sampling scheme will differ from the routinely planned sampling in the collection of commercial population structure and biological information because it will be conducted specifically in the collection of incidental bycatches of sensitive species
On the basis of the work carried out so far and the scientific work produced (Bonanomi et al., 2018; Pulcinella et al., 2019), the following experimental innovative activities will be performed: i) adjusting the stratification of direct observations, taking into account the Maritime Compartments where more bycatches of PET species have been recorded (e.g. Veneto, Emilia Romagna and Marche), ii) carrying out, where possible, cross-checks with interviews with fishers in order to better describe the actual fishing effort, iii) a set of at least 15 fishing trips will be monitored through underwater cameras and passive acoustics to more thoroughly study the interactions between dolphins and nets; iv) finally, the feasibility of studying the presence of dolphins in specific areas through photo-identification will be investigated, to check the possible repeated presence of dolphins in certain areas and to understand whether there really is some kind of habituation of dolphins to pelagic net fishing activities. To this end, at least 15 pilot fishing trips will be conducted in which this technique will be employed.

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

Regional coordination: Y

Link to sampling design documentation: The monitoring activity was designed according to the methodologies applied in the last 10 years of monitoring of PTM and described in the following documents:

- Pulcinella J., Bonanomi S., Colombelli A., Fortuna C.M., Moro F., Lucchetti A., Sala A. 2019. Bycatch of Loggerhead Turtle (Caretta caretta) in the Italian Adriatic Midwater Pair Trawl Fishery. Front. Mar. Sci. 6:365. https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2019.00365/full
- Bonanomi, S., Moro, F., Colombelli, A., Pulcinella, J., & Fortuna, C. M. (2022). A 14-year time series of marine megafauna bycatch in the Italian midwater pair trawl fishery. Scientific Data, 9(1), 51. https://www.nature.com/articles/s41597-022-01155-2

Design follows international recommendations: Y

Link to sampling protocol documentation:
As concerns PETS, The sampling protocols are based on the recommendations of GFCM (please see the GFCM

Manual on the monitoring of the bycatch of vulnerable species, https://www.fao.org/gfcm/publications/series/technical-paper/640/en/). Recording sheets were developed during the Pilot Study of PETs bycatch performed under the Italian NWP 2017-2019. Those documents are in line to the proposals provided by the EU regional grants MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, Regional grants - European Commission (europa.eu), and STREAM (see Deliverable 4.3 embedded into the Final Report, https://datacollection.jrc.ec.europa.eu/documents/d/dcf/med-and-bs_stream_mare-2016-22).

Protocol follows international recommendations:

Y

Sampling implementation

Recording of refusal rate: NA, the vessels are selected from a group that demonstrates cooperation, rather than being chosen at random. Each observation, whether conducted by sea observers or through logbooks, is pre-arranged with the vessel. Each year, when feasible, variability is ensured by selecting different vessels.

Monitoring of sampling progress within the sampling year: During the year, the sampling process is monitored by several meetings between the administration and the RTI (Raggruppamento Temporaneo d'Imprese) researchers, who routinely provide the state of the art. In addition, the scientific institutes involved in the various modules prepare several reports summarising the progress of the work, which are submitted to the administration throughout the year.

Data capture

Means of data capture:

The PSU is the fishing trip. On-board observers are responsible for monitoring, during all fishing operations of a day (the fishing trip), the presence of bycatch of PET species and species that indicate the presence of VMEs. The observation effort is calculated as the ratio between observed trips to total fleet trips (total effort) per métier and GSA.

Data capture documentation: To ensure data quality, observers are instructed to take photographs of the haul at the opening of the codend before the sorting process begins, as well as photographs of any rare species caught.

Quality checks documentation: Y

Data storage

National database: The Italian database FishDataNet is available at: Fishnet (cnr.it)

International database: Italian data collected within the DCF program are submitted by data call and stored in ICES and GFCM database

Quality checks and data validation documentation: Each observation, whether conducted by sea observers or through logbook, is first verified by experts before being digitized.

Sample storage

Storage description: NA, the sampling protocol does not include the collection of biological samples.

Sample analysis: NA

Data processing

Evaluation of data accuracy (bias and precision): All information collected is reported in a dedicated spreadsheet. Each file is read and checked for potential erroneous entries by using a series of dedicated routines. Editing and imputation methods: After validation, the data is uploaded in the "PTM - Out of Frame" database hosted at the Italian National Research Council (CNR) Institute of Marine Biological Resources and Biotechnologies (IRBIM) of Ancona, Italy. As a final step, the data is uploaded to the fishdatanet database.

Quality document associated to a dataset: Y

https://dcf-italia.cnr.it/rest/uploads/Controlli%20qualit%C3%A0%20variabili%20biologiche

Validation of the final dataset: Final dataset validation is done within the Fishdatanet database.

Sampling scheme identifier: TunaSamplingOnShore

MS : ITA

Region: Other regions

Sampling scheme identifier: TunaSamplingOnShore

Sampling scheme type: Commercial fishing trip

Observation type: SciObsOnShore

Time period of validity: from 2025 until 2027

Short description (max 100 words): 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, the collaboration is ongoing between France and Italy regarding data collection. This collaboration was concluded in 2024. Starting from 2025, Italy will collect IOTC data autonomously.
RWP LP implementation years 2025-2027

Description of the population

Population targeted:
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.

Population sampled:
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.
Major tropical tuna species targeted are yellowfin tuna (Thunnus albacares), bigeye tuna (Thunnus obesus), skipjack tuna (Katsuwonus pelamis) and albacore tuna (Thunnus alalunga).

Stratification:
Population is stratified according to four features:

- 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 its own organisation and 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 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., Mª.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

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

Design follows 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

Protocol follows 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

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, theses 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., Mª.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

Software:
Depetris, M., Duparc, A., Cauquil, P., Floc'h, 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

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., Mª.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

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

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

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

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, theses 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., Mª.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

Sampling scheme identifier: Observe Scheme

MS : ITA

Region: Other regions

Sampling scheme identifier: Observe Scheme

Sampling scheme type: Commercial fishing trip

Observation type: SciObsAtSea

Time period of validity: from 2025 until 2027

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, the collaboration is ongoing between France and Italy regarding data collection. This collaboration was concluded in 2024. Starting from 2025, Italy will collect IOTC data autonomously. Some non-EU countries, such as Seychelles and Mauritius, share the same protocol. Sampling is coordinated by IRD, IEO and AZTI.
RWP LP implementation years 2025-2027

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:

- 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
- 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

Design follows 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

Protocol follows 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:
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 metiers, 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

.

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.

Data storage

National database: 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.

International database: NA

Quality checks and data validation documentation: 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.

Sample storage

Storage description: NA

Sample analysis: NA

Data processing 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

Evaluation of data accuracy (bias and precision):
NA
Editing and imputation methods:

NA

Related to Table and Text Box 2.6

Sampling scheme identifier: MEDITS

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: MEDITS

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtsea

Time period of validity: from 2025 until 2027

Short description (max 100 words)

The MEDITS programme aims to conduct international co-ordinated bottom-trawl surveys in the Mediterranean. The MEDITS survey aims at providing data useful for describing species spatial distribution and occupation, quantifying changes in the fish populations, through indices of demography (e.g., size structure and biological traits, including mortality where relevant), thus contributing to the routine stock assessments and the development of management advice tools. The MEDITS survey aims at providing also data useful for describing species diversity at community level. One survey should be carried out every year, during spring and beginning of summer



RWP MED&BS implementation years 2025-2027

Description of the population

Population targeted:

The target population is all demersal species living on soft bottoms between 10 and 800 m depth. Detailed biological information on target species will be recorded according to the MEDITS handbook v.9, 2017). The MEDITS reference list of target species includes 82 demersal species, 32 of them are elasmobranchs (Annex VI of MEDITS handbook v.9, 2017). Within the MEDITS framework, sampling and analysis of diet by size of European hake will be also carried out. Exploratory sampling (not mandatory) will be also performed for the *Lophius* species.

Population sampled:

The populations will be sampled to cover at best their distributional range on the continental shelf and along the upper slope of the main exploited or potentially exploitable species, considering the administrative and technical

constraints of the project.
The stations will be distributed in each of the 7 GSA applying a random stratified sampling scheme using as strata the geographical combination of zones and depth. About 670 hauls are scheduled to be carried out during each annual survey.

Stratification:
Five (5) depth strata will be sampled (10-50, 51-100, 101-200, 201-500, and 501-800m) combined with geographical sector in order to balance the sampling allocation as specified in MEDITS handbook v.9, 2017 (for details on the allocation see SCI. MAR. 83S1, December 2019, 9-20. ISSN-L 0214-8358 https://doi.org/10.3989/scimar.04915.11X).

Sampling design and protocols

Sampling design description:
The sampling will follow a depth stratified sampling scheme with random drawing of the positions of the hauls within each stratum. The number of hauls in each stratum is proportional to the area of the depth strata. Stratification scheme by stratum area of each country involved in the Medits Project is reported in the Annex II of the Medits Handbook (MEDITS-Handbook Version n. 9, 2017). Except in the case of peculiar problems (damages noted in previous years, etc.), the hauls will be carried out in the same position from year to year. The decision to make a haul in a given place should not be influenced by the presence of fish shoals detected with the sounder or the sonar.

Is the sampling design compliant with the 4S principle?:
NA

Regional coordination:
Up to now 8 Mediterranean EU countries (Italy, France, Spain, Croatia, Greece, Malta, Slovenia, and Cyprus) and 2 Black Sea EU countries (Romania and Bulgaria), collaborated in the project and permanent links are maintained with relevant bodies (i.e. RCGMed&BS and GFCM). The International MEDITS Coordination Group regularly meets at least one time per year. Targets number of hauls, by area and participating countries, are reported in the Annex III of the Medits Handbook (MEDITS-Handbook Version n. 9, 2017).

Link to sampling design documentation:
MEDITS data will be processed and analysed in line with the data collected according to the common protocol (MEDITS-Handbook. Version n. 9, 2017) provided at link
https://dcf-italia.cnr.it/rest/uploads/Medits_Handbook_2017_version_9
Stomach contents of European hake by size will be processed and analyzed according to the Deliverable 4.1 of MARE/2016/22 STREAM project available at link:
https://www.fisheries-rcg.eu/finished-projects/

Design follows international recommendations:
Y

Link to sampling protocol documentation:
https://dcf-italia.cnr.it/rest/uploads/Medits_Handbook_2017_version_9

Protocol follows international recommendations:
Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
Concerning the stomach contents sampling, if the number of scheduled samples will not reach by the specimens collected during the MEDITS, further samples will be collected within the Sci Obs Shore Commerc Sel Stock and the Sci Obs Sea Commerc Sel Stock.

Data capture

Means of data capture:
Data on hauling positioning and operations will be collected through the on-board instrumentation (GPS and depth sounder). The temperature and salinity of sea water at bottom and the opening of the net in each haul will be monitored using sensors. Data will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software.

Data capture documentation:
MEDITS-Handbook. Version n. 9 (2017).
SCI. MAR. 83S1, December 2019, 9-20. ISSN-L 0214-8358 https://doi.org/10.3989/scimar.04915.11X

Quality checks documentation: Y
The tool RoME is used as a multiplatform library of functions developed in the R language to check the quality and consistency of MEDITS survey data, covering all MEDITS exchange tables (https://github.com/COISPA/RoME)

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)

International database:
Italian data collected within the DCF program are submitted by data call and stored in EU JRC and GFCM database. Furthermore, MEDITS data will be also transferred to the International database RDBFIS (https://www.fisheries-rcg.eu/rdbfis-integrated-fisheries-information-system-for-the-mediterranean-and-black-sea/)

Quality checks and data validation documentation:
In order to improve the quality of the MEDITS data and the consistency of the information collected the routine RoME (Bitetto et al., 2017;) has been developed for common use, which rationale has been incorporated in the checks made at JRC level during the data upload and the assessment working groups (STECF-EWG). RoME is publicly available at https://github.com/COISPA/RoME.

Sample storage

Storage description:
Soft organic tissues will be kept frozen or in cold storage. Hard structures (otoliths, etc.) will be kept in dry storage. Stomach contents will be kept in 70 % ethanol. All of these storage systems are securely kept.

Sample analysis:
MEDITS data will be analysed according to the MEDITS-Handbook. Version n. 9 (2017).
(https://dcf-italia.cnr.it/rest/uploads/Medits_Handbook_2017_version_9)
Stomach contents of hake by size will be analyzed according to the Deliverable 4.1 of MARE/2016/22 STREAM project.

Data processing

Evaluation of data accuracy (bias and precision):
Y

Editing and imputation methods:
Y

Quality document associated to a dataset:
https://www.coispa.it/it/homepage/

Validation of the final dataset:
Validation of the final dataset will be done within the national DataBase

Sampling scheme identifier: SOLEMON

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: SoleMon

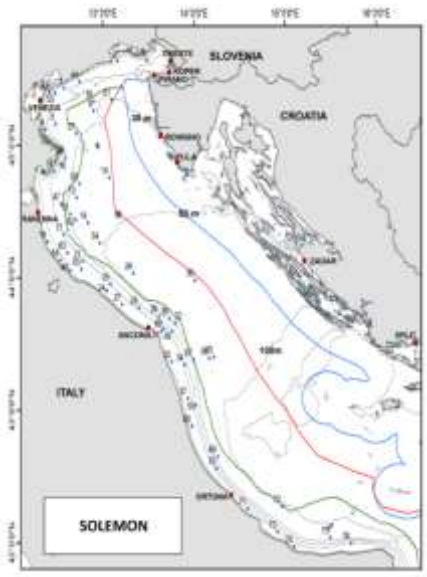
Sampling scheme type: Research surveys at sea

Observation type: SciObsAtsea

Time period of validity: from 2025 until 2027

Short description (max 100 words
The main survey objectives are:

- Assessing abundance and distribution in GSA17 of sole and other important demersal resources by surveys with "rapido" gears suitable to seize flatfish and other benthic animals.
- Pursuing studies on the ecosystem impact of the "rapido" trawl fishery.
- Finally, survey data will also contribute to the setting of the GES and targets for the Adriatic Sea in the framework of an ecosystem approach. Thus, matching the requirement of the implementation of the MFSD (DIRECTIVE 2008/56/EC).



RWP MED&BS implementation years 2025-2027

Description of the population

Population targeted:

The target population is common sole living on soft bottoms of the GSA 17 which, according to the genetic information, pertains to a single stock.

Population sampled:
Common sole and other benthic fish and shellfish of commercial interest, including rays and other selachians, will be sampled by a modified beam trawl named "rapido" trawl. Surveys will be carried out based on the protocol used since 2005 (SoleMon, 2019; Survey – Handbook Version 2019) and with the same gear. The gear is appositely planned to fish on different types of bottom. The research vessel will utilize two gears simultaneously in each haul.

Stratification:
Three (3) depth strata will be sampled (0-30, 31-50, and 51-100 m).

Sampling design and protocols

Sampling design description:
The hauls are planned according to a depth-stratified sampling scheme with random allocation of the positions of sampling stations within each stratum. The sampling effort is determined on the basis of a number of technical constraints (e.g. vessel availability). 60 hauls per year will be carried out by Italy in the period 2025-2027.

Is the sampling design compliant with the 4S principle?:
NA

Regional coordination:
The SoleMon programme is currently coordinated at the international level including Italy, Croatia and Slovenia and permanent links are maintained with relevant bodies (i.e. RCGMed&BS and GFCM). Since 2009 it has also been coordinated in the framework of the ICES Working Group on Beam Trawl Survey (WGBEAM). Targets number of hauls, by area and participating countries, are reported in the SoleMon Handbook (SOLEMON- Handbook_2019_Ver_4).

Link to sampling design documentation:
SOLEMON data will be processed and analysed in line with the data collected according to the common protocol (SOLEMON-Handbook_2019_Ver_4) provided at link
https://dcf-italia.cnr.it/rest/uploads/SOLEMON-Handbook_2019_Ver_4

Design follows international recommendations:
Y

Sampling implementation

Recording of refusal rate:
NA

Monitoring of sampling progress within the sampling year:
NA

Data capture

Means of data capture:
Data on hauling operations will be collected through the on-board instrumentation (GPS and depth sounder). Data will be collected both on board and at laboratories by scales, measuring board, stereomicroscope, and dedicated software.

Data capture documentation:
https://dcf-italia.cnr.it/rest/uploads/SOLEMON-Handbook_2019_Ver_4
Quality checks documentation:
https://dcf-italia.cnr.it/rest/uploads/SOLEMON-Handbook_2019_Ver_4

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)

International database:
Data will be shared in WGs, both at EU and Mediterranean level, and with all Adriatic Member States through common databases AtrIS/TruSt. Italian data collected within the DCF program are submitted by data call and stored in EU JRC and GFCM database. Common sole data will be uploaded in the DATRAS database (https://ices.dk/marine-data/data-portals/Pages/DATRAS.aspx).

Quality checks and data validation documentation:
Y. SOLEMON- Handbook_2019_Ver_4. TruSt 1.0 - TRawls sUrveys database sysTem tools are used to check the data quality and consistency

Sample storage

Storage description:
Soft organic tissues will be kept frozen or in cold storage. Hard structures (otoliths, etc.) are kept in dry storage. All of these storage systems are securely kept.

Sample analysis:
SOLEMON data will be processed and analysed in line with the data collected according to the common protocol (SOLEMON-Handbook_2019_Ver_4). The Handbook is provided at link:
https://dcf-italia.cnr.it/rest/uploads/SOLEMON-Handbook_2019_Ver_4

Data processing

Evaluation of data accuracy (bias and precision):
Y. TruSt 1.0 - TRawls sUrveys database sysTem

Editing and imputation methods:
Y. TruSt 1.0 - TRawls sUrveys database sysTem

Quality document associated to a dataset:
Y; http://www.kosmosambiente.it/scientifictrawlsurveys/

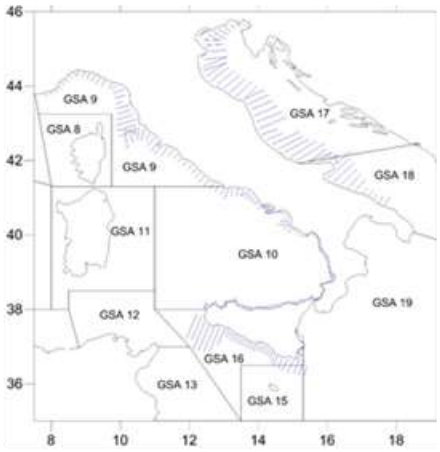
Validation of the final dataset:
Validation of the final dataset will be done within the national DataBase.

Sampling scheme identifier: MEDIAS

MS : ITA
Region: Mediterranean and Black Sea
Sampling scheme identifier: MEDIAS
Sampling scheme type: Research surveys at sea
Observation type: SciObsAtSea
Time period of validity: from 2025 until 2027

Short description (max 100 words

The MEditerranean International Acoustic Survey (MEDIAS) has been carried out annually since 2009 in order to assess the abundance and spatial distribution of small pelagic species (anchovy - *Engraulis encrasicolus*, and sardine - *Sardina pilchardus*), in the Mediterranean Sea by means of acoustic methodology. Demographic structure and species composition of the pelagic populations has been derived also from pelagic trawls in order to evaluate the abundance and biomass per age, size and sex.



RWP XXX implementation years

Description of the population

Population targeted:

The main target species are anchovy and sardine.

Population sampled:

Pelagic. This research will be based on a common protocol (MEDIAS-Handbook, 2023) and will follow a multidisciplinary approach. Synoptically with the acoustic data acquisition, carried out using a multifrequency scientific echo sounder system properly calibrated each year, net samplings on small pelagic fish should be performed by means of a pelagic trawl. The aim is to determine species and size composition of the pelagic biomass (fish sampling is required to collect representative samples of the population from a qualitative point of view and not a quantitative point of view, as is the case of demersal surveys). Length frequency distribution of all the caught fish species will be recorded. Age samples of *E. encrasicolus* and *S. pilchardus* will be collected and analysed.

Analysis of acoustic data will be conducted by means of dedicated software for echogram scrutinization. Biomass calculation will be performed at 38 kHz, while other frequencies will be used to discriminate fish echoes from noise and from non-target organisms. Further, for an ecosystem-based approach environmental monitoring will be performed, thus CTD oceanographic data (temperature, salinity, fluorescence and dissolved oxygen) will be recorded. Additional biotic data in pelagic ecosystem will be obtained by plankton sampling (acoustic and/or vertical hauls).

Stratification:

NA

Sampling design and protocols

Sampling design description:

This research will be based on a common protocol (MEDIAS-Handbook, 2023) and will follow a multidisciplinary approach. MEDIAS surveys will be conducted in June-September. Acoustic data will be systematically collected along transects perpendicular to the coastline, on the continental shelf from a depth of 15-30 m to ~ 200 m, where small pelagic fish are mainly distributed. They will be logged using a multi-frequency scientific echo sounder system properly calibrated each year, and processed with the resolution of one nautical mile, through the standard eco-integration method (Simmonds & McLennan, 2005). Synoptically with

the acoustic data acquisition, net samplings on small pelagic fish should be performed by means of a pelagic trawl.

Is the sampling design compliant with the 4S principle?:
NA

Regional coordination:
The MEDIAS acoustic surveys, performed in summer, should cover a series of areas in the Mediterranean EU MS (Spain, France, Croatia, Italy, Slovenia and Greece) with a standardised methodology and permanent links are maintained with relevant bodies (i.e. RCGMed&BS and GFCM).

Link to sampling design documentation:
MEDIAS data shall be collected, processed and analysed in line with the data collected according to the common protocol (MEDIAS-Handbook, 2023) provided at link:
http://www.medias-project.eu/medias/website/handbooks-menu.html
https://dcf-italia.cnr.it/rest/uploads/MEDIAS%20Handbook%202019

Compliance with international recommendations:
Y

Design follows international recommendations:
Y

Link to sampling protocol documentation:
http://www.medias-project.eu/medias/website/handbooks-menu.html

Protocol follows international recommendations:
Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
NA

Data capture

Means of data capture:
Biological data on anchovies and sardines will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software.

Data capture documentation:
Y
http://www.medias-project.eu/medias/website/handbooks-menu.html
Leonori et al., 2021 (see: https://doi.org/10.12681/mms.26001)

Quality checks documentation:
Y
http://www.medias-project.eu/medias/website/handbooks-menu.html

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)

International database:
Italian data collected within the DCF program are submitted by data call and stored in EU JRC and GFCM database

Quality checks and data validation documentation:
NA

Sample storage

Storage description:
Soft organic tissues will be kept frozen or in cold storage. Hard structures (otoliths, etc.) will be kept in dry storage. All of these storage systems are securely kept.

Sample analysis:
MEDIAS data shall be collected, processed and analysed in line with the data collected according to the common protocol (MEDIAS-Handbook, 2023). The Handbook is provided at link:
http://www.medias-project.eu/medias/website/handbooks-menu.html

Data processing

Evaluation of data accuracy (bias and precision):
Y

Editing and imputation methods:
Y
http://www.medias-project.eu/medias/website/handbooks-menu.html

Quality document associated to a dataset:
N

Validation of the final dataset:
Y
Validation of the final dataset will be done within the national DataBase.

Sampling scheme identifier: DRES Chamelea

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: DRES Chamelea

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtsea

Time period of validity: from 2025 until 2027

Short description (max 100 words
Scientific surveys will be conducted to assess the spatial distribution and abundance (density and biomass) of the species. Information from surveys combined with those from commercial data (landings) are necessary for stock assessment and to define the reference points of management plans. The main biometric measurements (length and weight) will be recorded for the mentioned species.

Description of the population

Population targeted:
The target populations are *Chamelea gallina*, living in GSA 17 and 18.

.

Population sampled:
Surveys for *C. gallina* will be carried out in the 13 maritime districts (Compartimenti) in the Adriatic Sea (GSA 17 and GSA18).

Stratification:
Each Compartment will be surveyed along regularly spaced transects perpendicular to the coast (around 2 miles each other, according to the extent of each Compartment).

Sampling design and protocols

Sampling design description:
Within each transect line, sampling stations will be settled at fixed distances/depths (0.25 nautical miles for *C. gallina*;) until the presence of clams will be detected (usually at a distance corresponding to 12-14 m of depth for C. gallina).

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

Regional coordination:
N

Link to sampling design documentation:
DRES data shall be processed and analysed in line with the data collected according to the protocol Manuale per il campionamento DRES -Dredgers Mollusc Surveys Versione 2.2 provided at link
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA
Design follows international recommendations:
Y

Link to sampling protocol documentation:
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA

Protocol follows international recommendations:
Y

Sampling implementation

Recording of refusal rate: NA
Monitoring of sampling progress within the sampling year: NA

Data capture

Means of data capture:
Data on hauling operations will be collected through the on-board instrumentation (GPS and depth sounder). Data will be collected both on board and at laboratories by scales, measuring board, and dedicated software.

Data capture documentation:
NA

Quality checks documentation: Y

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)
International database:
N

Quality checks and data validation documentation:
NA

Sample storage

Storage description:
NA
Sample analysis:
DRES data shall be processed and analysed in line with the data collected according to the protocol Manuale per il campionamento DRES -Dredgers Mollusc Surveys Versione 2.2, provided at link:
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA

Data processing

Evaluation of data accuracy (bias and precision): Y

Editing and imputation methods:Y

Quality document associated to a dataset:
https://www.coispa.it/index.php?option=com_content&view=article&id=25&Itemid=149&lang=en

Validation of the final dataset:
Validation of the final dataset will be done within the national DataBase.

Sampling scheme identifier: DRES Ensis

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: DRES Ensis

Sampling scheme type: Research surveys at sea

Observation type: SciObsAtsea

Time period of validity: from 2025 until 2027

Short description (max 100 words
Scientific surveys will be conducted to assess the spatial distribution and abundance (density and biomass) of the species. Information from surveys combined with those from commercial data (landings) are necessary for stock assessment and to define the reference points of management plans. The main biometric measurements (length and weight) will be recorded for the mentioned species.

Description of the population

Population targeted:
The target populations are *Ensis minor* living in GSA 9 and 10.

Population sampled:
surveys for E. minor will be conducted in 3 maritime districts (Compartimenti) (Roma, Gaeta, Napoli,; GSA 9 and GSA 10).
Stratification:
Each Compartimento will be surveyed along regularly spaced transect lines perpendicular to the coast (around 2 mile each other, according to the length of each Compartimento).

Sampling design and protocols

Sampling design description:
Along each transect, sampling stations will be located at increasing bathymetries from 1 to 5 m (1, 2.5, 5 m) until the presence of clams will be detected (usually at a depth corresponding to d 6-8 m

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

Regional coordination:
N

Link to sampling design documentation:
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA

Design follows international recommendations:
Y

Link to sampling protocol documentation:
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA

Protocol follows international recommendations:
NA

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year:
NA

Data capture

Means of data capture:
Data on hauling operations will be collected through the on-board instrumentation (GPS and depth sounder). Data will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software.

Data capture documentation:
NA

Quality checks documentation: NA

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)

International database:
N

Quality checks and data validation documentation:
NA

Sample storage

Storage description:
NA

Sample analysis:
DRES data shall be processed and analysed in line with the data collected according to the protocol Manuale per il campionamento DRES -Dredgers Mollusc Surveys Versione 2.2, provided at link:
https://dcf-italia.cnr.it/rest/uploads//Protocollo%20DRES%202.2_PLNRDA

Data processing

Evaluation of data accuracy (bias and precision): Y

Editing and imputation methods: Y

Quality document associated to a dataset:

Validation of the final dataset:

Related to Table and Text Box 2.3

Sampling scheme identifier: Diadromous (commercial)

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: SciObsOnShore*Diadromous (commercial)

Sampling scheme type: Commercial by category

Observation type: SciObsOnShore

Time period of validity: from 2025 until 2027

Short description (max 100 words): Sampling scheme for the collection of catch data and biological variables of eel in the Italian Eel management units (9 EMUs) -as defined in accordance with Council Regulation (EC) No 1100/2007 – where eel commercial fisheries occur (only in freshwaters and transitional waters, marine eel fisheries being definitively closed by the Decree of the Ministry of Agriculture and Forestry Police (MIPAAF) n. 403 of July 25th, 2019).

Description of the population

Population targeted: Data collection for catch data and biological variables targets eel sub-populations (e.g., eel local stocks) in the Italian Eel management units (9 EMUs) as defined in accordance with Council Regulation (EC) No 1100/2007. Eel commercial inland fisheries occur only in freshwaters and transitional waters of the 9 IT EMUs, marine eel fisheries being definitively closed by the Decree of the Ministry of Agriculture and Forestry Police (MIPAAF) n. 403 of July 25th, 2019.
Sampling will target all the sites (water bodies) where catches in the 9 EMUs occurs, while sampling for biological variables will take place in the site (water body) where the most significant share of catches in the EMU occurs.

Population sampled: Data collection will target two life stages of the eel local stocks, the yellow eel and the silver eel. The recruiting stage (glass eel) will not be sampled because no central glass eel fisheries exist, recruits being the target of scientific surveys for diadromous eel.

Stratification: Data collected will be stratified in 9 geographical lots, according to the EMU. Each lot is further stratified according to habitat type, taking into account 4 strata of eel habitat typologies identified in the 9

EMUs, where commercial fisheries occur: RIV (river), LAK (Lake), LGN (lagoon), MLG (managed lagoon).

Sampling design and protocols

Sampling design description: PSUs in the 9 EMUs are identified as all the sites (water bodies) where catches in the EMU occurs. Identification of the PSUs relies on yearly reporting by Regional Administrations of official catch data (as Regional EMUs under Council Regulation (EC) No 1100/2007). SSUs are the sites where sampling for biological variables will take place, and is identified as the site (water body) where the most significant share of catches in the EMU occurs. Identification of the SSUs also relies on yearly reporting by Regional Administrations of official catch data (as Regional EMUs under Council Regulation (EC) No 1100/2007).

Is the sampling design compliant with the 4S principle?: NA

For eel sampling of commercial catches, being widely recognised at the international level that for eel local stocks there is the need to guarantee monitoring along time of the structure of selected specific local stocks (ICES; 2019, 2020a, 2020b).

Regional coordination: NA

Link to sampling design documentation:

Vehanen, T.; Piria, M.; Kubečka, J.; Skov, C.; Kelly, F.; Pokki, H.; Eskelinen, P.; Rahikainen, M.; Keskinen, T.; Artell, J.; Romakkaniemi, A.; Suić, J.; Adámek, Z.; Heimlich, R.; Chalupa, P.; Ženíšková, H.; Lyach, R.; Berg, S.; Birnie-Gauvin, K.; Jepsen, N.; Koed, A.; Pedersen, M. I.; Rasmussen, G.; Gargan, P.,Roche, W. & Arlinghaus, R. 2020. Data collection systems and methodologies for the inland fisheries of Europe. FAO Fisheries and Aquaculture Technical Paper No. 649. Budapest, FAO. https://doi.org/10.4060/ca7993en

Wilson, K., and Veneranta, L. (Eds). 2019. Data-limited diadromous species – review of European status. ICES Cooperative Research Report No. 348. 273 pp. http://doi.org/10.17895/ices.pub.5253

ICES. 2021. Third Workshop on Designing an Eel Data Call (WKEELDATA3). ICES Scientific Reports. 3:50. 19 pp. https://doi.org/10.17895/ices.pub.8140

ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

ICES. 2020. Steering Committee of the Regional Fisheries Database (SCRDB; outputs from 2019 meeting).

ICES Scientific Reports. 2:24. 57 pp. http://doi.org/10.17895/ices.pub.5992

ICES. 2019. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 1:50. 177 pp. http://doi.org/10.17895/ices.pub.5545

ICES. 2019. The Second Workshop on Designing an Eel Data Call 2 (WKEELDATA2). ICES Scientific Reports. 1:41. 19 pp. http://doi.org/10.17895/ices.pub.4977

ICES. 2018. Report of the Workshop on Tools for Eel (WKTEEL), 2–6 July 2018, Rennes, France. ICES CM 2018/ACOM:49. 23 pp.

ICES. 2018. Report of the Working Group on Data Poor Diadromous Fish (WGDAM), 12–16 March 2018, ICES HQ, Copenhagen, Denmark. ICES CM 2018/EPDSG:20. 12 pp. https://doi.org/10.17895/ices.pub.8089

ICES. 2017. Report of the Workshop on Designing an Eel Data Call (WKEELDATA), 28 February–2 March 2017, Rennes, France. ICES CM 2017/SGIEOM:30. 38 pp.

RCG NA NS&EA RCG Baltic 2020. Regional Coordination Group North Atlantic, North Sea & Eastern Arctic and Regional Coordination Group Baltic. 2020. Part I Report, 110 pgs. Part II Decisions and Recommendations, 7 pgs. Part III, Intersessional Subgroup (ISSG) 2019-2020 Reports, 154 pgs. (https://datacollection.jrc.ec.europa.eu/docs/rcg)

Design follows international recommendations: *Y*

Link to sampling protocol documentation:
ICES. 2021. Third Workshop on Designing an Eel Data Call (WKEELDATA3). ICES Scientific Reports. 3:50. 19 pp. https://doi.org/10.17895/ices.pub.8140

Vehanen, T.; Piria, M.; Kubečka, J.; Skov, C.; Kelly, F.; Pokki, H.; Eskelinen, P.; Rahikainen, M.; Keskinen, T.; Artell, J.; Romakkaniemi, A.; Suić, J.; Adámek, Z.; Heimlich, R.; Chalupa, P.; Ženíšková, H.; Lyach, R.; Berg, S.; Birnie-Gauvin, K.; Jepsen, N.; Koed, A.; Pedersen, M. I.; Rasmussen, G.; Gargan, P.,Roche, W. & Arlinghaus, R. 2020. Data collection systems and methodologies for the inland fisheries of Europe. FAO Fisheries and Aquaculture Technical Paper No. 649. Budapest, FAO. https://doi.org/10.4060/ca7993en

ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

ICES. 2019. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 1:50. 177 pp. http://doi.org/10.17895/ices.pub.5545

ICES. 2019. The Second Workshop on Designing an Eel Data Call 2 (WKEELDATA2). ICES Scientific Reports. 1:41. 19 pp. http://doi.org/10.17895/ices.pub.4977

Carbonara, P., & Follesa, M. C. (2019). Handbook on fish age determination: a Mediterranean experience. General Fisheries Commission for the Mediterranean. Studies and Reviews, (98), I- 179.

ICES. 2018. Report of the Workshop on Tools for Eel (WKTEEL), 2–6 July 2018, Rennes, France. ICES CM 2018/ACOM:49. 23 pp.

ICES. 2017. Report of the Workshop on Designing an Eel Data Call (WKEELDATA), 28 February–2 March 2017, Rennes, France. ICES CM 2017/SGIEOM:30. 38 pp
Protocol follows international recommendations: *Y*

Sampling implementation

Recording of refusal rate: *NA*

Monitoring of sampling progress within the sampling year: Sampling progress for each life stage in each EMU will be monitored taking into account catch recording by Regional Administrations, eventually selecting a second site in the same EMU for sampling if any local constraint hampers the sampling at the selected site

Data capture

Means of data capture: Data capture for eel commercial fisheries based on direct and detailed interviews by EMUs Administration and under central coordination will allow to obtain official catch data for each EMU and

relative strata. Based on this data, the site for sampling for biological variables will be identified, and biological samples will be obtained for each EMU every year, consisting of 15 yellow eels and 15 silver eels, taking a random batch of eels cumulated catches of the day or the week.

Eel life stage (yellow or silver eel) will be visually classified in the field based on the colour of the livery. Silver eels are identified using three criteria: the colour of the back and belly, presence of a well-marked lateral line (Acou et al., 2005), and eye diameter according to Pankhurst (1982).

"Weight" will be recorded every year for each EMU sample using precision scales and length measured with graduated boards.

Data capture for "Age" and "Sex" will be carried out every three years for each EMU sample.Age estimation is carried out based on otolith reading following agreed standardized protocols (Capoccioni et al. 2015; Capoccioni et al., Carbonara, P., & Follesa, M. C., 2019, ICES, 2009, 2011, 2020)

Sex is assessed macroscopically whenever possible or by histological examination of gonads (Colombo and Grandi, 1996) when determination is uncertain.

Eventually, maturation stage is determined by combining gonad development assessment, Pankhurst's (1982) ocular index (OI), which reflects changes in eye diameter during metamorphosis to the silver stage (Acou et al., 2005) and Durif's silvering index (Durif et al., 2005).

Data capture documentation:

Acou A., Boury P., Laffaille P., Crivelli A.J., Feunteun E. 2005. Towards a standardized characterization of the potentially migrating silver European eel (Anguilla anguilla L.). Arch. Hydrobiol., 164, 237−255.

Capoccioni, F., Leone, C., & Ciccotti E., 2015. In Handbook for fish age determination theory and practice in Italian Data Collection Framework Context. Report Del Progetto Di Ricerca:
Costituzione Di Gruppi Di Lavoro Finalizzati All'ottimizzazione Delle Metodologie d'indagine
Campionarie Per La Valutazione Dello Stato Delle Risorse (Ministero Delle Politiche Agricole, Alimentari E Forestali – Direzione Pesca E Acquacoltura) - gruppo di lavoro sulla lettura dell'età dei pesci. SOCIETÀ ITALIANA DI BIOLOGIA MARINA: 210 Pp
Carbonara, P., & Follesa, M. C. (2019). Handbook on fish age determination: a Mediterranean experience. General Fisheries Commission for the Mediterranean. Studies and Reviews, (98), I- 179.ICES. 2009. Workshop on Age Reading of European and American Eel (WKAREA), 20- 24 April 2009, Bordeaux, France. ICES CM 2009\ACOM: 48. 66 pp.

ICES. 2013. Report of the ICES Working Group on Recreational Fisheries Surveys 2013 (WGRFS), 22-26 April 2013, Esporles, Spain. ICES CM 2013/ACOM:23. 49 pp. - http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGRFS%202013/WGRFS%20Report%202013.pdf

Colombo G. and Grandi G. 1996. Histological study of the development and sex differentiation of the gonad in the European eel. J. Fish Biol., 48, 493−512.

Durif C., Dufour S. and Elie P. 2005. The silvering process of Anguilla anguilla: a new classification from the yellow resident to the silver migration stage. J. Fish Biol., 66, 1025−1043.ICES. 2011. Report of the Workshop on Age Reading of European and American Eel (WKAREA2), 22-24 March 2011, Bordeaux, France. ICES CM 2011/ACOM:43. 35 pp.

ICES. 2020. Third Workshop on Age Reading of European and American Eel (WKAREA3) ICES Scientific Reports. 2:84. 34 pp. http://doi.org/10.17895/ices.pub.7483

ICES. 2011. Report of the Workshop on Age Reading of European and American Eel (WKAREA2), 22-24 March 2011, Bordeaux, France. ICES CM 2011/ACOM:43. 35 pp.

Quality checks documentation: N

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici Fishnet (cnr.it)

International database:
ICES database EEL
https://mercure.eptb-vilaine.fr/shiny_dv/ GFCM DCRF Task VII-6 online platform

Quality checks and data validation documentation:
FishDataNet Portale Nazionale Dati Alieutici https://dcf-italia.cnr.it/web/
ICES database EEL
https://mercure.eptb-vilaine.fr/shiny_dv/ GFCM DCRF Task VII-6 online platform

Sample storage

Storage description: All data (catches, individual biometrical parameters, age and sex individual data, photos etc.) are archived electronically in Personal Computers, with back-ups on internal servers. For biological variables samples, otoliths used for age estimations and histological preparations for sex determination are stored in laboratory archives, properly labelled in order to allocate them to corresponding year/EMU sample/date of sampling/individual. Storage time is indefinite and maintenance guaranteed, all samples being stored as long as possible in case of the need of checks, under the Responsibility of the Scientific Unit of the tasks

Sample analysis:

Data processing

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

Editing and imputation methods: *N*

Quality document associated to a dataset: *N*

Validation of the final dataset: Data collection, sampling scheme, quality check of final datasets to be provided to national end users and international end-users will be carried out with relevant partners at national levels (EMUs Administrations, in coordination with work for Regulation 1100/2007 in ITALY, MIPAAF) and international levels (EIFAAC/ICES/GFCM WGEEL, GFCM Secretariat).

Sampling scheme identifier: SciObs water body*Diadromous (scientific)

MS : ITA

Region: Mediterranean and Black Seas

Sampling scheme identifier: ***SciObs water body*Diadromous (scientific)***

Sampling scheme type: *Diadromous (scientific)*

Observation type: *SciObs water body*

Time period of validity: from 2025 until 2027

Short description (max 100 words):): From 2025 onwards, the work plan includes survey activities in 5 EMUs per year. The surveys will be carried out in 2 different environments (lagoon and river) identified in 4 different EMUs, 2 facing the Adriatic Sea (Emilia Romagna and Puglia) and 2 facing the Tyrrhenian Sea (Lazio and Tuscany). An additional survey will be carried out in 3 of the 5 remaining EMUs, with priority being given to the insular EMU (Sardinia); the additional surveys will be identified in an important aquatic environment for monitoring different growth stages of eels. At the end of the 3-year NWP, a total of 7 EMUs will be monitored (4 EMUs will be monitored each year and 3 EMUs will be monitored only once during the NWP period).

Description of the population

Population targeted: Eel research surveys targets eel subpopulations (e.g., eel local stocks) in relevant habitats targets in the Italian Eel management units (7 EMUs) as defined in accordance with Council Regulation (EC) No 1100/2007, in order to collect data on recruitment, standing stock and escapement in a representative water body of each EMU. The selection of the relevant site (PSU) for the monitoring of all the three eel life stages are defined in agreement with Regional Administrations involved in Eel Management Plans *under Council* Regulation (EC) No 1100/2007

Population sampled: Data collection by scientific surveys targets all eel life stages, i.e., glass eel (for recruitment), yellow eel (for standing stock) and silver eel (for escapement).

Stratification: Data collected will be stratified in 5 geographical lots, according to the EMU. Each lot is further identified by name of the selected water body and its habitat type, that can be RIV (river),LGN (lagoon)) or MLG (managed lagoons). Water bodies of other habitat typologies, e.g. LAK (lakes)) not being identifiable as relevant water bodies for the monitoring of eel local stocks and their recruitment and escapement under natural conditions.

Sampling design and protocols

Sampling design description: PSU in the 7EMUs is identified as the site (water body) in the EMU most significant for the monitoring of recruitment, standing stock and escapement, based on its environmental conditions (connection to the sea, presence of eel) and management setting (no restocking, no impassable obstacles etc.).
Identification of the PSU is made in agreement with Regional Administrations (as Regional EMPs under Council Regulation (EC) No 1100/2007).
Given the complexity of operating in 7 different EMUs for sampling campaigns monthly, sampling in 5 EMUs per year (starting in 2025) will be carried out.

Recruitment (glass eel stage)

In the selected water body (habitat type: lagoon or river, depending on the EMU) for 6 days/month installation of 1 fyke-net along the tidal channel (lagoon) or riverbank, during the migration period (3 months: October-December), and the registration of presences (N and weight) for each night. CPUE (number of recruits/gear/week) will be calculated for the whole 3-months sampling.

Standing stock (yellow eel stage)

In the selected water body (habitat type: lagoon or river, depending on the EMU) installation of 1 enclosure net system and 16 fyke nets to enclose an area of 1 ha) (if the body water selected is a lagoon) or a fyke-net chain (2 rows of 10 fyke nets along the riverbank, if the water body selected is a river). The survey foresees the fishery for 6 days/month during trophic movements period (April- October), and the daily registration of catches, (N or Weight, depending on the amount of capture) each day. CPUE (weight or number of individuals/gear/week) will be calculated for the whole sampling period.

Escapement (silver eel stage):

In each EMU, in the selected water body (habitat type: lagoon or river, depending on the EMU) installation of a set of fyke- nets (in front of the tidal channel if the water body selected is a lagoon, a fyke-net chain (2 rows of 10 fyke nets along the river bank, if the water body selected is a river), if the water body selected is a river) for 6days/month for 3 months, during the October-December period, and the daily registration of catches, (N or Weight). CPUE (weight or number of individuals/gear/week) will be calculated for the whole sampling period.

Is the sampling design compliant with the 4S principle?: NA

Regional coordination: *NA*

For scientific monitoring of eel recruitment, standing stock and escapement in transitional and inland waters, it is widely recognized at the international level that there is the need to guarantee monitoring along time of recruitment, standing stock and escapement in relevant sites (ICES; 2019, 2020a, 2020b, 2020c), at the moment focusing on the best methodology to be implemented. Given the heterogeneity of eel habitats in terms of their typology and related environmental features, standardized protocols at the moment are not agreed internationally, not even at the Regional level, but are based on the best available scientific literature (see references below). In this respect, the definitive implementation of the monitoring scheme and of collected variables and data processing in Italian EMUs will take place in the first months of 2025, within a framework of coordination with Regional Administrations occurring under the Eel Management Plans under Council Regulation (EC) No 1100/2007. Final methodological challenges will also be finally worked out based on results of the Pilot phase for WP2 Task 2.3b (I: 2017-2019, II: 2020-2021).

Link to sampling design documentation:

ICES. 2021. Third Workshop on Designing an Eel Data Call (WKEELDATA3). ICES Scientific Reports. 3:50. 19 pp. https://doi.org/10.17895/ices.pub.8140

ICES. 2020a. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

ICES. 2020b. Steering Committee of the Regional Fisheries Database (SCRDB; outputs from 2019 meeting). ICES Scientific Reports. 2:24. 57 pp. http://doi.org/10.17895/ices.pub.5992

ICES. 2020c. Workshop on the temporal migration patterns of European eel (WKEELMIGRATION). ICES Scientific Reports. 2: 25. 109 pp. http://doi.org/10.17895/ices.pub.5993

Design follows international recommendations: *N*

Link to sampling protocol documentation:

Protocol follows international recommendations: *Y*

Sampling implementation

Recording of refusal rate: *NA*

Monitoring of sampling progress within the sampling year: Sampling progress for each life stage and indicator (glass eel for recruitment, yellow eel for standing stock, silver eel for escapement) will be monitored taking into account results of sampling in a daily basis, eventually selecting a second site in the same EMU for a replicated sampling if any local constraint (hydrological, meteorological, or any other) hampers the sampling at the selected site.

Data capture

Means of data capture: Data capture for eel research surveys in relevant habitats to collect data on recruitment, standing stock and escapement will be carried out in the 5 EMUs each year. The selection of the relevant site for the monitoring of all three eel life stages will be agreed with Regional Administrations involved in Eel Management Plans under Council Regulation (EC) No 1100/2007, possibly coincidence with the site for biological sampling of catches to complete information for specific eel local stocks in selected sites.
Eels caught by fyke nets in the survey will be counted and weighed. These data will be used to compute CPUE during the monitoring period for the different life stages of eels.

Data capture documentation: *NA*

Quality checks documentation: *N*

Data storage

National database: *The Italian data base FishDataNet is available at:* Fishnet (cnr.it)

International database: *ICES database EEL : https://mercure.eptb-vilaine.fr/shiny_dv/; https://mercure.eptb-vilaine.fr/shiny_dv/*

Quality checks and data validation documentation:
Quality checks for data storage are provided by the managers of national and international databases, at the relative links
FishDataNet Portale Nazionale Dati Alieutici https://dcf-italia.cnr.it/web/
ICES database EEL
https://mercure.eptb-vilaine.fr/shiny_dv/

Sample storage

Storage description: *NA*

Sample analysis:

Data processing

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

Editing and imputation methods: *N*

Quality document associated to a dataset: *N*

Validation of the final dataset: Data collection, sampling scheme, quality check of final datasets to be provided to national end users and international end-users will be carried out with relevant partners at national levels (EMUs Administrations, in coordination with work for Regulation 1100/2007 in ITALY, MASAF) and international levels (EIFAAC/ICES/GFCM WGEEL).

Sampling scheme identifier: SciObsOnShore*Diadromous (recreational)

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: SciObsOnShore*Diadromous (recreational)

Sampling scheme type: recreational (off site surveys)

Observation type: SciObsOnShore

Time period of validity: from 2025 until 2027

Short description (max 100 words): *S*ampling scheme for the collection of catch data for recreational eel fisheries in inland and transitional waters of Italian Eel management units (9 EMUs) as defined in accordance with Council Regulation (EC) No 1100/2007.

In Italy, recreational fisheries for eel species is currentlyclosed according to the "*Eel Decree*" (Prot. N.0111260 of 06/03/2024). Nonetheless, no *a priori* information is available regarding a possible re-opening of these fishery activities.

Description of the population

Population targeted: Data collection for eel recreational fisheries targets eel sub-populations (e.g. eel local stocks) in the Italian Eel management units (9 EMUs) as defined in accordance with Council Regulation (EC) No 1100/2007. Eel recreational fisheries occur only in freshwaters and transitional waters of the 9 IT EMUs, recreational eel fisheries being closed since 2010 in the rest of the National water bodies (by Regional decrees following the implantation of the Italian Eel Management Plan under Regulation 1100/2007) and marine eel recreational fisheries being non-existent

Population sampled: Data collection will target catch data for the two eel life stages targeted by recreational fisheries in transitional and freshwaters in the 9 EMUs, any recreational fishery for glass eel being forbidden.

Stratification: Data collected will be stratified in 9 geographical lots, according to the EMU. Each lot is further stratified according to habitat type, taking into account 3 strata of eel habitat typologies identified in the 9 EMUs, where recreational fisheries occur: RIV (river), LAK (Lake), LGN (Lagoon).

Sampling design and protocols

Sampling design description: PSU in the 9 EMUs are identified as all the sites (water body) where recreational eel fisheries in the EMU occurs.

Catch data will be collected by off-sites surveys by Scientific Observers that will carry out interviews to samples of anglers extracted from the whole licensed anglers universe, based on information provided by EMUs Administrations and their internal system of licensing and catch recording (logbooks, on-line declarations, any other). An expansion of data will be performed to evaluate the whole catch for each eel life stage (yellow eel, silver eel) at the EMU and strata level. The sampling design already in place, implemented in previous years, will be quality checked and implemented in cooperation with the EMUs Administrations. No biological samplings are foreseen, because eel recreational fisheries are too heterogeneous and scattered in inland waters, as highlighted by the Joint ICES/GFCM/EIFAAC WGEEL in 2020 and 2021 (ICES, 2020, 2021) and sampling for biological variables would not be representative of eel local stocks and would not add useful information.

PSU are not foreseen.

Is the sampling design compliant with the 4S principle?: NA
Catch recording will be based on off-site interviews by observers, at the moment identified as the best available methodology. As said above, eel recreational fisheries are too heterogeneous and scattered in inland waters as indicated by the Joint ICES/GFCM/EIFAAC WGEEL in 2020 and 2021 (ICES, 2020, 2021), and methodology for eel recreational fisheries is not standardized yet

Regional coordination: NA

Link to sampling design documentation:

ICES. 2020. Working Group on Recreational Fisheries Surveys (WGRFS; outputs from 2019 meeting). ICES Scientific Reports. 2:1. 78 pp. http://doi.org/10.17895/ices.pub.5744

Vehanen, T.; Piria, M.; Kubečka, J.; Skov, C.; Kelly, F.; Pokki, H.; Eskelinen, P.; Rahikainen, M.; Keskinen, T.; Artell, J.; Romakkaniemi, A.; Suić, J.; Adámek, Z.; Heimlich, R.; Chalupa, P.; Ženíšková, H.; Lyach, R.; Berg, S.; Birnie-Gauvin, K.; Jepsen, N.; Koed, A.; Pedersen, M. I.; Rasmussen, G.; Gargan, P.,Roche, W. & Arlinghaus, R. 2020. Data collection systems and methodologies for the inland fisheries of Europe. FAO Fisheries and Aquaculture Technical Paper No. 649. Budapest, FAO. https://doi.org/10.4060/ca7993en

ICES. 2021. Third Workshop on Designing an Eel Data Call (WKEELDATA3). ICES Scientific Reports. 3:50. 19 pp. https://doi.org/10.17895/ices.pub.8140

ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

ICES. 2020. Steering Committee of the Regional Fisheries Database (SCRDB; outputs from 2019 meeting).

ICES Scientific Reports. 2:24. 57 pp. http://doi.org/10.17895/ices.pub.5992

ICES. 2019. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 1:50. 177 pp. http://doi.org/10.17895/ices.pub.5545

ICES. 2019. The Second Workshop on Designing an Eel Data Call 2 (WKEELDATA2). ICES Scientific Reports. 1:41. 19 pp. http://doi.org/10.17895/ices.pub.4977

ICES. 2018. Report of the Workshop on Tools for Eel (WKTEEL), 2–6 July 2018, Rennes, France. ICES CM 2018/ACOM:49. 23 pp

ICES. 2017. Report of the Workshop on Designing an Eel Data Call (WKEELDATA), 28 February–2 March 2017, Rennes, France. ICES CM 2017/SGIEOM:30. 38 pp.

RCG NA NS&EA RCG Baltic 2020. Regional Coordination Group North Atlantic, North Sea & Eastern Arctic and Regional Coordination Group Baltic. 2020. Part I Report, 110 pgs. Part II Decisions and Recommendations, 7 pgs. Part III, Intersessional Subgroup (ISSG) 2019-2020 Reports, 154 pgs. (https://datacollection.jrc.ec.europa.eu/docs/rcg) Wilson, K., and Veneranta, L. (Eds). 2019. Data-limited diadromous species – review of European status. ICES Cooperative Research Report No. 348. 273 pp. http://doi.org/10.17895/ices.pub.5253

Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the sampling design exists, Member State shall provide some details in the textbox.

Design follows international recommendations: N

Link to sampling protocol documentation:
ICES. 2020. Working Group on Recreational Fisheries Surveys (WGRFS; outputs from 2019 meeting). ICES Scientific Reports. 2:1. 78 pp. http://doi.org/10.17895/ices.pub.5744

Vehanen, T.; Piria, M.; Kubečka, J.; Skov, C.; Kelly, F.; Pokki, H.; Eskelinen, P.; Rahikainen, M.; Keskinen, T.; Artell, J.; Romakkaniemi, A.; Suić, J.; Adámek, Z.; Heimlich, R.; Chalupa, P.; Ženíšková, H.; Lyach, R.; Berg, S.; Birnie-Gauvin, K.; Jepsen, N.; Koed, A.; Pedersen, M. I.; Rasmussen, G.; Gargan, P.,Roche, W. & Arlinghaus, R. 2020. Data collection systems and methodologies for the inland fisheries of Europe. FAO Fisheries and Aquaculture Technical Paper No. 649. Budapest, FAO. https://doi.org/10.4060/ca7993en

ICES. 2021. Third Workshop on Designing an Eel Data Call (WKEELDATA3). ICES Scientific Reports. 3:50. 19 pp. https://doi.org/10.17895/ices.pub.8140

ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. http://doi.org/10.17895/ices.pub.5982

ICES. 2019. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 1:50. 177 pp. http://doi.org/10.17895/ices.pub.5545
ICES. 2019. The Second Workshop on Designing an Eel Data Call 2 (WKEELDATA2). ICES Scientific Reports. 1:41. 19 pp. http://doi.org/10.17895/ices.pub.4977

ICES. 2018. Report of the Workshop on Tools for Eel (WKTEEL), 2–6 July 2018, Rennes, France. ICES CM 2018/ACOM:49. 23 pp.

ICES. 2017. Report of the Workshop on Designing an Eel Data Call (WKEELDATA), 28 February–2 March 2017, Rennes, France. ICES CM 2017/SGIEOM:30. 38 pp

Protocol follows international recommendations: Y

Sampling implementation

Recording of refusal rate: NA

Monitoring of sampling progress within the sampling year: Catch recording for eel recreational fisheries will be monitored and checked by means of interactions with the EMUs Administrations, and eventually adjusted by widening the sample of anglers for interviews

Data capture

Means of data capture: Data capture for eel recreational catches recording will be based on off-site interviews to a sample of fishermen by observers, extracted on a statistical basis for each habitat typology in each EMU. The methodology (questionnaires, interviews, catch declarations) will be agreed in each EMU with the EMU Administration, depending on the system already in place at the local level, and further standardized for all EMUs. Data capture foresees catch (yellow and silver eel separated), type of gear, number of gears used daily, and number of fishing days per year.

Data capture documentation:
ICES. 2020. Working Group on Recreational Fisheries Surveys (WGRFS; outputs from 2019 meeting).
ICES Scientific Reports. 2:1. 78 pp. http://doi.org/10.17895/ices.pub.5744
Vehanen, T.; Piria, M.; Kubečka, J.; Skov, C.; Kelly, F.; Pokki, H.; Eskelinen, P.; Rahikainen, M.; Keskinen, T.; Artell, J.; Romakkaniemi, A.; Suić, J.; Adámek, Z.; Heimlich, R.; Chalupa, P.; Ženíšková, H.; Lyach, R.; Berg, S.; Birnie-Gauvin, K.; Jepsen, N.; Koed, A.; Pedersen, M. I.; Rasmussen, G.; Gargan, P.,Roche, W. & Arlinghaus, R. 2020. Data collection systems and methodologies for the inland fisheries of Europe. FAO Fisheries and Aquaculture Technical Paper No. 649. Budapest, FAO. https://doi.org/10.4060/ca7993en

Quality checks documentation: N
Data quality check will be based on direct surveys on samples of fishers in each EMU

Data storage

National database:
FishDataNet Portale Nazionale Dati Alieutici https://dcf-italia.cnr.it/web/

International database: ICES database EEL https://mercure.eptb-vilaine.fr/shiny_dv/

Quality checks and data validation documentation: Quality checks for data storage are provided by the managers of national and international databases, at the relative links
FishDataNet Portale Nazionale Dati Alieutici https://dcf-italia.cnr.it/web/
ICES database EEL https://mercure.eptb-vilaine.fr/shiny_dv/

Sample storage

Storage description: All data (questionnaires submitted, data relative to anglers census, results of expansions for catch estimates etc. photos etc.) are archived electronically in Personal Computers, with back-ups on internal servers. Storage time is indefinite and maintenance guaranteed, all samples being stored as long as possible in case of the need of checks, under the Responsibility of the Scientific Unit of the tasks.

Sample analysis:

Data processing

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

Editing and imputation methods: N

Quality document associated to a dataset: N

Validation of the final dataset: Data collection, sampling scheme, quality check of final datasets to be provided to national end users and international end-users will be carried out with relevant partners at national levels (EMUs Administrations, in coordination with work for Regulation 1100/2007 in ITALY, MIPAAF) and international levels (EIFAAC/ICES/GFCM WGEEL).

Related to Table and Text box 2.4

Sampling scheme identifier: SciObsOnShore*recreational (off site surveys)

MS : ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier SciObsOnShore*recreational (off site surveys)

Sampling scheme type: recreational (off site surveys)

Observation type: SciObsOnShore

Time period of validity: from 2025 until 2027

Short description (max 100 words):

- **<u>For species identified in the GFCM Report</u> (WGRF 2021 appendix 3 and 5) (still to be defined): sample telephone survey (triennial frequency) to collect information about recreational fishermen and to extract a panel to be involved in a subsequent scientific survey phase, conducted an annual base.**
- **<u>For large pelagic species</u>, according to the ICCAT list of elasmobranchs and highly migratory species: triannual census of the boats to estimate the universe of anglers and extract a panel to be involved in a subsequent scientific survey phase, conducted an annual base. The official register of catches for bluefin tuna and swordfish will also be considered.**

In both cases:

- scientific survey (annual frequency) on the panel to integrate and validate the data acquired (es: area, type of fishing, etc.), and to provide additional information on catches per species (retained or released);

- extrapolation data and estimate of total number of fisherman and catch per species.

Description of the population

Population targeted:

<u>For species identified in the GFCM Report:</u> the primary sampling units (PSU) are the national recreational fishermen older than 18 years. Italian non-residents in Italy and under-18 years old are excluded; main target species concern the "species of common interest with the professional fishing", in line with National Program; main survey area is whole national waters.

<u>For large pelagic species:</u> as this type of fishing can only be operated by boat, the primary sampling units (PSU) are the recreational fishing boats present in national ports; main target species concern the ICCAT list of elasmobranchs and highly migratory species.

The survey area is the whole national area.

Population sampled:

For species identified in the GFCM Report: The sample population will be represented by fishermen engaged in recreational fishing, both from shore and/or from boats.

For large pelagic species: sampled population will be represented by boats that operate recreational fishing activities in all touristic ports throughout the year.

Stratification:

In both cases, the population will be stratified according to a geographical criterion with only one stratum with 15 lots (coastal regions). Non-coastal regions are excluded, and will be eventually estimated.

For species identified in the GFCM Report: 70% of the interviews will be done in coastal municipalities and 30% in non-coastal municipalities

Sampling design and protocols

Sampling design description:

For species identified in the GFCM Report: a probability sampling according to a stratified random sampling criterium without replacement will be used.

For large pelagic species: probability sampling according to a random sampling criterium without replacement.

Is the sampling design compliant with the 4S principle?: NA

Regional coordination: N

Link to sampling design documentation:

ICES. 2013. Report of the ICES Working Group on Recreational Fisheries Surveys 2013 (WGRFS), 22-26 April 2013, Esporles, Spain. ICES CM 2013/ACOM:23. 49 pp. - http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGRFS%202013/WGRFS%20Report%202013.pdf

- ***Grati, F., Carlson, A., Carpentieri, P. & Cerri, J. 2021. Handbook for data collection on recreational fisheries in the Mediterranean and the Black Sea. FAO Fisheries and Aquaculture Technical Paper No. 669. Rome, FAO. https://doi.org/10.4060/cb5403en***

for species identified in the GFCM Report:

. **Italian case study. In: Final report of the RCG-MED&BS meeting 2021 – Workshop on recreational fishery. 8-9 March 2021 and 9 April 2021 (follow-up meeting).**

<u>for large pelagic species:</u>

. **Pilot Study Report on Tuna sport fishing activity in Italy - Di Natale A., et al. - Col. Vol. Sci. Pap. ICCAT, 58(4): 1360-1371 (2005).**

Compliance with international recommendations: Y

Link to sampling protocol documentation:

- ***ICES. 2013. Report of the ICES Working Group on Recreational Fisheries Surveys 2013 (WGRFS), 22-26 April 2013, Esporles, Spain.***
- ***ICES CM 2013/ACOM:23. 49 pp. - http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGRFS%202 013/WGRFS%20Report%202013.pdf***

Grati, F., Carlson, A., Carpentieri, P. & Cerri, J. 2021. Handbook for data collection on recreational fisheries in the Mediterranean and the Black Sea. FAO Fisheries and Aquaculture Technical Paper No. 669. Rome, FAO. https://doi.org/10.4060/cb5403en

Sampling implementation

Recording of refusal rate: N. In both cases: documentation could be available at the end of pilot survey.

Monitoring of sampling progress within the sampling year: NA

Data capture

Means of data capture: In both cases the means for collecting the data are represented by paper logbooks and computer storage for data processing.

Data capture documentation:

Grati, F., Carlson, A., Carpentieri, P. & Cerri, J. 2021. Handbook for data collection on recreational fisheries in the Mediterranean and the Black Sea. FAO Fisheries and Aquaculture Technical Paper No. 669. Rome, FAO. https://doi.org/10.4060/cb5403en

Quality checks documentation:

ICES. 2013. Report of the ICES Working Group on Recreational Fisheries Surveys 2013 (WGRFS), 22-26 April 2013, Esporles, Spain. ICES CM 2013/ACOM:23.

49 pp. - http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGRFS%202 013/WGRFS%20Report%202013.pdf
Data storage
National database: Y. **Register of fishermen of the Ministry of Agricultural, Food and Forestry Policies (Min.Decr. 6 Dec 2010). Availability by the Ministry is still. subject to possible limitations.** **International database: NA** **Quality checks and data validation documentation: NA**
Sample storage
Storage description: **Sample analysis:** **All data (questionnaires, data relative to angler's census, results of expansions for catch estimates etc. photos etc.) are archived electronically in Personal Computers, with back-ups on internal servers. Storage time is indefinite, and maintenance guaranteed, all samples being stored as long as possible in case of the need of checks, under the Responsibility of the Scientific Unit of the tasks.**
Data processing
Evaluation of data accuracy (bias and precision): N. In both cases: documentation could be available at the end of the survey. **Editing and imputation methods: N. In both cases: documentation could be available at the end of the survey.** **Quality document associated to a dataset: N. In both cases: documentation could be available at the end of the survey.** **Validation of the final dataset: N. In both cases: documentation could be available at the end of the survey.**

Related to Table 4.1 (stomach sampling)

Sampling scheme identifier: MEDITS_Stomach

MS: ITA

Region: Mediterranean and Black Sea

Sampling scheme identifier: MEDITS_Stomach

Sampling scheme type: Research survey at sea

Observation type: SciObsAtSea

Time period of validity: from 2025 until 2027

Short description (max 100 words):
According to the provisions of RCG Med&BS Regional Work Plan on data collection in the fisheries and aquaculture sectors - 2025-2027, v. 5.3 (RCG Med&BS 2024) (hereafter RWP 2025-2027), the stomachs sampling scheme that will be adopted in ITA during 2025-2027 is aimed mainly at collecting full stomachs of European hake, *Merluccius merluccius*, during the MEDITS scientific survey (binding activity). The sampling scheme covers the Italian GSAs 9, 10, 11, 16, 17, 18 and 19. However, *M. merluccius* stomachs may also be collected in commercial fishing trips samplings in the same GSAs (non-binding activity). Additionally, full stomachs of *Lophius* spp. may be collected during the MEDITS survey and commercial fishing trips samplings in GSAs 9, 10, 11, 16, 17, 18 and 19.

Description of the population

Population targeted*:*
European hake, *M. merluccius* populations, in the GSAs 9, 10, 11, 16, 17, 18 and 19 are the main target of the stomachs sampling and analysis. Additionally, if feasible, *Lophius spp*. populations may be targeted for stomachs sampling and analysis in the same GSAs.

References:
RCG Med&BS (2024). Regional Work Plan on data collection in the fisheries and aquaculture sectors - 2025-2027, v. 5.3. Paris, 30 August 2024.

Population sampled:
European hake, *M. merluccius* populations, in the GSAs 9, 10, 11, 16, 17, 18 and 19 will be sampled for stomachs collection and analysis. Additionally, if feasible, *Lophius spp*. populations may be sampled for stomachs collection and analysis in the same GSAs.

Stratification:
The European hake (*M. merluccius*) is one of the most abundant and economically important demersal species in Mediterranean; the species shows a wide bathymetric range (usually from 50 to 400 m depth), is an active predator with ontogenetic changes in the food spectrum (Whitehead et al. 1986). Anglerfishes (*Lophius* spp.) are benthic species with depth ranges from 20 to 1000 m *(Lophius piscatorius*) and 70 – 1000 m (*Lophius budegassa*) (Whitehead et al. 1986).

References:

Whitehead P.J.P., Bauchot M.-L., Hureau J.-C., Nielsen J., Tortonese E. (1986). Fishes of the North-Eastern Atlantic and the Mediterranean. Volumes I – III. UNESCO.

Sampling design and protocols

Sampling design description:

The sampling protocol adopted by ITA is in agreement with the provisions of the RWP 2025-2027 and the recommendations of the MARE/2016/22 STREAM project (RCG-Med&BS 2019) as follows:

As regards *M. merluccius*, samples of full stomachs will be collected mainly during the annual MEDITS trawl survey (quarters 2,3). If feasible, additional *M. merluccius* stomachs may be collected during the biological sampling of commercial fisheries (quarters 1, 2, 3, 4). A minimum of 70 full stomachs will be collected in MEDITS in GSAs 9, 10, 11, 15, 16, 17, 18 and 19 every year. If feasible, a minimum of 30 additional full stomachs per year will be collected during the biological sampling of commercial fisheries in the same GSAs. Sampling of stomachs will be carried out according three life stages/size classes following the suggestions of the STREAM project: 1) juveniles (<20 cm TL); 2) sub-adults (20-35 cm TL) and 3) adults (>35 cm TL).

As concerns *Lophius spp*., samples of full stomachs will be collected, if feasible, during the annual MEDITS trawl survey (quarters 2, 3) and during the biological sampling of commercial fisheries (quarters 1, 2, 3, 4). A minimum of 24 full stomachs per year may be sampled in MEDITS in GSAs 9, 10, 11, 15, 16, 17, 18 and 19. Furthermore, a minimum of 24 full stomachs may be sampled with the biological sampling of commercial fisheries in the same GSAs. The sampling will be carried out according to two life stages/size classes, following the suggestions of the STREAM project: 1) small individuals (<30 cm TL); 2) large individuals (>30 cm TL).

Is the sampling design compliant with the 4S principle?

NA

Regional coordination: Sampling design and protocols used in the implementation of stomachs sampling in ITA during 2025-2027 will follow the provisions of RWP 2025-2027 that was prepared by RCG Med&BS to be implemented in the Mediterranean and Black Seas.

Link to sampling design documentation:
The stomachs sampling and analysis will be carried out according to the provisions of RWP 2025-2027 and the recommendations of the STREAM project, as detailed above.



Design follows international recommendations:

Y

The stomachs sampling and analysis will be carried out according to the provisions of RWP 2025-2027 and the recommendations of the STREAM project, as detailed above.

Link to the sampling protocol documentation: see the link above.

https://dcf.ec.europa.eu/regional-coordination/regional-grants_en

Protocol follows international recommendations:

Y

The stomachs sampling and analysis will be carried out according to the provisions of RWP 2025-2027 and the recommendations of the STREAM project, as detailed above.

ANNEX 1.2 - QUALITY REPORT FOR SOCIOECONOMIC DATA SAMPLING SCHEME

The quality report fulfils Article 6 (3) (d) of the Regulation (EU) 2017/1004. This document is intended to specify data to be collected under chapter II, points 3, 5, 6, and 7 of the Delegated Decision annex: Socioeconomic data on fisheries, aquaculture and any complementary data collection of fishing activity and fish processing.

Use this document to describe quality aspects of the data collection process (design, sampling implementation, data capture, data storage and data processing etc.). The annex should be filled for each sampling scheme. Where applicable, use the handbook on sampling design (Deliverable 2.1 from MARE/2016/22 SECFISH study), available on the DCF website.

Provide information under each point in all sections.

Please indicate sampling scheme identifier (e.g combination of 'sector' and 'sampling scheme' or 'variables' from the annex table). Each identifier is unique and can be used only once; records with identical scheme identifiers are overwritten in the platform. Do not add any tables others than from the template.

Create a first survey specification record as a reference to the regional WP, add 'RWP ECON' in the 'sector name' field and leave the other fields empty.

Sampling scheme identifier: 1RWP_ECON

Survey Specifications
'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex. *'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.* *'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.* *'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*
Sector name(s): RWP ECON implemting year 2025-2027
Sampling scheme:
Variables:
Supra region(s):
Survey planning
Survey design and strategy

1. Data sources: 2. Sample sizes: 3. Survey methods: 4. Additional information used in the survey strategy:
Estimation design
1. Calculation method for population estimate: 2. Calculation method for derived data: 3. Nonresponse handling:
Error checks
Data storage and documentation
1. Data storage: 2. Documentation:
Revision
Confidentiality
1. Are procedures for confidential data handling in place and documented? 2. Are protocols to enforce confidentiality between DCF partners in place and documented? 3. Are protocols to enforce confidentiality with external users in place and documented? 4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

Sampling scheme identifier: FA_PSS_MBS

Survey Specifications
'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex. *'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.* *'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.* *'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*
Sector name(s): Fishing activity variables data collection strategy
Sampling scheme: PSS
Variables: Data on the activity of Union fishing ve-ssels within and outside the Union waters and gross value of landings (only fleet segments including vessels lower than 10m)

Supra region(s): Mediterranean and Black Seas

Survey planning: fleet < 10 meters (exempt from regulation control)

To conduct the probability sample survey for the fleet exempt from the regulation control, the target population includes all vessels under 10 meters in length registered in the Common Fleet Register (CFR), totalling 7,412 units.

Data on the most common fishing techniques come from the monitoring detection network. However, much of the fleet under 10 meters uses passive gear, classified as "Vessels using Polyvalent 'passive' gears only."

Survey design and strategy

Data sources: Data sources will depend on the different types of data collection that will be used to collect the variables. In particular:

- The Fleet Register will be used for capacity: number of vessels, mean LOA of vessels, GT, kW, Vessel age.
- Ad hoc electronic questionnaires will be used to collect the variables listed in table 6 of delegated decision 1167/2021, from the sample vessels selected by means of a specific sampling plan.

Sample sizes: The sampling follows a stratified method, where fishing vessels are divided into homogeneous groups based on the criteria established in Table 8 of the EU MAP Delegated Decision annex. However, for more efficient spatial coverage, stratification at the NUTS 2 area level is planned. The sample unit is the single vessel, and this unit is selected from the Fleet Register, which also represents the frame population. The sampling is of a stratified nature as fishing vessels of the fleet are divided into homogenous groups (stratum) based on suitable variables: geographical (NUTS2), technical (fishing technique) and dimensional (LOA class).

Survey methods: In view of the multiplicity of variables to be estimated, as outlined in Table 6 of the EU MAP Delegated Decision annex, the optimal sample size per stratum is determined using Bethel's procedure (1989). The vessels are selected using PPS methodology (Probability Proportional to Size) by applying the algorithm of HanuravVijayan.
To estimate totals per stratum, the Horvitz-Thomson estimator is applied, while the Sen-Yates-Grundy formula is used to calculate the relative sampling error.
The multivariate allocation method is implemented in the MAUSS-R v.1.1, software developed at ISTAT as described in
https://www.istat.it/it/files/2011/02/user_and_methodological_manual.pdf

Additional information used in the survey strategy: Following the random extraction of the boats to be sampled, based on the stratum, the list is sent to the network of data collectors. The data collector contacts the shipowners in his area and notifies the inclusion in the sample survey to define a meeting plan and ask for consent to the use of data in accordance with the privacy policy. Sampling activities are carried out daily and the collectors are selected professionals involved in the fishing sector, including individuals with working relationships with trade associations such as ship owners, former fishermen, and especially biologists specializing in biological sampling aboard fishing vessels. These professionals are part of the industry, which allows them to easily connect with ship owners and be present during landings. Periodically, at least once a year, training courses are organised for the data collectors to update on possible software developments and to improve their knowledge on the identification of fish species. In this latter case, the expertise of marine biologist constantly involved in surveys on the evaluation of fisheries resources, is used.
The calculation of the coefficient of variation for the variables of the sample survey is based on the algorithm programmed in R environment, in which the CV is estimated on the basis of the weights and probability of inclusion of the first order (or probability of inclusion in the sample) and second order (simultaneous presence of i and j units in the sample), using the algorithm of Hanurav-Vijayan, which defines a series of steps to carry out the extraction of a pre-set sample number (n), without replacement, and with probability of inclusion in the sample for the single non-uniform units, with respect to sampling with variable probability (CPV) or PPS (Probability proportional to size) or πPS (inclusion probability proportional to size).

Estimation design

1. Calculation method for population estimate:

For each variable the estimate of the total is obtained using the Horvitz-Thompson estimator:

$\hat{Y}_h = \sum_{i=1}^{n_h} \frac{y_{hi}}{\pi_{(h)i}}$, where h is the stratum index and i indicates the sampling unit; obviously, by summing all the strata, the estimate of the total of the variable Y is obtained:

$$\hat{Y} = \sum_{h=1}^{H} \hat{Y}_h = \sum_{h=1}^{H} \sum_{i=1}^{n_h} \frac{y_{hi}}{\pi_{(h)i}} .$$

The estimate of the average, in analogy with the estimate of the totals, will be given by $\hat{\bar{Y}}_h = \frac{1}{N_h} \sum_{i=1}^{n_h} \frac{y_{hi}}{\pi_{(h)i}}$, for the single stratum h, by $\hat{\bar{Y}} = \frac{1}{N} \sum_{h=1}^{H} N_h \hat{\bar{Y}}_h = \frac{1}{N} \sum_{h=1}^{H} \sum_{i=1}^{n_h} \frac{y_{hi}}{\pi_{(h)i}} = \frac{\hat{Y}}{N}$ for the total of the variable Y.

For the estimate of the variance of the total the Sen-Yates-Grundy formula is used:

$\hat{\sigma}^2(\hat{Y}_h) = \sum_{i=1}^{n_h} \sum_{j>i}^{n_h} \left(\frac{\pi_{(h)i}\pi_{(h)j}}{\pi_{(h)ij}} - 1 \right) \left(\frac{y_{hi}}{\pi_{(h)i}} - \frac{y_{hj}}{\pi_{(h)j}} \right)^2$,for the single stratum h, while, having obtained the sample of H independent selection in each stratum , the total variance is obtained from the sum of the variances from within each single stratum:

$$\hat{\sigma}^2(\hat{Y}) = \sum_{h=1}^{H} \hat{\sigma}^2(\hat{Y}_h) = \sum_{h=1}^{H} \sum_{i=1}^{n_h} \sum_{j>i}^{n_h} \left(\frac{\pi_{(h)i}\pi_{(h)j}}{\pi_{(h)ij}} - 1 \right) \left(\frac{y_{hi}}{\pi_{(h)i}} - \frac{y_{hj}}{\pi_{(h)j}} \right)^2 .$$

The relationship between the estimate of the standard deviation of the total and the estimate of the total itself, provides the estimate of the sampling error committed ($\hat{\sigma}(\hat{Y}_h)/\hat{Y}_h$ or $\hat{\sigma}(\hat{Y})/\hat{Y}$ depending on whether or not reference is made to the single stratum).

For the estimate of the variance of the population relative to each stratum the formula of Chaudhuri is used:

$$\hat{\sigma}_h^2 = \frac{1}{2N_h^2} \sum_{i \neq j}^{n_h} \frac{(y_{hi} - y_{hj})^2}{\pi_{(h)ij}} = \frac{1}{N^2} \sum_{i=1}^{n_h} \sum_{j>i}^{n_h} \frac{(y_{hi} - y_{hj})^2}{\pi_{(h)ij}} .$$

This last value can be used as an input parameter for the procedure of Bethel.

2. Calculation method for derived data: *NA*
3. Nonresponse handling: The estimate of missing data is carried out:
   - by using other analogous information present in the database for the same period. Due to the intrinsic seasonality of the sector, it is preferred to refer to the same month of the previous year,
   - on the basis of the values observed in the time series.

The missing data estimation process is based on specific rules and priorities that take into account the stratum of the vessel to be estimated.

Error checks

Data are collected using a web-based questionnaire developed to carry out the survey. The software is available on a web platform to facilitate the compilation of the survey by the data collectors. The quality control of sample data consists of the following steps:

- Training on the data collector,
- control on the field,
- Statistical and consistency checks of the sample data,
- Statistical analysis through specific tool developed for the sample survey of the effort and landings data of the fishing fleet.

The calculation of inclusion probabilities, or expansion factors, was obtained in the environment of programming R. The sample design was set assuming that the units were extracted following the PPS (Probability Proportional to Size) methodology.

Non Sampling errors
Errors due to factors other than sampling are called non-sampling errors.
Sample data are subjected to control and correction procedures in order to guarantee the highest quality results. The control is divided into three steps.

1. A first series of checks is carried out automatically by the Software when data are entered by the data collector. This is essentially a consistency check on raw data in order to verify the integrity of the file to be transmitted and avoid duplications or macroscopic errors due, for example, the incorrect insertion by data collector (typing errors). Other checks foreseen at this stage concern the compliance of the data with respect to the context, for example:
   - congruence between days of gear use and fishing days;
   - compatibility of the gear dimensions;
   - presence of prices euro/kg <0.1 or> € 1000;
   - existence of prices and revenues set at 0 coinciding with landing > 0.

2. The second set of checks are carried out using a software that interacts with the database. The main checks can be listed as follows:
   - price by species;
   - association gear / species, métier;
   - activity level by stratum based on historical series;
   - trend of the daily yield by stratum based on historical series;
   - trend of the cpue by stratum based on historical series.

When anomalous data and outlier data are detected, data are “frozen” and pending verification with possible correction. Decision on data intervenes after internal decision of the staff or by contacting the data collector to confirm or correct the data.

3. The last step concerns checking and consolidating data through the estimate of missing data and can be carried out:
   - by using other analogous information present in the database for the same period. Due to the intrinsic seasonality of the sector, it is preferred to refer to the same month of the previous year,
   - on the basis of the values observed in the time series.

The missing data estimation process is based on specific rules and priorities that take into account the stratum of the vessel to be estimated.

These estimates also use the benchmark series determined by the ARIMA model.

Some of the parameters for measurement of the quality of statistical processes:
Relevance
All the requests and needs of both administrative and scientific data will be guaranteed and all requests will be fulfilled.

Accuracy and reliability
As described in the methodology reported previously, the sampling is based on the Bethel algorithm. Of course, the sample size find a limit in the budget. The error coefficient is set at 3%/-5%.
Timeliness and punctuality
The delivery of the data will take place according to the following timing:
by 30/09 year n: data I quarter year n
by 31/12 year n: data II quarter year n
by 30/03 year n + 1: data III quarter of the year n
by 30/04 year n + 1: data fourth quarter year n.
Coherence and comparability
The comparability over time is assured, with time series since 2004 without breaks.

Data storage and documentation

3. **Data storage**: The information is collected day by day and digitized on a weekly basis. The data collectors transmit the data through a web application that allows the data to be inserted into the database with subsequent control processing using specific procedures. The web application is responsive, allowing data collectors to operate both from mobile and by PC. The information will be stored in a MySQL database and processed through procedures stored within the database. The software that interacts with the database has been created using the following technologies: C#, ASP.NET Core, Bootstrap, Javascript, HTML, CSS
4. Documentation: *NA*

Revision Effort and productions variables will be collected every year starting from 2024 and the review of the sampling plan will be annual

Confidentiality

5. Are procedures for confidential data handling in place and documented?
6. Are protocols to enforce confidentiality between DCF partners in place and documented?
7. Are protocols to enforce confidentiality with external users in place and documented?
8. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

For the purpose of compliance with the privacy rules, the reference to the sample unit is encrypted and the provision of data will take place only in aggregate form. At the moment there are no provisions for the drafting of documents on the protocols and procedures relating to confidentiality and privacy measures.

Sampling scheme identifier: AQ_PSS_MBS

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Economic and social variables for aquaculture data collection

Sampling scheme: PSS

Variables: Socioeconomic data on aquaculture

Supra region(s): Mediterranean and Black Seas

Survey planning

Economic data will be collected for the aquaculture sector as defined by EU Reg. 1380/13 and the population will be defined according to EUMAP (enterprises whose primary activity is defined according to the European classification of economic activities NACE (1) codes 03.21 and 03.22 and who operate for profit). The sample frame and the allocation scheme will be derived from the Eurostat survey implemented according to REG CE n. 762/2008

Survey design and strategy

5. Data sources:

6. Sample sizes:

7. Survey methods:.

8. Additional information used in the survey strategy:.

The optimum sample number per stratum is defined according to Bethel's procedure, that is a mathematical algorithm to achieve the optimum sample allocation in a multivariate sample survey. Information will be collected through the choice of a representative sample per single productive segment, with a random selection. Once selected the firm sample per productive segment it will also be possible to substitute a single firm if necessary.No social and economic data on aquaculture will be collected for species accounting for less than 10 % of the Italian aquaculture production by volume and value.

Estimation design

4. Calculation method for population estimate:

5. Calculation method for derived data:

6. Nonresponse handling:

To obtain the estimates of the totals per stratum, the Horvitz-Thompson formula will be used, derived for the particular case of the simple random sampling without replacement. According to this particular estimator, the variance and the CV will be calculated to evaluate the precision level

Error checks

Accuracy indicators will be calculated to provide information on the quality of the collected data, for each variable. In particular, information on data quality will be given in terms of target precision levels and coverage rates. The estimation of the variance for the calculation of the CV will be also provided. The phase of controlling and correcting data consists in identifying and treating errors present in the primary data, in the aim of guaranteeing final results with specified levels of quality.

Data storage and documentation

1. Data storage: 2. Documentation: The Italian data base on DCF data is at: Fishnet (cnr.it)
Revision
Confidentiality
9. Are procedures for confidential data handling in place and documented? 10. Are protocols to enforce confidentiality between DCF partners in place and documented? 11. Are protocols to enforce confidentiality with external users in place and documented? 12. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

Sampling scheme identifier: 2Fishery_PSS_MBS

Survey Specifications
'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex. *'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.* *'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.* *'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*
Sector name(s): Socio-economic data on fisheries
Sampling scheme: Probability Sample Survey (PSS)
Variables: other income, personnel costs, value of unpaid labour, energy costs, repair and maintenance costs, other variable costs, other non-variable costs, investments in tangible assets (net purchase of assets), paid labour, unpaid labour, full-time equivalent (FTE), total hour worked per year, energy consumption, employment by gender, FTEs by gender, unpaid labour by gender, employment by age, employment by level of education, employment by nationality, employment by employment status.
Supra region(s): Mediterranean Sea and Black Sea
Survey planning
The population consists of all active vessels registered in the Union Fishing Fleet Register (as defined in Commission Implementing Regulation (EU) 2017/218 of 6 February 2017) on 31 December of the reporting year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year.

Survey design and strategy

1. Data sources: The sample unit is the single vessel. This unit is selected from the population described above, which is also the frame population. Data for each vessel in the sample is collected by using ad-hoc electronic questionnaires. A web platform is made available to the data collectors to facilitate the compilation of the questionnaires.
2. Sample sizes: The software "R2BEAT: Multistage Sampling Allocation and Sample Selection", an extension of another open-source software called MAUSS-R (Multivariate Allocation of Units in Sampling Surveys), developed by ISTAT (Italian National Institute of Statistics), is used to identify the optimum sample number per stratum according to Bethel's procedure (1989). The minimization of the sample size and its allocation among strata are carried out according to maximum accepted sampling errors of the estimates. The vessels included in the sample are selected using PPS (Probability Proportional to Size) methodology by applying the algorithm of Hanurav-Vijayan. The sampling design requires the extraction, without repetition, of the sampling units, which first-order inclusion probability is not constant, but is proportional to a selected auxiliary variable.
3. Survey methods: A stratified multivariate sample survey, where the fishing vessels of the fleet are divided into homogenous groups, is carried out. The stratification of the population is based on geographical, technical and dimensional variables. The geographical variable is the GSA (Geographical Sub-Area) where the base port of the vessel is located. The technical and dimensional variables are the predominant fishing gear and the LOA (Length Over All) as reported in Table 8 of EUMAP (Commission Delegated Decision (EU) 2021/1167 of 27 April 2021) for the definition of the fleet segments. Information on the base port and the predominant fishing gear are derived from the Fishing activity survey.
4. Additional information used in the survey strategy: The auxiliary variable used in the sample survey is the vessel length over all (LOA), which has been demonstrated to be proportional to the economic variables of interest.

Estimation design

1. Calculation method for population estimate: As the survey is based on a stratified sample, the estimate of the total for the population are given by the sum of the totals of the population estimated for each stratum. The estimates of the totals for each stratum are given by the Horvitz-Thompson estimator, i.e. the sum of the values collected for each sample unit divided by its inclusion probability. The inclusion probabilities and the related sampling weights (or raising factors) change with the vessel as the sampling design is based on the PPS (probability proportional to size) method. The estimation design is in line with the Handbook on sampling design (Chapter 3.5 Sampling with probability proportional to size, paragraph 3.5.3 Estimation of parameters https://datacollection.jrc.ec.europa.eu/documents/d/dcf/methodology-handbook-deliverable-2-1).
2. Calculation method for derived data: Not applicable.
3. Nonresponse handling: A weighting adjustment technique is used in case of nonresponse, where the compensation of nonresponse effects consists in adjusting the sampling weights associated to respondent units.

Error checks

The quality of data collected by means of PPS is ensured by applying sound statistical approaches and providing

data on coverage rates and coefficient of variation.
Automatic error checks are implemented to reduce errors related to duplication and typing errors. Other "non sampling errors" are checked through an interactive graphic micro-editing of the univariate type procedure. The control is mainly of the univariate type, variables are controlled individually at level of single cost item (as collected through the questionnaire) or aggregated in macro-variables.
The main control activities consist in the identification of outliers on absolute values and on mean values, evaluation of the costs structure and comparison with benchmark data. Graphic tools to visibly evaluate situations marked as errors are used. Procedures for selecting and training data collectors are adopted to reduce the impact of non-sampling error.
The identified outliers and missing data are corrected by re-interviewing the data collector. A set of statistical methods are used to estimate the missing data or to correct outliers: mean of the group, regression (the value is estimated by a linear regression on days at sea for a group of similar vessels), hot deck (the value is estimated by a random selection among the values collected on the same variable for a group of similar vessels).
Final data undergo to a further quality check; the process of quality control of the final estimates allow the identification of anomalous values. This activity is carried out through interviews with sector operators, the use of auxiliary information, expert knowledge on the sector, and statistical analysis of the final estimates based on the historical series.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NIBAT created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology of the Italian data collection for the fishery sector is available at Fishnet (cnr.it)

Revision

Social variables are collected every three years. Along the period of this Work Plan, social data for the reference year 2026 will be collected.
Clustering, fleet segmentation and sample size in Table 5.1 and Table 5.2 could be subject to change because of potential structural changes in the fleet.
According to RCG-ECON, assumptions and methods could be periodically adjusted.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 3Fishery_C_ ALL

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.

'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socio-economic data on fisheries

Sampling scheme: Census (C)

Variables: Gross value of landings (all fleet segments expect for those including vessels lower than 10m), income from leasing out quota or other fishing rights, operating subsidies, subsidies on investments, lease/rental payments for quota or other fishing rights, number of fishing enterprises/units.

Supra region(s): All supra regions

Survey planning

The population consists of all active and inactive vessels registered in the Union Fishing Fleet Register (as defined in Commission Implementing Regulation (EU) 2017/218 of 6 February 2017) on 31 December of the reporting year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year.

Survey design and strategy

1. Data sources: The data sources for the estimation of these variables are the Fleet Vessel Register for the number of fishing enterprises and the official administrative records for the other variables.
2. Sample sizes: The access to the databases mentioned above allows the research institute responsible for the production of economic data to carry out a census for these variables.
3. Survey methods: The survey is carried out through a census. For operating subsidies and subsidies on investments, data refers to the year of payments and not to the start date of the public intervention.
4. Additional information used in the survey strategy: No additional information is used for the survey.

Estimation design

1. Calculation method for population estimate: The final estimates are given by the sum of the data collected through the census. Data by fleet segment are produced based on the vessels' categorisation by predominant fishing technique and vessel length.
2. Calculation method for derived data: No derived data.
3. Nonresponse handling: As data comes from administrative sources, the case of non-response is not foreseen.

Error checks

Data are checked against data series for sake of coherence. In addition, the validation of the collected data is based on the calculation of average parameters per vessel and per fishing day.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NIBAT created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.

Revision

Clustering and fleet segmentation in Table 5.1 and Table 5.2 could be subject to change because of potential structural changes in the fleet.
According to RCG-ECON, assumptions and methods could be periodically adjusted.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 4Fishery_NPS_ALL

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socio-economic data on fisheries

Sampling scheme: Non-Probability Sample Survey (NPS)

Variables: gross debts.

Supra region(s): All supra regions

Survey planning

The population consists of all active vessels registered in the Union Fishing Fleet Register (as defined in Commission Implementing Regulation (EU) 2017/218 of 6 February 2017) on 31 December of the reporting

year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year.

Survey design and strategy

1. Data sources: The sample unit is the single vessel. The main data source for the estimation of this variable consists of the financial accounts available from the Chambers of Commerce. As the financial accounts are related to fishing companies, the link with the sample units (fishing vessels) is derived from the Italian Fleet Register. Sample units are collected through an electronic access to the databases containing the balance sheets of Italian firms.
2. Sample sizes: The sample sizes consist of all fishing vessels covered by the financial statements available for the reference year at the time of the survey. The planned sample rate (reported in table 5.2) is calculated as the minimum expected value, given by the lower between that envisaged in the previous programming period and the achieved sample rate registered in the most recent survey (at the time of this NWP drafting), rounded to 2 digits.
3. Survey methods: The filing of the financial statements is not mandatory for all types of company. Therefore, neither a census nor a probability sample survey is feasible. The non-probability sample survey applied for this variable is based on all financial statements available for the reference year at the time of the survey.
4. Additional information used in the survey strategy: The auxiliary variable “value of physical capital”, which is available for each vessel of the fleet, is used to split proportionally the sample data on gross debts among vessels when the fishing company owns more than a vessel.

Estimation design

1. Calculation method for population estimate: As the probability distribution of the sample is not known, the estimation of the total is obtained assuming a simple random sampling, as reported in the Handbook on ‘Methodologies on sampling designs and estimation methods for fleet and aquaculture economic data collection’ (https://datacollection.jrc.ec.europa.eu/documents/d/dcf/methodology-handbook-deliverable-2-1), with a calibration based on the value of physical capital as auxiliary information. The calibration is carried out by assuming the value of physical capital as the known value of the total assets. Estimation of gross debts is carried out by stratum. The stratification of the population is based on geographical, technical and dimensional variables. The geographical variable is the GSA (Geographical Sub-Area) where the base port of the vessel is located. The technical and dimensional variables are the predominant fishing gear, and the LOA (Length Over All) as reported in Table 8 of EUMAP (Commission Delegated Decision (EU) 2021/1167 of 27 April 2021) for the definition of the fleet segments. Information on the base port and the predominant fishing gear are derived from the Fishing activity survey.
2. Calculation method for derived data: When no sample unit is available for a stratum, the value of total assets for that stratum is given by the value of physical capital, while the gross debts is estimated by multiplying the mean value of the financial position of the related length class by the value of the total assets. The value of the financial position by length class is calculated as an average of the ratio between gross debts and total assets for the strata belonging to the same length class with available sample units.
3. Nonresponse handling: A weighting adjustment technique is used in case of nonresponse, where the compensation of nonresponse effects consists in adjusting the sampling weights associated to respondent units.

Error checks
Sample data coming from the financial statements of the fishing firms are checked by setting specific ranges of acceptable values, also based on the analysis of historical trends. When available, the additional notes to the financial statements are analysed to verify the data consistency.
Data storage and documentation
1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NIBAT created and maintained by the institute in charge of the data collection. 2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.
Revision
Clustering and fleet segmentation in Table 5.1 and Table 5.2 could be subject to change because of potential structural changes in the fleet. According to RCG-ECON, assumptions and methods could be periodically adjusted.
Confidentiality
1. Are procedures for confidential data handling in place and documented? 2. Are protocols to enforce confidentiality between DCF partners in place and documented? 3. Are protocols to enforce confidentiality with external users in place and documented? 4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation. In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 5Fishery_IND_ALL

Survey Specifications
'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex. *'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.* *'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.* *'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*
Sector name(s): Socio-economic data on fisheries
Sampling scheme: Indirect survey (IND)
Variables: consumption of fixed capital, value of physical capital, value of quotas and other fishing

rights, total assets.

Supra region(s): All supra regions

Survey planning

The population consists of all active and inactive vessels registered in the Union Fishing Fleet Register (as defined in Commission Implementing Regulation (EU) 2017/218 of 6 February 2017) on 31 December of the reporting year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year.

Survey design and strategy

1. Data sources: Dimensional data and technical characteristics (e.g. year of construction) are obtained through access to the Fleet register. The assumptions for the application of the PIM are adapted through the use of external sources. The Price per Capacity Unit (PCU) is based on the 1992 fishing boat construction indices, obtained from a survey of the Italian Naval Register (RINA), and classified by classes GT and hull material. The basic PCU 1992 is updated annually through the Producer price index of heavy machinery (ISTAT source).
2. Sample sizes: Not applicable.
3. Survey methods: The estimation of the value of physical capital and its consumption (over a certain year, i.e. depreciation) is based on the Perpetual Inventory Method (PIM) approach, as recommended by the Guidance document for the fishing fleet (https://datacollection.jrc.ec.europa.eu/documents/d/dcf/2023_rcg-econ_tm#page=97). The estimation of value of quotas and other fishing rights follows the approach developed under SECFISH and endorsed by RCGECON 2020. In line with Guidance document for the fishing fleet (https://datacollection.jrc.ec.europa.eu/documents/d/dcf/2023_rcg-econ_tm#page=97), the estimation of the value of quotas and other fishing rights applies only to tradable quotas and rights. The estimation is based on the calculation of the net present value of future cash flows and is estimated as a function of an expected series of cash flows, discounted on the basis of a discount rate that represents risk compensation or uncertainty in future economic income.
4. Additional information used in the survey strategy: With regard to the depreciation functions, as suggested by the RCG_ECON for the estimation of the capital value based on the replacement value, a digressive depreciation is adopted, applying the depreciation rates and assuming the useful life length of the assets as shown in the following table:

Assets	**Degressive depreciation rates**	**Lifetime (useful life in years)**
Hull	7%	infinite
Engine	25%	10
Electronic equipment	50%	5
Other equipment	35%	7

As regards the incidence of assets on the overall value of the vessel, the % shown in the following table apply:

Fishing technique	**Hull**	**Engine**	**Electonic equipment**	**Other equipment**
DRB	62,18%	16,72%	2,89%	18,22%

DTS/TBB/TM	50,90%	16,03%	8,55%	24,52%
HOK & PGP	39,33%	30,74%	11,30%	18,63%
PS	57,51%	11,74%	6,47%	24,27%

Estimation design

1. Calculation method for population estimate: The value of physical capital and the related consumption is estimated at vessel level by applying the replacement value capital estimation simple template, available at https://dcf.ec.europa.eu/guidelines/socio-economic-variables_en?prefLang=it. Data by fleet segment are produced based on the vessels' categorisation by predominant fishing technique and vessel length derived from the Fishing activity survey.
2. Calculation method for derived data: Not applicable.
3. Nonresponse handling: Being all the variables estimated on and indirect approach, no missing values are expected.

Error checks

Data are checked against data series for sake of coherence.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NIBAT created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.

Revision

Clustering and fleet segmentation in Table 5.1 and Table 5.2 could be subject to change because of potential structural changes in the fleet.
According to RCG-ECON, assumptions and methods could be periodically adjusted.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 6Fishery_C_OFR

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socio-economic data on fisheries

Sampling scheme: Census (C)

Variables: other income, personnel costs, value of unpaid labour, energy costs, repair and maintenance costs, other variable costs, other non-variable costs, investments in tangible assets (net purchase of assets), paid labour, unpaid labour, full-time equivalent (FTE), total hour worked per year, energy consumption, employment by gender, FTEs by gender, unpaid labour by gender, employment by age, employment by level of education, employment by nationality, employment by employment status.

Supra region(s): Other regions

Survey planning

The population consists of all active vessels registered in the Union Fishing Fleet Register (as defined in Commission Implementing Regulation (EU) 2017/218 of 6 February 2017) on 31 December of the reporting year and operating outside EU waters.

Survey design and strategy

1. Data sources: The sample unit is the single vessel. The main data source for the estimation of these variables consists of the logbooks and the financial accounts available from the Chambers of Commerce. As the financial accounts are related to fishing companies, the link with the sample units (fishing vessels) is derived from the Italian Fleet Register. Primary economic data are collected through an electronic access to the databases containing the balance sheets of Italian firms.
2. Sample sizes: The access to the databases mentioned above allows the research institute responsible for the production of economic data to carry out a census on this fleet segment.
3. Survey methods: The survey is carried out through a census.
4. Additional information used in the survey strategy: No additional information is used for the survey.

Estimation design

1. Calculation method for population estimate: Estimation of variables is carried out by stratum, The stratification of the population is based on geographical, technical and dimensional variables. In particular, the oceanic fleet is first divided on the basis of the RFMO under which the vessel operates (IOTC and CECAF). The technical and dimensional variables are the predominant fishing gear, and the LOA (Length Over All) as reported in Table 8 of EUMAP (Commission Delegated Decision (EU)

2021/1167 of 27 April 2021) for the definition of the fleet segments.
2. Calculation method for derived data: The allocation of items from balance sheets into DCF variables is based on the cost structure of the same strata for the previous years. Additional information on fuel consumption and fuel prices are sourced from interviews in order to get a coherent and reliable estimation of fuel costs. The estimation of the entire stratum is then parameterized based on the financial statement data, maintaining consistency with the operating results (gross operating margin).
3. Nonresponse handling: In case of nonresponse, weights are applied to the collected data to compensate for the missing units. This method assumes that the missing units are similar to those observed and adjusts the weights to reflect the total population.

Error checks

The control and validation of the collected data is based on the analysis of historical series trends and on the calculation of average operating parameters per vessel and per fishing day. In addition, the main shipowners are contacted annually to discuss the estimates of each variable and to receive insights on the main factors that may affect economic performance.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NIBAT created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.

Revision

The Italian "oceanic" fleet is continuously decreasing in terms of active units. If this trend continues, it will be necessary to revise the segmentation and data confidentiality issues may arise.
According to RCG-ECON, assumptions and methods could be periodically adjusted.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 7Processing_C_MBS

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection

of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socioeconomic data on the fish processing sector

Sampling scheme: Census (C)

Variables: Number of enterprises ("main" and "non-main" activity), Number of persons employed, Subsidies on investments.

Supra region(s): Mediterranean Sea and Black Sea

Survey planning

The population consists of all active enterprises, registered in the national Italian Enterprises' register on 31 December of the reporting year, whose main (primary) or non-main (secondary) activity is defined according to the Eurostat definition under NACE Code 10.20.

Survey design and strategy

1. Data sources: The data sources for the estimation of these variables are a) the national Italian Enterprises' register for the Number of enterprises and the Number of persons employed and b) the National official administrative records of Funds beneficiaries for Subsidies on investments. The access to those databases allows the research institutes responsible for the production of economic data to carry out a census for these variables.
2. Sample sizes:
3. Survey methods:
4. Additional information used in the survey strategy:

Estimation design

1. Calculation method for population estimate: No estimation is performed as primary data are collected by a census. The final estimates are given by the sum of the data collected through the census.
2. Calculation method for derived data:
3. Nonresponse handling: As data comes from administrative sources, the case of non-response is not foreseen.

Error checks

No error foreseen as the collection method is a census based on official administrative data.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NITRA created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.

Revision

Not applicable.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 8Processing_NPS_MBS

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socioeconomic data on the fish processing sector

Sampling scheme: Non-Probability Sample Survey (NPS)

Variables: Turnover ("main" and "non-main" activity), Other income, Operating subsidies, Personnel costs, Consumption of fixed capital, Other operating costs, Purchase of fish and other raw material for production, Energy costs, Financial income, Financial expenditures, Total value of assets, Gross debt, Gross investments, Full-time equivalent (FTE), Unpaid labour, Value of unpaid labour, Employment by gender, Employment by age, Employment by level of education, Employment by nationality.

Supra region(s): Mediterranean Sea and Black Sea

Survey planning

The population consists of all active enterprises registered in the national Italian Enterprises' register on 31 December of the reporting year, whose main (primary) or non-main (secondary) activity is defined according

to the Eurostat definition under NACE Code 10.20.

Survey design and strategy

1. Data sources: The sample unit is the single fish processing enterprise (enrolled in the national register with the NACE Code 10.20). The main data source for the estimation of these variables consists of the financial accounts available from the Chambers of Commerce. Sample units are collected through an electronic access to the databases containing the balance sheets of Italian firms.
2. Sample sizes: The sample sizes consist of all fish processing enterprises covered by the financial statements available for the reference year at the time of the survey. The planned sample rate (reported in table 7.1) is calculated as the minimum expected value, given by the lower between that envisaged in the previous programming period and the achieved sample rate registered in the most recent survey (at the time of this NWP drafting), rounded to 2 digits.
3. Survey methods: The publication of the financial statements is not mandatory for all types of company. Therefore, neither a census nor a probability sample survey is feasible. The non-probability sample survey applied for these variables is based on all financial statements available for the reference year at the time of the survey.
4. Additional information used in the survey strategy: The distortion present in the sample is at least partially corrected by using an auxiliary variable known for each stratum and that is correlated with the variables being estimated. This variable, the total number of employees, is used to perform a calibration in the estimation procedure.

Estimation design

1. Calculation method for population estimate: Estimation of totals for the variables object of NPS is carried out by stratum, where strata are defined by 1) enterprises size classes and by 2) NUTS2. The size classes are in line with Eurostat size classes, as recommended by the Commission implementing Decision (EU) 2022/39, that is: 1) Enterprises with <=10 employees (seg 1); 2) Enterprises with 11-49 employees (seg 2); 3) Enterprises with 50-249 employees (seg 3); 4) Enterprises with >=250 employees (seg 4). The estimation of totals by NUTS2 levels is due to specific national needs (as specified in Text Box 7.1). For confidentiality reasons, cluster of size classes and/or of NUTS2 is applied, if needed. As the probability distribution of the sample is not known, the estimation of the total is obtained assuming a simple random sampling, as reported in the Handbook on 'Methodologies on sampling designs and estimation methods for fleet and aquaculture economic data collection' (https://datacollection.jrc.ec.europa.eu/documents/d/dcf/methodology-handbook-deliverable-2-1), with a calibration based on the number of employees. By reporting sampling data to the universe using the two distinct stratifications (by size-classes and by NUTS2), estimates of the national total of the variables are aligned, in terms of magnitude, but not perfectly equal. To avoid this discrepancy, estimates obtained by NUTS2 are "adjusted" by means of a correction factor derived from estimates by size-classes (the stratification recommended by EUMAP).
2. Calculation method for derived data: The allocation of primary data from balance sheets to EUMAP variables needs preliminary elaborations based on integration with additional data (e.g., Eurostat data or data from interviews). Details are reported in the methodological document stored on the DCF national website. Additional information on energy consumption and on the share of turnover attributable to fish processing activities on the total turnover will be sourced from interviews.
3. Nonresponse handling: As data comes from administrative sources, the case of non-response is not foreseen.

Error checks

For data obtained directly by estimation on financial statements, large errors are not expected.
The control and validation of the collected data will be based on the analysis of historical series trends and on the calculation of average operating parameters per enterprise. The quality of data collected by means of NPS will be ensured by applying sound statistical approaches and providing data on coverage rates and coefficient of variation

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NITRA created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology of the Italian data collection for the fish processing sector is available at https://dcf-italia.cnr.it/#/documenti/linee-guida.

Revision

Social variables are collected every three years. Along the period of this Work Plan, data for the reference year 2026 will be collected. Taking into account that a NPS is applied, the planned sample size (table 7.1) could vary in line with changes in the population over the programming period.

Confidentiality

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documented?
3. Are protocols to enforce confidentiality with external users in place and documented?
4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

In line with the Eurostat confidentiality policy, economic data is estimated but not provided in case of segment less than 3 units.

Sampling scheme identifier: 9Processing_IND_MBS

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.
'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.
'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.

Sector name(s): Socioeconomic data on the fish processing sector

Sampling scheme: Indirect survey (IND)

Variables: Weight of raw material by species

Supra region(s): Mediterranean Sea and Black Sea

Survey planning

The population consists of all active enterprises, registered in the national Italian Enterprises' register on 31 December of the reporting year, whose activity is defined according to the Eurostat definition under NACE Code 10.20.

Survey design and strategy

1. Data sources: Eurostat Prodcom statistics, EUMOFA conversione factor.
2. Sample sizes: Not applicable.
3. Survey methods: The estimation of the data on raw materials by volume for the years 2025-2027 refers to the methodological approach used in the previous programming period (2022-2024). The approach consists of indirect estimation based on the use of conversion factors (source: EUMOFA) applied to the volume of production expressed by Eurostat Prodcom statistics.
4. Additional information used in the survey strategy: no additional information is used.

Estimation design

1. Calculation method for population estimate: The methodology is based on an 'inverse' approach: starting from the final production of the sector, the raw material introduced into the production cycle is traced back through the use of appropriate live weight conversion factors (EUMOFA sources) applied to the different types of goods produced as output (Eurostat/Prodcom data). Prodcom titles are are consistent with the NACE classification, thus allowing the identification of the reference population, relevant to the survey, and ensuring the comparability of production data (raw material in volume) with economic data (e.g. revenues and costs in values).
2. Calculation method for derived data: Not applicable.
3. Nonresponse handling: Not applicable.

Error checks

The control and validation of the collected data will be based on the cross check of data with external sources.

Data storage and documentation

1. Data storage: Data are stored centrally into the national database FishDataNet, whose accessibility is limited. Furthermore, data are stored locally, into the database NITRA created and maintained by the institute in charge of the data collection.
2. Documentation: The methodology is described in the technical reports provided by the institute responsible for the implementation of the task.

Revision
The methodological approach could be subject to revision in order to take further into account RCGEcon recommendation
Confidentiality
1. Are procedures for confidential data handling in place and documented? 2. Are protocols to enforce confidentiality between DCF partners in place and documented? 3. Are protocols to enforce confidentiality with external users in place and documented? 4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation. No issues.