



UNIONE EUROPEA



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

Italy Annual Report on data collection in the fisheries and aquaculture sectors

2023

Version 3

Rome, 26th June 2024

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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.

Outline the general framework of the national data collection programme in relation to the relevant sections of the EU MAP. If applicable, indicate major methodological changes in approach compared to previous year(s), and to which section(s) they apply.

Give full name, acronym and contact details of all institutes that contribute to the data collection activities, and describe briefly their role in the work plan.

Provide a link to the national data collection website, if there is one.

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 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/> <https://dcf-italia.cnr.it/>

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/> <https://dcf-italia.cnr.it/>

(max. 1000 words)

Text Box 1a: Test studies description

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

1. Aim of the test study

2. Duration of the test study

3. Methodology and expected outcomes of the test study

(max 900 words per study)

Brief description of the results (including deviations from the plan and justifications as to why if this was the case).

Achievement of the original expected outcomes of the study and justification if this was not the case.

No specific test studies were presented in the WP

Incorporation of study results into regular sampling by the Member State.

(max. 900 words per study)

Text Box 1b: Other data collection activities

General comment: Use this text box to provide information on other data collection activities that relate to your EMFAF operational programme and need to be included in the work plan and the annual report. Describe activities that are funded by the DCF but fulfil objectives under other EMFAF priorities, like marine knowledge, or activities funded by the DCF, but without a direct link to the EU MAP specific requirements or WP template tables, like freshwater fisheries. You can also include one-off specific studies for a particular end-user need that do not enter the regular data collection.

1. Aim of the data collection activity

Support the operation and functioning of the RCG's Secretariat for a fluent regional coordination of data collection activities.

2. Duration of the data collection activity

01/01/2023 – 31/12/2025

3. Methodology and expected outcomes of the data collection activity

The Secretariat's organizational structure has been set up and pilot tested throughout the SecWeb project. The key functions of the RCG's Secretariat have been determined in close collaboration with all RCGs, in particular with RCG and Intersessional Subgroups (ISSGs) chairs. A business model has been developed. In addition, good practices in communication within and among the RCGs have been promoted and installed. The overall capacity to reach out to a wider public and increase the visibility of the work and output of the RCGs has been boosted with the development of a dedicated website and the consolidation of a visual identity.

RCG chairs and the RCG's network in general have acknowledged the added value of having an RCG's Secretariat to the overall aim of improving data collection activities.

Based on SecWeb project outputs the proposed data collection activity will connect the whole RCG network and stakeholders to work together on common goals. The Secretariat provides fluent administrative and coordination support for more efficient regional coordination liberating national experts involved in data collection activities from heavy burden administrative tasks.

Overall expected outcomes:

A full-time dedicated Secretariat support service for the RCGs enables a consistent approach to administering RCG activities, facilitates communication, and enhances the intersessional work, supporting also the work of sub-groups.

A dynamic and permanently updated website will be kept available including as features:

- Integration – allowing seamless synchronization with third-party information needs and requests.
- Responsive display – to serve content across multiple devices, screens, and browsers.
- User experience- maintaining a satisfactory user experience throughout the website sections.
- Accessibility – To any interested visitor in a user-friendly way across the website sections.
- Retention- keeping visitors coming back to the website.
- Links to relevant restricted access sites and virtual environments.

The Visual identity for the RCGs is increasingly consolidated and visibility and understanding of the work by the RCGs is enhanced for the relevant stakeholder groups.

A regularly updated Stakeholders' database improves the communication function among the RCGs' experts and the stakeholders' community.

Internal communication protocols and help-desk in place makes it easier for any new comer to efficiently join, adopt responsibilities, and contribute to the RCGs objectives and work commitments.

The public description of the secretariat functions, operational working protocols and commitments will build trust and enhance the whole network transparency and accountability.

(max 900 words per activity)

Brief description of the results (including deviations from the plan and justifications as to why if this was the case).

Achievement of the original expected outcomes of the study and justification if this was not the case.

Incorporation of study results into regular sampling by the Member State.

During 2023 the RCGs Secretariat services and tools were financed by a short-term/low value contract by the individual Member States (23 out of 26 MS) together with a European Commission service contract running from the end of August 2023 to end of February 2024. These contracts enabled the full-scale operation of the RCGs Secretariat along the year (from March 2023 until Feb 2024). The pan regional ISSG National Correspondents continued the discussions on how to implement the long-term stabilization of the services and tools and ran several consultations with the MS. A main conclusion from these, is the fact that the administrative procedures at national level are a continuous and complex constraint for some of the MS. Further discussions on the long-term funding scenarios are planned during 2024. The objective is to develop and implement the long-term funding solution for the RCGs Secretariat and the tools, while simultaneously, a suitable approach needs to be found to keep the services and tools working continuously to guarantee the support to the RCGs and the LM

(max. 900 words per study)

SECTION 2: BIOLOGICAL DATA

Text Box 2.1: List of required species/stocks

Region: MEDITERRANEAN AND BLACK SEA

RFMO: GFCM

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(a) of the EU MAP Delegated Decision annex. This text box applies to the annual report and complements Table 2.1.

Deviations from the work plan

List the deviations (if any) in the achieved data collection (lengths only) compared to what was planned. The general reasons for deviations from the work plan in terms of planned vs. achieved data collection should be summarised in this section, while detailed comments on deviations on particular species/stocks should be included in the 'AR comments' column in Table 2.1.

In 2023, the DCF programme in Italy experienced a major problem as it was not covered by a contract for the first 3 quarters of the year. In fact, the contract between the Italian administration (Ministry MASAF) and the scientific consortium (RTI) involved in the collection of data on the fisheries sectors was only officially re-established in the last quarter of the year. Moreover final registration and approval of the contract was granted only on 16th of December 2023.

The lack of a contract (which was interrupted at the end of July 2022) resulted in a significant reduction in the sampling programme, particularly in field activities such as biological sampling and surveys.

Italy was able to cover about 37% of the total planned sampling, with different percentages depending on GSA and métier.

However, discrepancies between planned and achieved samples are highlighted, even if they can vary on a stock/métier basis. Indeed, according to different area/GSA the research institutions involved in the data collection could or couldn't be able to be going on with the activities after the end of the official contract (31st of July 2022). Some residual funds available in research institutions have been used in continuing the samples activities. Moreover, we have to highlight the fact that after the end of the legal framework with the Ministry has been almost impossible to go on board to carry out the planned samples on the sea (Maritime authorities cannot give researchers the permission to go on board of commercial vessel without any official legal statement).

Considering the budgetary problem, the PSU were planned to sample as much as possible the métiers, mainly targeting the species under EU and GFCM Management Plans (e.g. WestMedMAp, Adriatic demersal and small pelagic MAP). In terms of quarter coverage, the samples were collected at different intensities throughout the year, so that data are be available at year or quarter level for MEDBS data call.

For some stocks data were not collected because of fishery occurs only in inland waters (*Anguilla Anguilla*); a low occurrence in the catch (*Carcharhinidae*, *sharks*, *rays and large pelagics* – for which the total annual landings is less than 200 tonnes): it is an opportunistic sampling; the stop to the project activities excluded the bulk of the fishing season and it was not possible to sample properly.

For further details see “Technical document DCF-Italy 2023”.

For the other variables collected in the DCF programme (e.g. landings, effort, socio-economic, recreational, etc.), as these data do not require specific time bound field activities, they should be sufficient to ensure that the dedicated data calls are answered.

Actions to avoid deviations

Describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

The main issue in the performance of the Italian Work Plan in 2023 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

In October of 2023, the new Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium (RTI)) in order to guarantee the financing, management and the cooperation

regarding the DCF activities for next 48 months. This contract was definitively approved in mid-December 2023.

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

RFMO: ICCAT

Deviations from the work plan

List the deviations (if any) in the achieved data collection (lengths only) compared to what was planned.

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Italy was able to cover about 37% of the total planned sampling, with different percentages depending on GSA and métier.

However, discrepancies between planned and achieved samples are highlighted, even if they can vary on a stock/métier basis. Indeed, according to different area/GSA the research institutions involved in the data collection could or couldn't be able to be going on with the activities after the end of the official contract (31st of July 2022). Some residual funds available in research institutions have been used in continuing the samples activities. Moreover, we have to highlight the fact that after the end of the legal framework with the Ministry has been almost impossible to go on board to carry out the planned samples on the sea (Maritime authorities cannot give researchers the permission to go on board of commercial vessel without any official legal statement).

Considering the budgetary problem, the PSU were planned to sample as much as possible the métiers, mainly targeting the species under EU and GFCM Management Plans (e.g. WestMedMAP, Adriatic demersal and small pelagic MAP). In terms of quarter coverage, the samples were collected at different intensities throughout the year, so that data are be available at year or quarter level for MEDBS data call.

For some stocks data were not collected because of fishery occurs only in inland waters (*Anguilla Anguilla*); a low occurrence in the catch (*Carcharhinidae*, *sharks*, *rays and large pelagics* – for which the total annual landings is less than 200 tonnes): it is an opportunistic sampling; the stop to the project activities excluded the bulk of the fishing season and it was not possible to sample properly.

For further details see “Technical document DCF-Italy 2023”.

For the other variables collected in the DCF programme (e.g. landings, effort, socio-economic, recreational, etc.), as these data do not require specific time bound field activities, they should be sufficient to ensure that the dedicated data calls are answered.

Actions to avoid deviations

Describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

The main issue in the performance of the Italian Work Plan in 2023 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

In October of 2023, the new Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium (RTI)) in order to guarantee the financing, management and the cooperation regarding the DCF activities for next 48 months. This contract was definitively approved in mid-December 2023.

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

Text Box 2.2: Planning of sampling for biological variables

Region: MEDITERRANEAN AND BLACK SEA

RFMO: GFCM

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(a) of the EU MAP Delegated Decision annex. This text box applies to the annual report and complements Table 2.2.

Deviations from the work plan

List the deviations (if any) in the achieved collection of biological data (other than lengths), compared to what was planned.

The general reasons for deviations from the work plan in terms of planned vs. achieved data collection should be summarised in this section, while detailed comments on deviations on particular species/stocks should be included in the 'AR comments' column in Table 2.2.

As regards the table 2.2, in 2023 all the planned samples were generally achieved while several cases oversamples occurred. Many samples have been collected in the period September-December 2023. An additional small number of samples has been collected in the period January-August 2023 not covered by the contract. Indeed, the samplings carried out also in this period allowed to collect biological data (other than the sizes) in all periods of the year. This is of fundamental importance to obtain a complete picture of the biological cycle of the species to be monitored. However, due to administrative issues the sampling design was interrupted and/or discontinuous, and it resulted in several under-sampling for some stocks.

Actions to avoid deviations.

Describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

The main issue in the performance of the Italian Work Plan in 2022 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

The main issue in the performance of the Italian Work Plan in 2022 and 2023 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

At the end of 2023, the new Specific Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium) in order to guarantee the financing, management and the cooperation regarding the DCF activities for 2024 and following years (*One text box of max. 1 000 words per region/RFMO/RFO/IO*)

RFMO: ICCAT

Deviations from the work plan

List the deviations (if any) in the achieved collection of biological data (other than lengths), compared to what was planned.

The general reasons for deviations from the work plan in terms of planned vs. achieved data collection should be summarised in this section, while detailed comments on deviations on particular species/stocks should be included in the 'AR comments' column in Table 2.2.

As regards the table 2.2, in 2023 all the planned samples were generally achieved while several cases oversamples occurred. Many samples have been collected in the period September-December 2023. An additional small number of samples has been collected in the period January-August 2023 not covered by the contract. Indeed, the samplings carried out also in this period allowed to collect biological data (other than the sizes) in all periods of the year. This is of fundamental importance to obtain a complete picture of the biological cycle of the species to be monitored. However, due to administrative issues the sampling design was interrupted and/or discontinuous, and it resulted in several under-sampling for some stocks.

Actions to avoid deviations.

Describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

The main issue in the performance of the Italian Work Plan in 2022 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

The main issue in the performance of the Italian Work Plan in 2022 and 2023 was the lack of a contractual framework between the National Administration and the group of institutions performing the Data Collection. The contract ended on 31 of July 2022 and it was not resumed for administrative reasons.

At the end of 2023, the new Specific Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium) in order to guarantee the financing, management and the cooperation regarding the DCF activities for 2024 and following years (*One text box of max. 1 000 words per region/RFMO/RFO/IO*)

Text Box 2.3: Diadromous species data collection in freshwater

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.

Method selected for collecting data.

Describe briefly the method for collecting the variables presented in Table 2.3. Detailed descriptions are to be included in Annex 1.1. If variables are not directly collected but estimated the method of estimation should be described here.

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 2.2. 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, 15 individuals per stage per EMU, for a total of 270 individuals.

In 2022-2024 the following biological variables will be collected: developmental stage (every year) and length and weight (every year) animals, sex and age every three years, starting in year 2022.

Data Collection from *eel research surveys in relevant habitats* in order to collect data on recruitment, standing stock and escapement will also be carried out in the 9 EMUs. The selection of the relevant site for the monitoring of all the three eel life stages will be agreed with Regional Administrations involved in Eel Management Plans under Council Regulation (EC) No 1100/2007, possibly coincident with the site for biological sampling of catches in order to complete information for specific eel local stocks in selected sites. The implementation of fishery independent monitoring for each eel life stage, in one water body in each EMU, will foresee this minimum scheme each year (see Table 2.3. Diadromous):

Recruitment (glass eel stage)

In the selected water body (habitat type: lagoon or river, depending on the EMU) for 7 days/month (new moon) installation overnights of 1 fyke-net along the tidal channel (lagoon) or river bank for during the migration period (4 months):

November- February), and the registration of presences (N) for each night. CPUE (number of recruits/gear/week) will be calculated for the whole 4-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 (fyke nets + a boundary net arranged to enclose an area of 1 ha) (if the body water selected is a lagoon) or a fyke-net chain (row of 10 nets along the river bank, if the water body selected is a river) for 7 days/month during trophic movements period (April- July), and the daily registration of catches, (N or Weight, depending on the amount of capture) each day. CPUE (number of individuals/gear/week) will be calculated for the whole 4-months sampling.

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 body water selected is a lagoon, or along the river bank, if the water body selected is a river) for 7days/month during downstream migration (October-January), and the daily registration of catches, (N or Weight, depending on the amount of capture) each day. CPUE (number of individuals/gear/week) will be calculated for the whole 4- months sampling.

Definitive implementation of the monitoring scheme and of collected variables and data processing will take place in the first months of 2022, 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).

(max 250 words per species and area)

Were the planned numbers achieved? Yes/ No

No

If the answer is No, explain why not, and what measures were taken to avoid non-conformity.

Data Collection from eel research surveys in relevant habitats

Monitoring was foreseen in 3 EMU/year, thus covering the 9 EMU of Italy in three years- in the relevant seasonal period for each life stage. Due to the stop of the project activities none of the 3 planned surveys has been carried out in 2023.

Monitoring surveys for glass eel, yellow eel and silver eel were originally foreseen in 3 EMU: 2 on the Adriatic side (Lombardy and Friuli Venezia Giulia), and one on the Tyrrhenian side (Tuscany), thus covering the 9 EMU of Italy in three years, in the relevant seasonal period for each life stage. Due to the stop of the project activities none of the 3 EMU could be covered by the planned surveys. Thanks to the collaboration with some regional administrations, it has been possible to collect surveys data (according to the protocol) in 2 alternative EMU: Lazio for the Tyrrhenian side and Emilia Romagna for the Adriatic side. In this way although uncomplete, the two main fresh-water basin (East Adriatic, West Tyrrhenian) of Italy have been covered. Moreover, for Lazio we were able to sample both a river (Tiber) and a lagoon (Fogliano lagoon in Circeo). In this way two different basins (Adriatic and Tyrrhenian) and two different habitats (river and lagoon) were covered.

Biological Data Collection from eel commercial fisheries

Planned minimum number was not 270 per life stage, but in total. Therefore, planned minimum number was 135 yellow and 135 silver (15 yellow and 15 silver from each EMU=total 135 yellow + 135 silver). See detailed explanation in WP comments in column U. Full number not achieved because Eel fishing closure 1 January- 30 June for commercial fisheries (DM n. 0152580 13/3/2023) has limited the possibility to obtain samples during open season in some EMU.

(max 250 words per species and area)

Text Box 2.4: Recreational Fisheries

Region: MEDITERRANEAN AND BLACK SEA

RFMO: GFCM

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.

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

The activity of the recreational fisheries surveys will be carried out with two different subprojects:

- This project will consider the species identified in the gfcM Report of the first meeting of the wg on recr.fish. (WGRF) 2021 appendix 3 and 5. The exact list of species is not yet consolidated, and will be definitively decided during 2022, after the end of the pilot studies currently still ongoing and the following consultations.

The first project foresees:

- A telephone survey will be carried out to update the universe of fishermen and collect general information. This universe will be the base to extract a panel of fishermen for the following phase of logbook survey. The telephone survey will be carried every three years;
- A logbook survey will be carried out every year on the identified panel of anglers. The variables requested concern catches per species (retained or released) area and type of fishing. The result will be used for the estimate of total catch per species.

The second project will consider the large pelagic species, as according to the ICCAT list of elasmobranchs and highly migratory species and it will foresee:

- An annual census of the boats potentially practising the large pelagics recreational fishing. This census will be considered as the estimate of the universe of anglers, since this type of fishing can only be practised by boat;
- During this activity a panel of anglers will be statistically identified. This panel will be asked for a logbook survey. The variables requested concern catches per species (retained or released) area and type of fishing. This information will be used for the estimate of total catch per species. The official register of catches for bluefin tuna and swordfish will also be considered.

Regarding *Anguilla anguilla* 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 EMU

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

(max 900 words per region)

Deviations from the work plan

List the deviations (if any) in the achieved data collection, compared to what was planned in the work plan and explain the reasons for the deviations.

Regarding Recreational fishery for eel, this fishery was stopped by the government for the year 2023.

Indeed, catch recording scheme type could not be carried out due to a Total closure 1st January- 31st December 2023 for eel recreational fisheries (DM n. 0152580 13/3/2023). Only a preliminary survey to confirm implementation of the closure imposed by DM 0152580 at the regional (EMU level) has been carried out, by interacting with the Regional Administrations.

Action to avoid deviations

Describe the actions that will be considered/have been taken to avoid the deviations in the future and when these actions are expected to produce results.

No deviations

(max 900 words per region)

ICCAT

Deviations from the work plan

List the deviations (if any) in the achieved data collection, compared to what was planned in the work plan and explain the reasons for the deviations.

Large pelagics

No deviations

Action to avoid deviations

Describe the actions that will be considered/have been taken to avoid the deviations in the future and when these actions are expected to produce results.

No deviations

(max 900 words per region)

Text Box 2.5: Sampling plan description for biological data

MEDITERRANEAN AND BLACK SEA

GFCM

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.

This text box is complementary to information on the sampling schemes provided in the quality document (Annex 1.1). It serves to highlight additional information on sampling schemes and sampling frames that the Member State considers useful to understand the sampling design planned for the region and the implementation year(s).

Additional information on sampling schemes

You 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.

Additional description of sampling frames

You may add a 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 the columns 'Sampling frame identifier'

and 'Sampling frame description' of Table 2.5, and in the same order (Sampling frame identifier + Sampling frame description).

In order to ensure congruency along the data series, Italy will report data by a combination of metiers and GSA (sampling frame identifier) as recommended by RCMMed&BS-LP 2016, and, as defined by EUMAP under Chapter II (data requirements), paragraph 2.1 a) requesting catch data at the aggregation level 6 (corresponding to mesh size). All the collection and analysis of data (for the metier selected by the ranking system) will be performed and reported at GSA level (<http://www.fao.org/gfcm/data/map-geographical-subareas/en/>), with the exception of the metier targeting large pelagic which will be analysed and reported at national level. Sampling will be performed, on the metier selected through the ranking system procedure, in order to evaluate length distribution of species in the catches, and the volume of discards. Discards evaluation will be carried out only for the selected metier as agreed both during the RCMMed&BS-LP 2016 (see Annex IX of the mentioned report), and during the RCGMed&BS, 2019.

Regional Coordination Group for the Mediterranean and Black Sea (see also RCMMed&BS-LP, 2016) agreed that stratification of stocks for data collection should follow the structure followed in the previous years (Group 1, 2 and 3 species, EU Decision 93/2010), which is also in line with the approach, and the spatial stratification, as identified in the adopted GFCM-Data Collection Reference Framework (DCRF manual v. 21.1 - GFCM, 2018).

Average landing data and share in EU landing have been obtained from the data sharing during the RCGMed&BS, 2021 meeting.

Length data should be collected and reported yearly for all the three identified group of species. Other biological parameters (i.e. sex, age, maturity, weight) shall be collected and reported yearly for Group 1 species (as in GFCM-DCRF Appendix A.1), whereas, for all Group 2 species sex, age, maturity and weight, should be reported every three years (as requested by GFCM-DCRF Appendix A.2).

The number of demersal and small pelagic individuals are decided by the MS based on previous sampling knowledge. Starting from 2023, the optimum number of individuals required for biological data sampling will be revised and calculated using the tool devised by the project STREAM and presented during the last Regional Coordination Group (RCGMed&BS, 2019).

Concerning large pelagic species, length data will be reported yearly. Sex, age, maturity and weight will be reported in accordance with the end-user needs and coordinated at regional level (Table 2.2). With regard to the number of individuals to be sampled for large pelagic (Table 2.2), the same number of individuals, as regionally agreed by each country for the previous triennial period, is to be retained.

Regarding sharks, it should be underlined that most of the proposed species reported both in Tables of the EUMAP (COM Delegated Decision, 2021/1167), and in the Appendix A.3 of the GFCM-DCRF (GFCM, 2018), are rare and with a sporadic and not confirmed presence in the Mediterranean area. For this reason, it has been decided that no planned minimum number and sampling strategy can be associated to the collection of "sharks" species. Following the above mentioned issues all the elasmobranch species (with the exceptions of the 3 species reported further down) have not been listed in the tables 2.1 of the working plan, because for those species it will not be possible to draw a sampling plan. However, all elasmobranchs species, whenever they occur during the biological sampling, will be sampled concurrently for length and then reported in the Annual Report. Biological information, such as sex, age, weight and maturity, will be also collected and reported when available, through the research surveys at sea.

As mentioned before, in the Italian WP, only for the four most abundant elasmobranchs species, *Raja clavata* (GSA 9, 11 and 16), *R. asterias* (GSA 9 and 11), *R. miraletus* (GSA 18) as commercial species, there will be a biological sampling programme associated (see 2.1 and 2.2).

Table 2.5

In order to identify the metiers to be sampled, the ranking system at GSA level, as described in the GFCM-DCRF (2016), has been applied. For sampling purpose, only the major metier at GSA level (Sampling frame

identifier) selected by the ranking systems will be therefore considered. Official statistics (landings, effort and value data) have been used to apply the ranking system. Sampling strategies in each GSA will be a mix of concurrent sampling by scientific observer on shore and by scientific observer at sea (see annex 1.1).

The target population for the reference year will be the mean number of fishing trips by métier of the last three years (2018-2020) for which data are available. Fishing trip will be considered equal to fishing day. The frame population is a subsample of the target population: it will be a selection of fishing trips, mainly on spatial (GSA) and time stratification basis (quarterly) with measurements of the composition of the catch in order to detect seasonal differences in the demographic structure and composition of the landings for different métiers. 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) and the landings.

With regard to discards sampling, Italy will follow the discard sampling program as recommended by the Regional Coordination Group (see Annex IX of the RCMed&BS-LP 2016, and the updated table in the last RCMed&BS, 2019).

Finally, concerning the establishment of a recovery plan on Mediterranean swordfish, the workplan already includes the collection of adequate scientific information for highly migratory pelagic species in the Mediterranean. The recovery plan on Mediterranean swordfish requests the collection of additional specific information related to fishing activities and specific data on the catches, in the smallest time-area possible.

The sampling schemes already planned will be adapted in order to reach the level of details requested by the recovery plan on Mediterranean swordfish.

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, is provided under the following link <https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici>.

REGION: Other regions

The Italian Fleet Register includes 8 vessels with a license to operate outside the Mediterranean waters. The activity of these vessels depends on fisheries agreements in place and may vary every year.

Till now there has been no requirement for Italy to sample these two fisheries, as recommended in Regional Coordination Group Long Distance Fishery (RCG LDF) reports. Available landing and effort data of these vessels operating both in the CECAF and IOTC areas will be sent to the RCG LDF. Up to now, no biological sampling has been implemented for those vessels, they only have a national obligation to fulfil logbooks. Italy will be considered further recommendations of the RCG long distance fisheries.

IOTC

The Italian fisheries activities in IOTC area regards only one vessel that is currently included in the framework contract of the France fleet. Italy is carrying on negotiations with the France administration in order to provide and transmit data in the format requested by IOTC. Negotiations are being finalized. Data should be available to be transmitted starting from 2023.

CECAF

The Italian vessels in CECAF waters operate according to a SFPA agreement with Guinea Bissau. On the contrary, Italian fishing activities in Guinea Conakry are currently at a standstill. In February 2022, a scientific evaluation, demonstrating the sustainability of the planned fishing operations" (Article 17c under direct authorisations) was transmitted to European Commission (EC) but it was not deemed suitable enough. The Italian administration is currently in the process of revising the scientific assessment, aim to restore fishing activities in Guinea Conakry.

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

Sampling scheme name (or identifier): SciObsOnShore

Deviations from the work plan

List deviations (if any) in the achieved data collection compared to what was planned in the work plan and explain the reasons for the deviations.

General issues

Table 2.5 is referring to the activities related to the biological sampling on resources caught during commercial fishing activities for small pelagic, demersal and large pelagic.

In 2023, the DCF programme in Italy experienced a major problem as it was not covered by a contract for the first 3 quarters of the year. In fact, the contract between the Italian administration (Ministry MASAF) and the scientific consortium (RTI) involved in the collection of data on the fisheries sectors was only officially re-established in the last quarter of the year.

However, discrepancies between planned and achieved samples must be highlighted, even if they can vary on a stock/metier basis. Indeed, according to different area/GSA the research institute involved in the data collection could or couldn't be able to be going on with the activities after the end of the official contract (31st of July). As mentioned above some residual funds available in some research institute have been used in continuing the samples activities. Moreover, after the end of the legal framework with the Ministry has been almost impossible to go on board to carry out the planned samples on the sea (Maritime authorities cannot give researchers the permission to go on board of commercial vessel without any official legal statement).

Actions to avoid deviations

Describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

In October of 2023, the new Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium (RTI)) in order to guarantee the financing, management and the cooperation regarding the DCF activities for next 48 months. (One text box of max. 1 000 words per region/RFMO/RFO/IO) Moreover, all the specific deviations registered in 2023 in terms of inconsistency with the WP 2022-2024, will be overcome and emended during the WP 2025-2027.

Sampling scheme name (or identifier): SciObsAtSea

Deviations from the work plan

List deviations (if any) in the achieved data collection compared to what was planned in the work plan and explain the reasons for the deviations.

Table 2.5 is referring to the activities related to the biological sampling on resources caught during commercial fishing activities for small pelagic, demersal and large pelagic.

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

Text Box 2.6: Research surveys at sea

Region: MEDITERRANEAN AND BLACK SEA

RFMO: GFCM

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.

(Use one text box per survey)

Name of the research survey

MEDITS

1. Objectives of the survey

The MEDITS programme aims to conduct co-ordinated bottom-trawl surveys Mediterranean. This bottom trawl survey derives from an EU project started in 1994 at European Mediterranean level (Bertrand et al., 2002), in which all the participants use the same gear, the same sampling protocol and the same methodology. The challenge of MEDITS survey is to provide data useful for describing and quantifying changes in the fish populations, through indices of demography, mortality, spatial occupation, biological traits, thus contributing to the routine stock assessments and the development of management advice tools. One survey should be carried out every year, during spring and beginning of summer.

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

Overall, MEDITS data shall be processed and analysed in line with the data collected according to the common protocol (MEDITS-Handbook. Version n. 9, 2017), to produce information (i.e. population distribution, abundance, size composition etc.), on benthic and demersal species found in an area with a depth ranging from 0 to 800 m within the seas adjacent to Italy (in Fig. a the 7 GSA are reported). The working zone (on the continental shelves and along the upper slopes) has been adopted to cover at best the distribution areas 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 should be carried out during each annual survey (Fig.a).

In order to improve the quality of the MEDITS data and the consistency of the information collected a

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). Regarding the data storage, the FishTrawl webapp (a software system for data input, analysis, import/export, storage, checks), designed for scientific trawl survey data as MEDITS was completed, tested and it is available for common use.

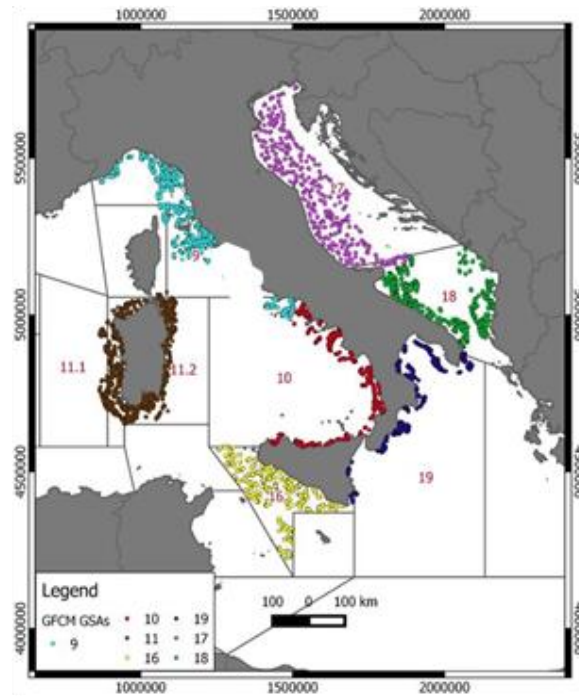


Figure a) MEDITS fishing hauls foreseen in the 7 Italian GSA.

3. For internationally coordinated surveys, describe the participating Member States/vessels.

Since 2001, the European countries bordering the Mediterranean and Black Sea are obliged to carry out Medits survey yearly in the framework of the EU data collection regulation. 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). 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).

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.
Not relevant

Name of the research survey

MEDIAS

1. Objectives of the survey

The Pan Mediterranean 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.

2. Description of the survey design and methods used in the survey for each type of data collection

as listed in Table 2.6 for this specific survey

This research will be based on common protocol (MEDIAS-Handbook, 2019) 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 echograms scrutinization.

Further, for an ecosystem-based approach environmental monitoring will be performed, thus CTD oceanographic data (temperature, salinity, fluorescence and dissolved oxygen) will be recorded.

3. For internationally coordinated surveys, describe the participating Member States/vessels.

The MEDIAS acoustic surveys, performed in spring-summer, should cover a series of areas in the Mediterranean EU MS (Spain, France, Croatia, Italy, Slovenia and Greece) with a standardised methodology. Italy will cover:

- a) Adriatic Sea (GSA 17 and 18; corresponding to FAO Sub-Divisions 37.2.1 and 37.2.2 – Fig. b)
- b) Tyrrhenian Sea (GSA 9 and 10; corresponding to FAO Sub-Division 37.1.3 – Fig. b)
- c) Sicilian Channel (GSA 16; corresponding to FAO Sub-Division 37.2.2 – Fig. b)

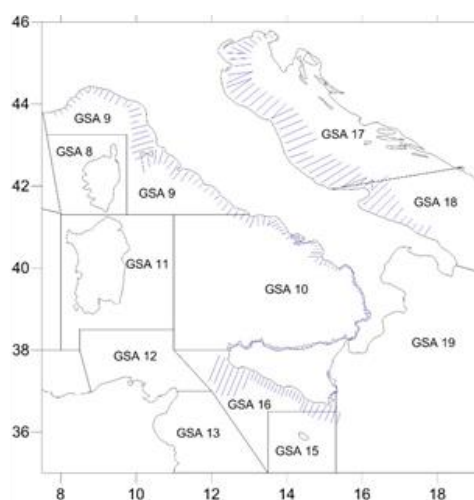


Figure b) MEDIAS Acoustic surveys design in the 5 Italian GSAs

Concerning the MEDIAS database, in 2016 the Steering Committee has revised the format of existing databases related to acoustic surveys per study area and MEDIAS partners (AcousMed project, Contract MARE/2009/09 SI2). The aim is the proposal of a common database that will serve the needs of acoustic surveys in order to fulfil DCF requirements and standardize the output of surveys estimations.

Concerning the availability of data, the reference period will be one year. For MEDIAS surveys, as agreed at regional level (RCMMed&BS Final Report, 2016), the results pertaining to the reference period (n) will be ready at the end of March of the year after (n+1). The geographical areas that will be covered by the MEDIAS surveys and the respective days at sea per participating countries are

reported in Table 1 of the Medias manual (MEDIAS-Handbook, 2019).

- 4 Where applicable, provide more details on the type of participation and/or threshold agreement applied.

Not relevant

Name of the research survey

SOLEMON

1. Objectives of the survey

Solea solea is an important resource in the GFCM area. About 22% of the GFCM landings of soles comes from the Adriatic Sea. In the GSA 17 soles are targeted by “rapido” trawl and set nets, that amount to around 500 boats, for a total of 1,600 fishermen and an annual value of landings of around 40 million Euros.

The main survey objectives are:

- a) 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.
 - b) Pursuing the studies on the ecosystem impact of the “rapido” trawl fishery.
 - c) 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 to the requirement of the implementation of the MFSD (DIRECTIVE 2008/56/EC).
2. Description of the survey design and methods used in the survey for each type of data collection as listed in Table 2.6 for this specific survey

The survey should cover sole presence within the GSA 17 that, according to the genetic information pertains as a single stock (Figure c).

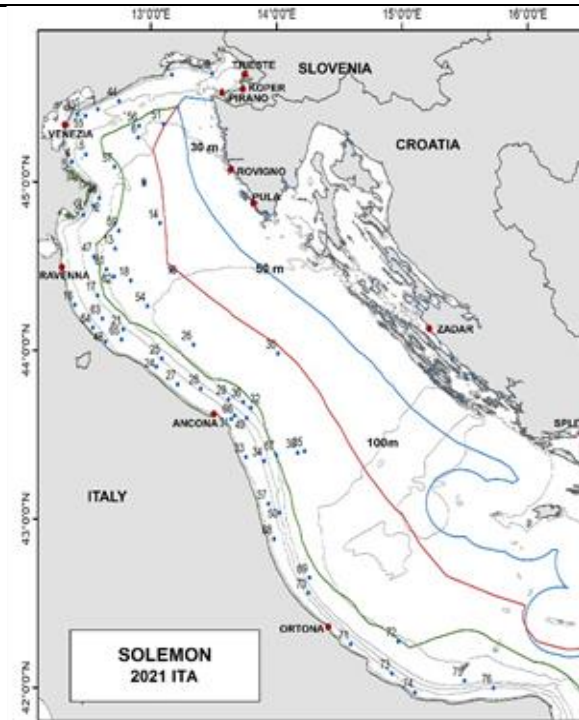


Figure c) The Italian SoleMon fishing hauls foreseen in the Adriatic Sea (GSA 17)

All this holds also for benthic fish and shellfish of commercial interest, including rays and other selachians, since EU greatly focuses on such vulnerable resources. Survey should be carried out based on the protocol used since 2005 (SoleMon, 2019; Survey – Handbook Version 2019) and utilising the same gear. The gear is a modified beam trawl named as “rapido” trawl and should be appositely planned to fish on different types of bottom. The research vessel should utilize two gears simultaneously in each haul.

3 For internationally coordinated surveys, describe the participating Member States/vessels. Data will be shared in WGs, both at EU and Mediterranean level, and with all Adriatic member States through common database AtrIS. Targets number of hauls, by area and participating countries, are reported in the Solemon Handbook (SoleMon, 2019).

4 Where applicable, provide more details on the type of participation and/or threshold agreement applied.

Not relevant

Name of the 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 and the EC Regulation (EC) 2016/2376 (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 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. Additionally, biological information (e.g. weight, age etc.) will be collected and reported every three years for the striped venus, which has a minimum conservation reference size (22 mm).

2. Description of the survey design 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 protocol used at national scale. 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.

The commercial hydraulic dredge used to harvest *C. gallina*, and *E. minor*, are similar and will comprise a rectangular cage 3 m wide, weighing 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. Surveys for *C. gallina* will be carried out in the 13 marine compartments in the Adriatic Sea (GSA 17 and GSA18; see Fig. d). Each local compartment will be surveyed along regularly spaced transect perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). Within each transect, sampling stations will be settled at fixed distances (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*). The catch of striped clam will be conveyed to a mechanical vibrating sieve, composed of a sieving plane (19 mm hole diameter). All striped venus clams retained by the sieve will be weighed. For each sample, length frequency distribution of clams will be studied. One of the purposes of biological sampling is to study the fraction of juvenile clams. To sample the juveniles striped venus, a net bag sampler with small meshes will be mounted inside the dredge. Size frequency distribution of this sample will be also recorded.

1. For internationally coordinated surveys, describe the participating Member States/vessels.
Not relevant
2. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

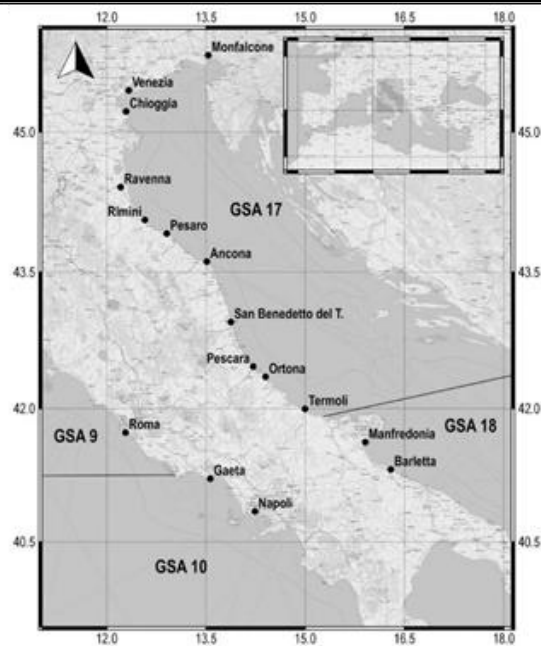


Figure d) DRES survey

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 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 protocol used on a national scale. 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://dcfitalia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA). Commercial vessels will be used to conduct the surveys. The commercial hydraulic dredge used to harvest *E. minor*, are similar and will comprise a rectangular cage 3 m wide, weighing 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. Surveys for *E. minor* will be conducted in 3 marine compartments (Roma, Gaeta, Napoli; GSA 9 and GSA 10, see Fig. d). Each compartment will be surveyed along regularly spaced transect perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). Within each transect line, sampling stations will be settled at fixed distances/depths (0.25 nautical miles; every 2 m of depth) until the presence of clams will be detected (usually at a distance corresponding to 6-8 m for *E. minor*). In each sampling station, an area of around 300 m² will be surveyed (width of cage 3 m x 100 m of tow). At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. All specimens retained by the sieve will be weighed. For each sample, length frequency distribution of razor clam will be studied. To sample the juveniles razor clams, a net bag sampler with small meshes will be mounted inside the dredge. Size frequency distribution of this sample will be also recorded.

3. For internationally coordinated surveys, describe the participating Member States/vessels.

Not relevant

4. Where applicable, provide more details on the type of participation and/or threshold agreement applied.

Not relevant

DRES Callista (non-mandatory survey)

1. Objectives of the survey The survey aims to assess the spatial distribution, the abundance and

the main biometric measurements (length and weight) of *Callista chione* in the n the North Adriatic (GSA 17) where the species is a main target of the hydraulic dredges.

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

The recent surveys have been conducted following operating standard protocol used on a national scale. 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 https://dcfitalia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA). Commercial vessels will be used to conduct the surveys. Surveys for *Callista chione* clam will be conducted in 3 marine compartments (Monfalcone, Venezia and Chioggia; GSA 17, see Fig. d). Each compartment will be surveyed along regularly spaced transect lines perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). For *Callista chione* clam sampling stations are chosen at random inside traditional fishing grounds. In each sampling station, an area of around 300 m² will be surveyed (width of cage 3 m x 100 m of tow). At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. To sample juveniles, a net bag sampler with small meshes will be mounted inside the dredge. All specimens retained by the sieve will be weighed and measured.

3. For internationally coordinated surveys, describe the participating Member States/vessels. Not relevant 4. Where applicable, provide more details on the type of participation and/or threshold agreement applied. Not relevant (max. 450 words per survey) (max. 450 words per survey) (max. 450 words per survey)

(max 450 words per survey)

5

SOLEMON

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MEDITS

5. For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

<https://www.sibm.it/SITO%20MEDITS/principalemedits.htm>

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

The MEDITS programme aims to conduct co-ordinated bottom-trawl surveys Mediterranean. This bottom trawl survey derives from an EU project started in 1994 at European Mediterranean level (Bertrand et al., 2002), in which all the participants use the same gear, the same sampling protocol and the same methodology. The challenge of MEDITS survey is to provide data useful for describing and quantifying changes in the fish populations, through indices of demography, mortality, spatial occupation, biological traits, thus contributing to the routine stock assessments and the development of management advice tools. One survey should be carried out every year, during spring and beginning of summer.

Overall, MEDITS data shall be processed and analysed in line with the data collected according to the common protocol (MEDITS-Handbook. Version n. 9, 2017), to produce information (i.e. population distribution, abundance, size composition etc.), on benthic and demersal species found in an area with a depth ranging from 0 to 800 m within the seas adjacent to Italy (in Fig. a the 7 GSA are reported). The working zone (on the continental shelves and along the upper slopes) has been adopted to cover at best the distribution areas 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 should be carried out during each annual survey (Fig.a).

In order to improve the quality of the MEDITS data and the consistency of the information collected a 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). Regarding the data storage, the FishTrawl webapp (a software system for data input, analysis, import/export, storage, checks), designed for scientific trawl survey data as MEDITS was completed, tested and it is available for common use.

The MEDITS trawl survey is aimed at estimating the distribution and abundance of all the species caught and the size structure of 52 species of commercial interest and 32 species of elasmobranchs. The identification of all the organisms with a dimension greater than 1 cm allows to characterize the benthic communities. The methodologies adopted are such as to make the results comparable with the similar surveys carried out in the past years in the same area, as well as in the areas of other European countries of the Mediterranean. The results of the MEDITS surveys are used since several years for:

- the estimation of the biological parameters of the different species;
- the estimation of the spatial distribution of the different species;
- the location of essential fish habitats (nursery and spawning areas) and sensitive habitats useful for spatial management;
- the study of fish communities (e.g. structure, functional groups, diversity) useful for implementing the ecosystem approach;
- the application of stock assessment models and tuning indices to be used in more or less complex stock assessment models.

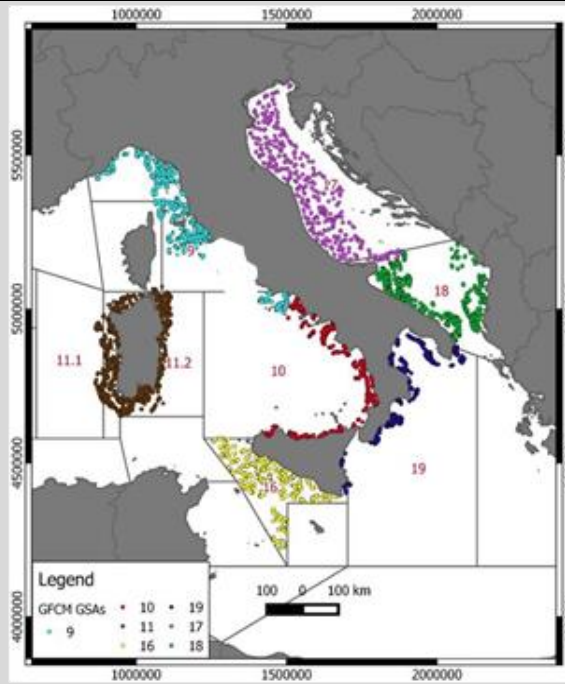


Figure a) MEDITS fishing hauls foreseen in the 7 Italian GSA.

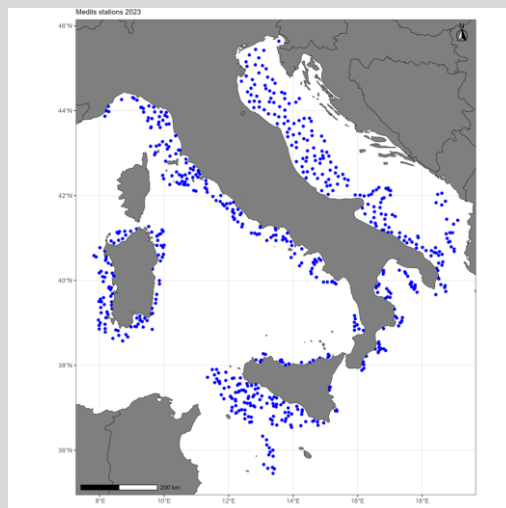


Figure 5: Achieved stations performed by MEDITS survey in 2023.

7. Extended comments

Extended AR comments can be placed under this section.

The MEDITS survey has been carried out partially within the official time period. For the already mentioned contractual problems it was carried out outside the expected time frame in GSA 9, GSA 10 and GSA 16. In 2023, the number of days at sea achieved represented more than 70% of the planned ones (140 vs 196) while almost the total sampling activities planned were achieved. For the mentioned administrative problems, the survey started in late in some GSAs with consequences in terms of bad weather conditions

MEDIAS

5. For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

The report of MEDIAS 2023 is available at the following link:

<http://www.medias-project.eu/medias/website/meetingrep.html>

All the MEDIAS Coordination meeting reports are available at the following link:

<http://www.medias-project.eu/medias/website/meetingrep.html>

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

The results of the MEDIAS surveys have been sent to different WGs (e.g. GFCM stock assessment working groups) and data call (e.g. STECF-JRC) and have been used for the assessment of the abundance and spatial distribution of small pelagic species around the Italian seas. MEDIAS survey results in terms of abundance, biomass and abundance-biomass at age group were used as a tuning index during the WGSASP – Stock assessment of Small Pelagic species of GFCM for *E. encrasicolus* and *S. pilchardus*. The results of these models are useful for the provision of management advice.

The Pan Mediterranean 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.

This research will be based on common protocol (MEDIAS-Handbook, 2019) 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 echograms scrutinization.

Further, for an ecosystem-based approach environmental monitoring will be performed, thus CTD oceanographic data (temperature, salinity, fluorescence and dissolved oxygen) will be recorded.

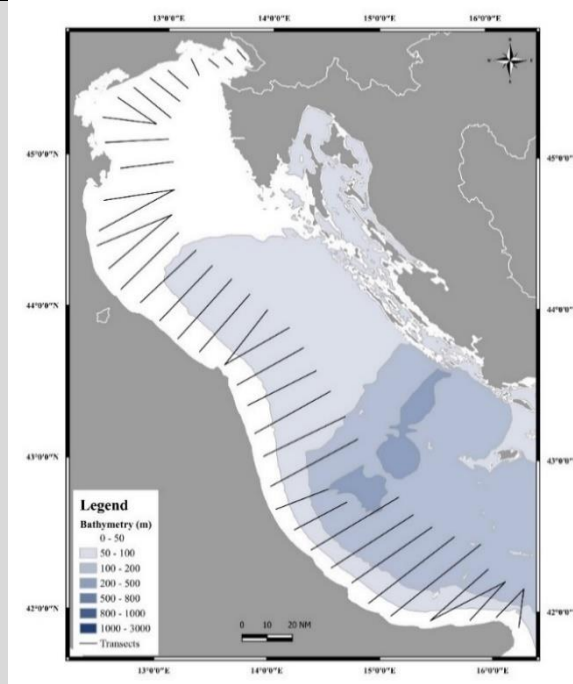


Figure 1. Transect performed by MEDIAS survey in GSA 17 (28 of May 2023 – 27 of June 2023).

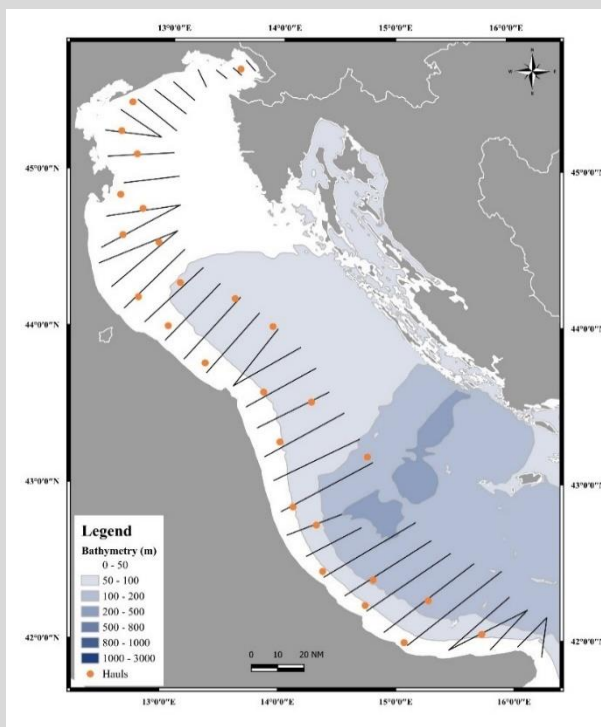


Figure 2. Biological sampling performed by MEDIAS survey in GSA 17, 2023

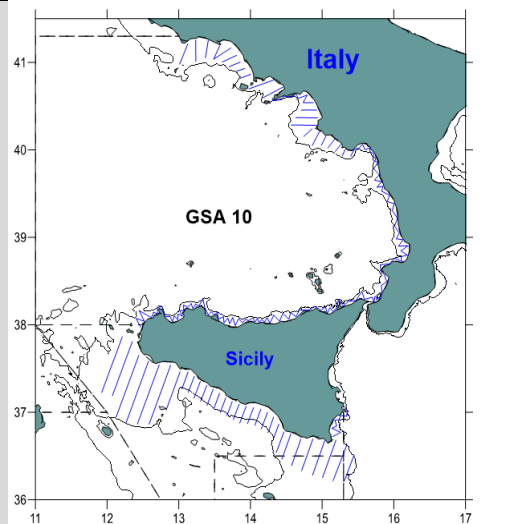
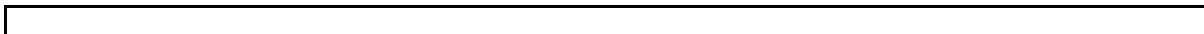


Figure 3: biological sampling performed by MEDIAS survey in GSA 10, 2023

7. Extended comments

Extended AR comments can be placed under this section.

In 2023, the acoustic surveys were carried out in the period foreseen by the National Program Work Plan and according to the MEDIAS protocol (MEDIAS Handbook, 2021). Survey completely achieved in GSAs 10 16 and 17 in sampling effort, timing and survey area, number of days and area covered in terms of nautical miles surveyed. GSA 9 and 18 were not covered due to problems with ship availability and lack of a contractual framework.



SOLEMON

5. For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

ICES WGBEAM 2023 Report

ices-library.figshare.com/articles/report/Working_Group_on_Beam_Trawl_Surveys_WGBEAM_/22726112

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

The results of the SOLEMON surveys are mainly used for stock assessment of different target species in GSA17 in the context of GFCM WGSAD (<https://www.fao.org/gfcm/technical-meetings/detail/en/c/1635049/>).

The common sole data are also investigated during the annual meeting of ICES WGBEAM and uploaded in the DATRAS database (DATRAS (ices.dk)).

Moreover, in the framework of an ecosystem integrated approach, survey data are elaborated to support the implementation of the MSFD (DIRECTIVE 2008/56/EC).

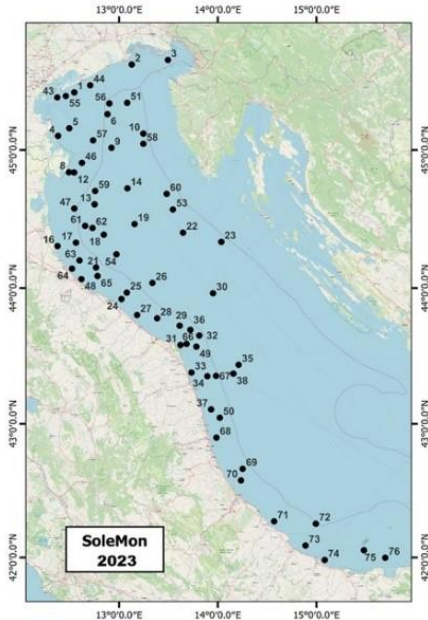


Figure 4: Achieved stations performed by SOLEMON survey in GSA 17, 2023.

7. Extended comments

Extended AR comments can be placed under this section.

Survey completely achieved in GSA 17 with 66 hauls between 11 and 30 November 2023. The places of landings were Chioggia, Rimini and Ancona. All data related to the navigation (volume of fish caught, gears used, sorting of the fish species and marine litter) have been recorded. During the lab analysis, all the species caught have been weighted and measured while for the target species have been also surveyed sex, maturity and otolith (mainly for sole species). All the data collected have been uploaded in the DB TRUST (Trawls surveys database system). During the meeting WGBEAM ICES (19-22 March 2024) data has been presented while caught data of sole fish has been uploaded in the DB DATRAS

DRES Chamelea (non-mandatory survey)

5. For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

NA

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

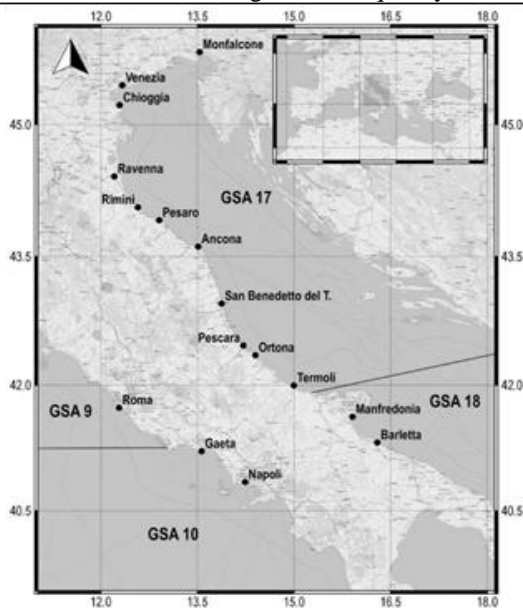
The results are mainly used to elaborate abundance and biomass estimates as well as for stock assessment estimates (only for *C.gallina* so far). Results are provided to national and international data calls and used to draft the Italian National Management Plans for Hydraulic Dredges and the National Discard Plan for the Venus clam stock.

Information from surveys is used for stock assessment and to define the reference points of both National management plan and discard plan for the Clam fisheries.

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 and the EC Regulation (EC) 2016/2376 (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 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. Additionally, biological information (e.g. weight, age etc.) will be collected and reported every three years for the striped venus, which has a minimum conservation reference size (22 mm).

The more recent surveys have been conducted following the standard protocol used at national scale. 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.

The commercial hydraulic dredge used to harvest *C. gallina*, and *E. minor*, are similar and will comprise a rectangular cage 3 m wide, weighing 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. Surveys for *C. gallina* will be carried out in the 13 marine compartments in the Adriatic Sea (GSA 17 and GSA18; see Fig. d). Each local compartment will be surveyed along regularly spaced transect perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). Within each transect, sampling stations will be settled at fixed distances (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*). The catch of striped clam will be conveyed to a mechanical vibrating sieve, composed of a sieving plane (19 mm hole diameter). All striped venus clams retained by the sieve will be weighed. For each sample, length frequency distribution of clams will be studied. One of the purposes of biological sampling is to study the fraction of juvenile clams. To sample the juveniles striped venus, a net bag sampler with small meshes will be mounted inside the dredge. Size frequency distribution of this sample will be also recorded.



7. Extended comments

Extended AR comments can be placed under this section.

In 2023 for survey DRES Chamelea the number of days at sea achieved was much lower than the ones planned (31 vs 54 days) despite the number of sampling activities achieved was instead higher than the planned ones (639 vs 595 hauls). This misalignment was due to two factors:

- 1) The number of transects conducted in 3 out of the 13 Districts monitored was much higher than planned ones (i.e. Survey DRES manual sets transects spaced 2 NM each, with a mean number of transects per District equal to 10. However, being the shoreline length much longer for Monfalcone, Chioggia and Venezia districts a total of 15, 16 and 26 transects were conducted for each district, respectively, explaining the higher number of sampling activities achieved.
- 2) The number of fishing days required to conduct the whole Chamelea DRES survey was overestimated, thus explaining the lower number of fishing days employed. All the scheduled surveys at sea were conducted by 23/08/2023. As regards UNIMAR, the survey has not been carried out within the official time period

The DRES_Callista survey was conducted by CNR-IRBIM in Monfalcone, Chioggia and Venezia Districts. However, the survey was concluded in a minor number of days at sea (3) than the ones planned (12), and the number of fishing activities was also revised so that a total of 28 hauls were conducted instead of the 60 planned in the WP 2022-2024.

DRES Ensis (non-mandatory survey)

For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

NA

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

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.

The more recent surveys have been conducted following the standard protocol used on a national scale. 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://dcfitalia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA). Commercial vessels will be used to conduct the surveys. The commercial hydraulic dredge used to harvest *E. minor*, are similar and will comprise a rectangular cage 3 m wide, weighing 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. Surveys for *E. minor* will be conducted in 3 marine compartments (Roma, Gaeta, Napoli; GSA 9 and GSA 10, see Fig. d). Each compartment will be surveyed along regularly spaced transect perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). Within each transect line, sampling stations will be settled at fixed distances/depths (0.25 nautical miles; every 2 m of depth) until the presence of clams will be detected (usually at a distance corresponding to 6-8 m for *E. minor*). In each sampling station, an area of around 300 m² will be surveyed (width of cage 3 m x 100 m of tow). At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. All specimens retained by the sieve will be weighed. For each sample, length frequency distribution of razor clam will be studied. To sample the juveniles razor clams, a net bag sampler with small meshes will be mounted inside the dredge. Size frequency distribution of this sample will be also recorded.

7. Extended comments

Extended AR comments can be placed under this section.

NA

DRES CALLISTA (non mandatory survey)

5. For internationally coordinated surveys, provide a link to the latest meeting report of the coordination group.

Provide a link to the meeting report from the body coordinating the survey (ICES, MEDITS coordination group, MEDIAS coordination group, etc.). For surveys that are not internationally coordinated, refer to any status report (e.g. Cruise report).

NA

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context.

If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.

The survey aims to assess the spatial distribution, the abundance and the main biometric measurements (length and weight) of *Callista chione* in the North Adriatic (GSA 17) where the species is a main target of the hydraulic dredges.

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

The recent surveys have been conducted following operating standard protocol used on a national scale. 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

https://dcfitalia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA). Commercial vessels will be used to conduct the surveys. Surveys for *Callista chione* clam will be conducted in 3 marine compartments (Monfalcone, Venezia and Chioggia; GSA 17, see Fig. d). Each compartment will be surveyed along regularly spaced transect lines perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). For *Callista chione* clam sampling stations are chosen at random inside traditional fishing grounds. In each sampling station, an area of around 300 m² will be surveyed (width of cage 3 m x 100 m of tow). At the end of the tow, the cage will be hauled, and its contents spilled into a collecting box. To sample juveniles, a net bag sampler with small meshes will be mounted inside the dredge. All specimens retained by the sieve will be weighed and measured.

7. Extended comments

Extended AR comments can be placed under this section.

NA

SECTION 3: FISHING ACTIVITY DATA

Text Box 3.1: Fishing activity variables data collection strategy

General comment: This text box fulfils Article 5 (2)(c), Article 6 (3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 3.1 of the EU MAP Delegated Decision annex. It is intended to describe the method used to derive estimates on representative samples where data are not to be recorded under the Control Regulation (EC) No 1224/2009 or where data collected under Regulation (EC) No 1224/2009 are not at the right aggregation level for the intended scientific use. Text Box 3.1 should be filled only in case complementary data collection is planned

Explain the reasons for implementing complementary data collection.

Information on the sampling schemes is available in the quality document (Annex 1.2). However, the Member State is invited to highlight additional information here on sampling schemes and sampling frames deemed necessary to understand the actual sampling design planned for the implementation year(s).

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

- Fleet LoA > 10 meters: control Regulations (logbook)
- Fleet LoA < 10 meters: PSS - Probability Sample Survey
- Dredgers: control Regulations (logbook)

Data from the control regulation will be used as source for collecting fishing activity variables for fleets with LoA>10 m. The fleet with LoA< 10 meters is exempt from compliance with the control regulation and therefore is subject to probability sample survey (PSS).

Below 10 meters the vessels are exempt from regulation control, so the data source will only be sample survey. The target population (below LoA 10m) entered in the Common Fleet Register (CFR) equal to 7589 vessels. The sampling is stratified, therefore the fishing vessels are divided into homogenous groups based on the criteria established in Table 8 of the EU MAP Delegated Decision annex. However, for the purpose of more efficient spatial coverage, stratification at the Nuts 2 area level is envisaged.

In view of the multiplicity of variables to be estimated, present in Tab 6 of the EU MAP Delegated Decision annex, the optimum sample number per stratum is defined according to Bethel's procedure (1989), the vessels are selected using PPS methodology (Probability Proportional to Size) and, to be more exact, using the algorithm of Hanurav-Vijayan. To obtain an estimate of totals per stratum the Horvitz-Thomson estimator is used, while the Sen-Yates-Grundy formula is used to estimate the relative sampling error. However, the final phase to estimate the universe carryed-over is preceded by a set of control and correction procedures of sample data to guarantee results with a determined level of quality.

The data reported and transmitted under Regulation (EC) No 1224/2009, logbooks, sales notes and positional data, such as VMS data, shall be made available in primary form. Then check and validate on a monthly basis.

The survey sample is based on the daily collection of data on a random sample of boats.

Data will be collected on a daily basis. As scheduled by the sample survey, the collectors store data by means of specific web software, and send them every week to the control center.

The software is structured sequentially with filters aimed at avoiding partial or inconsistent answers during the compilation of the questionnaire, in addition, control procedures and filters have been implemented, in order to minimize the non-sample errors possible in the typing phase of the data.

The data will be subject to control and, if necessary, corrections in order to guarantee final results adhering to reality in compliance with the quality levels prescribed by the national and European statistical bodies.

The controls are based on the time series of data already validated for previous years and on parameter acceptance grids (e.g. length of vessel networks; number of hooks; price per species, etc.) implemented in the database.

Dredgers fleet. The units engaged in fishing for clams (*Chamelea gallina*, striped venus), based on specific ministerial decrees are associated in the Management Consortium established on the basis of single maritime districts. Consortia, managed on a monthly basis, both the activity level and the maximum amount withdrawable per day of fishing. Considering that the vessels are required to make the declarations provided for by the control regulation and by the Consortia, the sample survey is considered useless

(max. 900 words)

Deviations from the work plan

List the changes from the work plan (if any) and explain the reasons.

A complementary data collection program was implemented to cover the portion of the fishing vessels exempted from the regulation control.

The following categories of fleet were evaluated in this context:

- Fleet < 10 meters: PSS - Probability Sample Survey

Following the sampling design of the previous years it was applied the Bethel procedure using the software MAUSS. The Bethel procedure allows to improve the quality of the data analysis allocating units to minimize cost under a defined level of error.

The sample size was 1226 vessels. The Bethel algorithm was applied to identify the number of units for each defined strata. The strata were identify considering 3 parameters: fishing technique, Region and LFT respectively.

To identify the samples for each strata the quantity of species caught in the previous years (2020,2021) was used to better discriminate the number of vessels to monitor. Indeed, without this approach, due to the large number of species caught by this fleet segment the sample size will not respect the budget constrain.

Specifically, were considered only the species that accounted at least for the 2% of the total amount of catches of the previous years.

Through this procedure were identified 14 species accounting for the 53.4 % of the total amount of catches.

The application of Bethel algorithm allowed to identify the samples size by a fixed error.

Considering the number of vessels of each stratum the value of the number of unit for each strata was identify in order to consider the low level of error identified by the Bethel algorithm but, in some cases where the number of vessels for the stratum was high it was considered an error constrain higher (reducing the sample size for the stratum respect to the low value of the error constrain) in order to not overcome the budget constrain (max sample size).

Finally the number of unit for each strata (sample size) is reported in the following table:

Fishing Technique	Region	LFT	Nr vessels	Sample size	Error constrain	% stratum covered
PGP	Abruzzo	< 06 m	168	26	3%	15.48%
PGP	Abruzzo	>= 06 m < 10 m	115	21	4%	18.26%
Fishing Technique	Region	LFT	Nr vessels	Sample size	Error constrain	% stratum covered
PGP	Calabria ionica	< 06 m	138	26	5%	18.84%
PGP	Calabria ionica	>= 06 m < 10 m	144	28	5%	19.44%
PGP	Calabria tirrenica	< 06 m	83	9	4%	10.84%
PGP	Calabria tirrenica	>= 06 m < 10 m	87	18	4%	20.69%
PGP	Campania	< 06 m	158	28	5%	17.72%
PGP	Campania	>= 06 m < 10 m	644	81	6%	12.58%
PGP	Emilia Romagna	< 06 m	99	13	4%	13.13%
PGP	Emilia Romagna	>= 06 m < 10 m	228	42	4%	18.42%
PGP	Friuli Venezia Giulia	< 06 m	53	15	4%	28.30%
PGP	Friuli Venezia Giulia	>= 06 m < 10 m	189	67	4%	35.45%
PGP	Lazio nord	< 06 m	40	5	4%	12.50%
PGP	Lazio nord	>= 06 m < 10 m	181	31	5%	17.13%
PGP	Lazio sud	< 06 m	21	2	4%	9.52%
PGP	Lazio sud	>= 06 m < 10 m	144	34	5%	23.61%
PGP	Liguria	< 06 m	100	19	3%	19.00%
PGP	Liguria	>= 06 m < 10 m	249	62	5%	24.90%

PGP	Marche	< 06 m	137	18	4%	13.14%
PGP	Marche	>= 06 m < 10 m	197	35	5%	17.77%
PGP	Molise	< 06 m	13	4	4%	30.77%
PGP	Molise	>= 06 m < 10 m	31	7	4%	22.58%
PGP	Puglia ionica	< 06 m	79	13	5%	16.46%
PGP	Puglia ionica	>= 06 m < 10 m	222	45	5%	20.27%
PGP	Puglia nord	< 06 m	174	31	4%	17.82%
PGP	Puglia nord	>= 06 m < 10 m	312	34	5%	10.90%
PGP	Sardegna	< 06 m	321	36	6%	11.21%
PGP	Sardegna	>= 06 m < 10 m	781	102	6%	13.06%
PGP	Sicilia est	< 06 m	97	23	4%	23.71%
PGP	Sicilia est	>= 06 m < 10 m	140	27	4%	19.29%
PGP	Sicilia nord	< 06 m	257	34	6%	13.23%
PGP	Sicilia nord	>= 06 m < 10 m	478	77	6%	16.11%
PGP	Sicilia sud	< 06 m	146	25	5%	17.12%
PGP	Sicilia sud	>= 06 m < 10 m	421	85	5%	20.19%
PGP	Toscana	< 06 m	115	14	4%	12.17%
PGP	Toscana	>= 06 m < 10 m	291	36	4%	12.37%
PGP	Veneto	< 06 m	84	18	4%	21.43%
PGP	Veneto	>= 06 m < 10 m	181	20	4%	11.05%
PS	Calabria tirrenica	>= 06 m < 10 m	65	11	5%	16.92%
PS	Campania	>= 06 m < 10 m	3	2	3%	66.67%
PS	Sicilia nord	>= 06 m < 10 m	16	2	3%	12.50%
ITALY			7402	1226		16.56%

The implemented sample design entirely followed the proposal submitted and approved by the Commission.

Actions to avoid deviations

Briefly describe the actions that will be considered / have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

NA

(max. 900 words)

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

General comment: This text box fulfils Article 5(2)(c), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 3.2 of the EU MAP Delegated Decision annex. It is intended to describe the methods and data sources used to estimate fishing capacity, effort and landings data.

Describe data collection of inland eel commercial fisheries landings, effort and capacity. List or describe, for instance, the number of fishing entities, fishing methods, and the associated units used.

Eel commercial fisheries in inland waters area highly heterogeneous being spatially dispersed in different habitats in many sites, and relying on many different fishing gears and typologies.

The Italian Eel Management Plan (EMP) was approved in July 2011. Commercial eel fishing in Italy concerns the three stages, i.e. glass eel, yellow eel and silver eel. Glass eel fishing is carried out only on a commercial basis, in the coastal and estuarine waters of many Regions, and is therefore of mixed relevance, of the Ministry of Agricultural, Food and Forestry Policies for the waters that fall within coastal and estuarine waters (up to the salinity limit in the estuary), and of the regional Administrations, for the upper sections of estuaries, that fall within continental waters. Following the implementation of the Italian EMP, only some residual glass eel fisheries are still allowed, those under the central Administration, and in two Regions, Tuscany and Latium. All other regions have closed all glass eel fisheries. Fishing for yellow and silver eel is carried out only in inland waters (rivers and lakes) and lagoons, therefore falling under the regional administrations.

The spatial scale to which reference is made for the fishery-related data collection of eel fisheries Italy is framed within the context of the above mentioned National Eel Management Plan (EMP) under EC Regulation 1100/2007. Within the EMP, the basic unit corresponding to the Eel Management Unit (EMU) coincides with the Administrative Region. Only nine regions out of the 20 Italian regions, have adhered to the Eel Management Plan, with their specific Regional Management Plans coordinated with the National EMP. These are: Lombardy, Veneto, Friuli Venezia Giulia, Emilia Romagna, Tuscany, Lazio, Umbria, Puglia and Sardinia. They are therefore the Eel Management Units identified under EC Regulation 1100/2007. The other 11 regions have on the other hand closed all eel fisheries in their water basins, both commercial and recreational, with specific regional decrees.

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.

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.

Data Collection for eel commercial fisheries shall be carried out in the 9 Eel Management Units, and will be structured as follows (see Table 2.2. 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, 15 individuals per stage per EMU, for a total of 270 individuals.

In 2022-2024 the following biological variables will be collected: developmental stage (every year) and length and weight (every year) animals, sex and age every three years, starting in year 2023

(max. 900 words)

Deviations from the work plan

List the changes from the work plan (if any) and explain the reasons.

For commercial eel fisheries (both yellow and silver eel), planned minimum number was not 270 per life stage, but in total. Therefore, planned minimum number was 135 yellow and 135 silver (15 yellow and 15 silver from each EMU=total 135 yellow + 135 silver. Full number not achieved because the Eel fishing closure 1 January-30 June for commercial fisheries (DM n. 0152580 13/3/2023) has limited the possibility to obtain samples during open season in some EMU.

Actions to avoid deviations

Briefly describe the actions that will be considered / have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

In October of 2023, the new Contract Agreement has been signed by the respective parties (Italian Ministry and Italian DCF Consortium (RTI)) in order to guarantee the financing, management and the cooperation regarding the DCF activities for next 48 months. This contract was definitively approved in mid-December 2023

(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 SEA

RFMO: GFCM

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.

This text box is complementary to information on the sampling schemes provided in the quality document (Annex 1.1). It serves to highlight information on sampling schemes and sampling frames related to incidental catches of sensitive species.

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 (Protected, Endangered and Threatened – PET) species) will be recorded through the SciObsAtSea sampling scheme, additional information will be collected through dedicated interviews on shore in the framework of the SciObsOnShore sampling scheme

- *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 taken into account.

- *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, it has been defined that pelagic trawls, demersal trawls, bottom and surface longlines and fixed nets are considered to be 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, taking into account the results of pilot studies. Particular attention will be given to pelagic trawlers on the base of Reg (UE) 2019/124.

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

For on board sampling of pelagic trawls, bottom trawls, purse seiners for large pelagics, and beam trawls, bycatch is recorded by scientific observers for the entire duration of the fishing. Additionally, a questionnaire will be developed and used in interviews to obtain information about bycatch at landing sites for pelagic trawls, demersal trawls, beam trawls, gillnets, trammel nets, and bottom and surface longlines. Fishermen will be asked to provide information about quantitative and qualitative structure of the bycatch. The scientific observer is requested to monitor all the bycatches during the entire fishing trip. Additionally, in the framework of the SciObsOnShore sampling scheme, to ensure data quality, observers are instructed to take photos of the haul at the opening of the cod-end before the shorting process begins, as well as photos of the specimens of rare species caught.

The PSU is the fishing trip. The on-board observers are instructed to check throughout the whole fishing operation for incidental by-catch of PET species and species indicating VMEs on the recorded fishing trips. As a result, the observation effort is calculated as the ratio between observed trips to total trips (total effort) per métier and GSA.

Particular attention is given to the monitoring of PET for pelagic trawlers through Scientific Observers at Sea, in observance of REGULATION (EU) 2019/1241 where a specific increase of the sampling effort is foreseen (see also annex 1.1)

- *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.

RCG MED & BS 2021 Recommendation 8: Agreement on methodology for data collection on incidental catch of vulnerable species on the following methodology:

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/>

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/>). In addition, the protocols are based on the findings and guidelines provided the EU regional grants MARE/2014/19 Med&BS and STREAM (<https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>, <https://datacollection.jrc.ec.europa.eu/mare-2016-22-strengthening-regional-cooperation>). 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 of these 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.

As indicated in Table 2.5 and presented in Annex 1.1, observation of PETS will be covered within the sampling scheme (along with quantification of PETS observation effort). Additional sampling effort will be deployed through interviews at landing points and self-sampling by fishers (by means of dedicated logbooks).

Data on the incidental bycatch of PET species will be recorded by trained fleet observers. In addition, data will be collected. 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 grant MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, <https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>).

For on board sampling, bycatch is recorded by scientific observers for the entire duration of the fishing. Additionally, a questionnaire will be used in interviews to obtain information about bycatch at landing sites. Fishers will be asked to provide information about quantitative and qualitative structure of the bycatch. The scientific observer is requested to monitor all the bycatches during the entire fishing trip. Additionally, to ensure data quality, observers are instructed to take photos of the haul at the opening of the cod-end before the sorting, as well as photos of the specimens of rare species.

Specific training has been and will continue to be provided to fleet observers and fishers involved in the self-sampling through logbooks. Identification guidelines were prepared by the EU regional grants MARE/2014/19 Med&BS and STREAM (<https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>, <https://datacollection.jrc.ec.europa.eu/mare-2016-22-strengthening-regional-cooperation>)

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).

Not applicable.

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

Results

Provide additional information, if available, in this text box. For example, summary information on the number of individuals recorded as bycaught per species, gear group and monitoring method with information about the state of the animals (i.e. were they released alive, dead, or collected for sampling).

Monitoring of incidental catches of PET species rely on scientific observers on board and interviews with fishermen conducted by scientific personnel. These observations can also be carried out through self-reporting when the involvement of fishermen is ensured and achieved with the distribution of logbooks to a representative sample of vessels.

This activity is partially included in the wider module of the biological sampling activities of commercial fisheries catches.

Despite the administrative problems that have affected the proper implementation of the national programme in 2023 (see the documentation provided by Italy), the monitoring of the PET has been carried out on several occasions, both on board (as planned) and through interviews with fishermen in the port of landing.

The main results are summarised below.

The four main faunistic groups were observed in the bycatch: Cetaceans, seabirds, sea turtles and elasmobranchs. However, incidental catches of cetaceans and seabirds were very rare, while higher numbers were observed for the other two groups.

In particular, for sea turtles, the main species observed was *Caretta caretta*, while for elasmobranchs, the main faunistic category observed was Rajidae (e.g. *Raja polistigma*, *R. brachiura*, etc.).

Fishing gears with a higher impact on PETs were trawlers (both demersal and pelagic), trammel nets and drifting longliners. Deviations from the work plan

The Member State shall list the deviations (if any) in the achieved data collection compared to what was planned in the work plan and explain the reasons for the deviations.

In 2023, the DCF programme in Italy experienced a major problem as it was not covered by a contract for the first 3 quarters of the year. In fact, the contract between the Italian administration (Ministry MASAF) and the scientific consortium (RTI) involved in the collection of data on the fisheries sectors was only officially re-established in

the last quarter of the year. Moreover final registration and approval of the contract was granted only on 16th of December 2023.

The lack of a contract (which was interrupted at the end of July 2022) resulted in a significant reduction in the sampling programme, particularly in field activities such as biological sampling and surveys.

Italy was able to cover about 37% of the total planned sampling, with different percentages depending on GSA and métier.

However, discrepancies between planned and achieved samples are highlighted, even if they can vary on a stock/métier basis. Indeed, according to different area/GSA the research institutions involved in the data collection could or couldn't be able to be going on with the activities after the end of the official contract (31st of July 2022). Some residual funds available in research institutions have been used in continuing the samples activities. Moreover, we have to highlight the fact that after the end of the legal framework with the Ministry has been almost impossible to go on board to carry out the planned samples on the sea (Maritime authorities can't give researches the permission in going on board of commercial vessel without any official legal statement).

Actions to avoid deviations

The Member State shall describe the actions that will be considered/have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

At the end of 2023, the new Framework Agreement has been signed by the respective parties (Italian Ministry and Italian DCF experts) in order to guarantee the financing, management and the cooperation regarding the DCF activities for next 48 months.

In general, during the 2023 samples have been collected for three out of four quarters.

The Work Plan 2025-2027 will emend the discrepancies

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

Text Box 4.3: Fisheries impact on marine habitats

General comment: This text box fulfils Article 5 paragraph 2(a) and 2(b), Article 6 paragraph 3(a), 3(b) and 3(c) of Regulation (EU) 2017/1004 and Chapter 2, section 4.2 of the EU MAP Delegated Decision annex. It contains information on additional studies on the fisheries impact on marine habitats.

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

study From 2022 to 2024

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)

Brief description of the results (including deviations from the plan and justifications as to why if this was the case).

ECOVMS

The systematic allocation of fishing effort, on a monthly basis, to the cells of the 3 × 3 Km grid defined within the National Plan for Data Collection was also carried out. All the indicators listed above were calculated and their trend over the reference year analyzed. Subsequently, the 30 × 30 nautical mile reference grid established by the General Fisheries Commission for the Mediterranean (GFCM)¹ was used to quantify the:

- Total monthly trawling effort in fishing hours per cell. This value, based on the analysis of the VMS data described above, was intended to capture only actual fishing effort, excluding navigation or other activities;
- The total monthly fishing effort in fishing days per cell. This value, based on the analysis of the VMS data described above, was intended to provide a more 'classic' measure of fishing effort.

Fishing effort was then calculated for each fleet unit v , for each grid cell c and for each month t . Thus, the total trawling effort on a monthly scale was estimated as:

Where $H_{t,c}$ is the total fishing effort in hours in cell c during month t , while $D_{t,c}$ is the total fishing effort in fishing days in cell c during month t considering the fleet composed of V fishing units. To simplify the analysis of the results, and to provide potentially useful evidence for management, each grid cell was uniquely associated with the main GSA in terms of spatial overlap. In this way, it was possible to obtain the values of $H_{t,c}$ and $D_{t,c}$ by summing the series of cells belonging to each GSA. At the end of this procedure, the monthly time series of the values of both $H_{t,c}$ and $D_{t,c}$ for each GSA were obtained.

A complete revision of the format in which the ecological pressure indicators calculated from the VMS and Logbook data are stored was completed. In order to have a more complete and detailed management of the ecological indicators listed above, a new structure of the Indicator Storage Table was defined for all available years (2006 to 2021).

No significant deviations from the schedule are to be reported. The acquisition of the VMS data and logbooks took place in good time. The interruption of activities at the end of July did not allow extended analyses of the historical series (2006 to 2021 inclusive) conducted in previous years. With the exception of estimating the fishing effort exerted by vessels not equipped with satellite tracking devices, all other aspects of the pilot study were systematically integrated into Module V of the National Program.

STOMACH CONTENTS COLLECTION AND ANALYSIS

The Hake stomach content samples have been planned to be collected during the research survey at sea (MEDITS) (see Table 4.1 of the 2022-2024 National Work Plan). Due to a misunderstanding in national coordination, in two GSAs the number of stomachs to be collected in the 2023 MEDITS survey was aligned with the lower number required by the draft MEDBS regional work plan. In 2024, the number of stomachs to be collected will be aligned with the NWP 2022-2024.

Achievement of the original expected outcomes and justification if this was not the case.

Due to a misunderstanding in national coordination, in two GSAs the number of stomachs to be collected in the 2023 MEDITS survey was aligned with the lower number required by the draft MEDBS regional work plan (N=490) instead of the 1050 planned in the NWP.

Follow-up to the activities (what are the next steps, how the results will be used).
In 2024 the planned number will be restored to N=1050 as stated in the NWP.

(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.

1. Description of clustering

In cases where a fleet segment has less than 10 vessels:

- (a) Clustering may be necessary in order to design the sampling plan and to report economic variables;*
- (b) Member States shall report which fleet segments have been grouped at the national level and shall justify the clustering on the basis of statistical analysis;*
- (c) In their annual report, Member States shall report the number of sampled vessels for each fleet segment regardless of any clustering made to collect or provide the data.”*

Clustering should be described, and information should be given on the segments that are clustered.

The Member State should distinguish between segments considered for clustering as follows:

- (a) Important segments with distinct characteristics;*
- (b) Segments similar to other segments;*
- (c) Non-important segments with distinct characteristics.*

Importance of fleet segments should be assessed in terms of landings (value and volume) and/or effort. Similarity should be demonstrated using expert knowledge on fishing patterns or on available data on landings and/or effort.

For each of the cases described, the Member State should apply the following approaches for clustering according to the different characteristics of fleet segments:

- (a) Important segments with distinct characteristics*
- (b) Such segments should not be clustered unless strictly necessary in data reporting for confidentiality reasons. Data should be separately collected for these segments and included in national totals (unless separate identification is then made possible as a consequence).*
- (c) Segments similar to other segments*
- (d) Such segments can be clustered for sampling purposes, as well as for confidentiality reasons. The segments merged should be selected according to criteria that should be fully explained and justified by the Member State. In particular, the approach to determine similarity should be clearly described by the Member State.*
- (e) Non-important segments with distinct characteristics*
- (f) Such segments can be clustered for sampling purposes, as well as for confidentiality reasons. These segments can be merged with other non-important segments. Clustering of these segments with other important segments should be avoided. The Member State should explain how the lower importance had been determined and for which reasons the clustered segments have been selected. Clusters should be named after the biggest segment in terms of number of vessels or economic significance.*

2. Description of activity indicator

If the Member State is using an activity indicator to divide the fleet segment into different activity levels, use 'L' for the low activity vessels and 'A' for the normal economic activity vessels. Please provide a description of the activity methodology used.

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

Describe and justify any deviations from variable definitions as listed in the 'EU MAP Guidance Document' on the DCF website.

In case the PIM is not used, explain and justify the application of alternative methods.

The fleet will be clustered into homogeneous groups of vessels as defined by table 5B of EUMAP, according to the prevalent fishing technique. A further segmentation of the fleet based on a geographical criterion (combinations of administrative region and FAO geographical sub-areas (GSA)) will be 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. Such a clustering scheme will be consistent with previous years and will be maintained constant over time. The software MAUSS-R Multivariate Allocation of Units in Sampling Surveys, developed by ISTAT (Italian National Institute of Statistics) will be used in order to identify sample size, to allocate them among strata and to minimize it according to maximum accepted sampling errors of target estimates for each stratum.

According to the different types of data collection used to collect the variables, different data sources will be taken into account, as following:

- Accounts will be used for financial position
- Logbook and questionnaires will be used for days at sea and landings;
- National statistics (official administrative records) will be used for reporting operating subsidies, subsidies on investments, income from leasing out quota or other fishing rights and lease/rental payments for quota or other fishing rights;
- Fleet Register will be used for the number of fishing enterprises and for variables related to the fleet (number of vessels, mean LOA of vessels, vessel's tonnage, etc.);
- Fleet register and ad hoc questionnaires will be used for estimating consumption of fixed capital and value of physical capital
- Ad hoc electronic questionnaires will be used to collect the rest of the variables.

The population will be all active and inactive vessels registered in the Union Fishing Fleet Register as defined in Commission Regulation (EC) No 26/2004 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.

Different methodologies and data sources will be used to collect the variables:

1. A probability sample survey (PSS) will be implemented to estimate the following variables:
 - Days at sea (LoA<10M);
 - Employment (by age, gender, level of education, nationality);
 - Energy consumption and energy costs;
 - FTE and FTEs by gender;
 - Gross value of landings (LoA<10M);
 - Investments in tangible assets, net;
 - Other income, variable costs and non-variable costs;
 - Paid labour;
 - Personnel costs;
 - Repair and maintenance costs;
 - Total hour worked per year;
 - Unpaid labour, unpaid labour by gender and value of unpaid labour.
2. A non-probability sample survey (NPS) will be implemented to estimate financial position;
3. Through census (C) will be collected subsidies and number of fishing enterprises, variables related to the fleet;
4. An indirect survey (IND) based on PIM (Perpetual Inventory Method) estimation will be implemented to estimate value of physical capital, consumption of fixed capital, value of quota and other fishing rights and total assets.

Primary data referred to year n will be collected in year $n+1$ through the sample survey and will be subjected to: a) a control process, b) correction of outliers and estimation of missing data, c) elaborations

for the estimation of the final variables.

Table 5.1 reports the segments that have been clustered. Clusters are named after the biggest segment in terms of number of vessels. Segments have been distinguished in: important segments with distinct characteristics; segments similar to other segments; non-important segments with distinct characteristics. Importance of fleet segments has been assessed in terms of landings (value and volume). Only “segments similar to other segments” have been clustered for sampling purposes. Similarity is explained in the following text using expert knowledge on fishing patterns and on available data on capacity structure.

The clustering of dredgers is justified by the fact that vessels are very specialised targeting clams and smooth-callista (*Venus gallina* and *Callista chione*) and they are homogenous in terms of size, gears and fishing practises. Vessels have an average LOA of 13.4 meters and 85% of them belong to the class 12-18 meters. Therefore, the split into the class <12 m and > 12 meters is not statistical reliable for this segment. Moreover, it is demonstrated that revenues are not correlated with the LOA of the vessels and this fact proves the high level of homogeneity of the vessels.

The segment “Vessels using hooks 18 - 24 m” has been clustered with the segment “Vessels using hooks 24 - 40 m” that is composed by only 2 vessels and the clustering is necessary in order to design the sampling plan. Vessels using polyvalent "passive" gears 12 - 18 m have been clustered with the 7 vessels belonging to the classes 18-24 m and 24-40 m in order to design the sampling plan.

(max. 900 words)

Deviations from the work plan

List the changes from the work plan (if any) and explain the reasons.

Compared to the WP 2022-2024, two additional clusters were defined: the segment “Beam trawlers 6–12 m”, which consists of just 3 vessels, was clustered with the segment “Beam trawlers 12–18 m”, while the segment “Pelagic trawlers 6–12 m”, which also consists of just 3 vessels, was clustered with the segment “Pelagic trawlers 12–18 m”. In both cases clustering was necessary in order to design the sampling plan.

Data on “Value of quotas and other fishing rights” was non estimated for inactive vessels as they refer to a) non-transferable/tradable intangible assets and b) other methods are not applicable (e.g. hedonic regression profit and/or discounted cash flow). Reference to the guidelines on fishing rights (<https://datacollection.jrc.ec.europa.eu/documents/d/dcf/guidelines%20on%20valuation%20of%20Fishing%20rights>).

Actions to avoid deviations

Briefly describe the actions that will be considered / have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

.

No action is needed.

(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.

1. Description of the threshold application

Please provide a percentage for the Member State's production from the latest EU aquaculture production reported to Eurostat. Describe and justify the applied threshold(s).

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

Describe and justify any deviations from variable definitions as listed in 'EU MAP Guidance Document' in the DCF website.

Based on the latest 2018 data, available on Eurostat for Europe with 27 Member States, the production of Italian aquaculture, with a production of 142,700 t, represents about 13% of the European total, placing itself in second place after Spain, with about 319,000 t (28%) and France with 186,700 (17%). 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 in accounting for less than 5% of the Member State's aquaculture production by both weight and value.

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)

Deviations from the work plan

List the changes from the work plan (if any) and explain the reasons.

No deviations

Actions to avoid deviations

Briefly describe the actions that will be considered / have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

NA

(max. 900 words)

SECTION 7: ECONOMIC AND SOCIAL DATA IN FISH PROCESSING

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

General comment: This text box fulfils Article 5(2)(f), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 7 of the EU MAP Delegated Decision annex.

1. The Member State should provide justification for complementary data collection for fish processing in addition to Eurostat data.

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

Describe and justify any deviations from variable definitions as listed in 'EU MAP Guidance Document' in the DCF website.

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.

(max. 900 words)

Deviations from the work plan

List the changes from work plan (if any) and explain the reasons.

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Because of delays in the implementation of the national data collection programme, data on raw material for the year 2021 was not provided (and released during the 2023 Fish processing data call).

Actions to avoid deviations

Briefly describe the actions that will be considered / have been taken to avoid deviations in the future and when these actions are expected to produce an effect. If there are no deviations, then this section is not applicable.

2021 data on raw material will be collected during the year 2024 and released for the next Fish processing data call.

(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.

Use this document to state whether documentation in the data collection process (design, sampling implementation, data capture, data storage, sample storage and data processing) exists and identify where this documentation can be found. Provide short descriptions where indicated, even if the documentation can be found in English. Names of sampling schemes and strata shall be identical to those in Tables 2.2, 2.3, 2.4, 2.5, 2.6 and 4.1 of the WP/AR. For quality information on scientific surveys, use the survey acronym as a sampling scheme identifier. For mandatory surveys, refer to Table 1 of the EU MAP Implementing Decision annex, see also MasterCodeList ‘Mandatory survey at sea’.

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 2022 until 2024
Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i>
Monitored species are those included in Annex 1.1.1 Species/stock selected for commercial sampling, 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 metier selected through the ranking system procedure, in order to evaluate biological characteristics of selected species in the catches, including discarded fraction. Observation of PETS (Protected Endangered and Threatened Species) is also covered within the sampling scheme. To complement the monitoring on incidental catches of Protected, Endangered and Threatened species (PET) a series of interviews will be performed in correspondence with the on shore data collection for the metiers where the occurrence of accidental catches is more likely as pelagic trawls, demersal trawls, bottom and surface longlines and fixed nets (see also Text Box 4.2 and Table 2.5).
Description of the population
Population targeted: Specify which are the primary sampling units (PSU), <i>e.g. all national port*days (information present in former Table 4B).</i> For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area. 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: 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, <i>e.g. major ports being listed as auctions excluding all minor ports and no sampling during the week-ends.</i> For research surveys at sea describe target species in single-species surveys or ecosystem component (<i>e.g. demersal, pelagic</i>) in multispecies surveys. The sampled population will be a selection of fishing trips, mainly on spatial (GSA) and time stratification basis (quarterly) with measurements of the composition of the catch in order to detect seasonal differences in the demographic structure and composition of the landings and discards for different métier. Catch of selected fishing trip will be sampled directly at landing. The number of fishing trips to be sampled by metiers and GSA is reported in table 2.5

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.

Sampling design and protocols

Sampling design description: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

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).

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

N. The adopted sampling design is NPCS

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

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).

Link to sampling design documentation: 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, provide some details in the textbox.

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>

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y. The Work Plan follows the recommendations made by the GFCM, RCG Med&BS and RCG LP

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

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 at the following link <https://dcf-italia.cnr.it/rest/uploads/Linee%20guida%20Raccolta%20dati%20biologici>

Compliance with international recommendations: Enter 'Y' (yes) if the sampling protocol is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling protocol should be shortly explained in the text, and should be available upon request for the evaluators.

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during the sampling year?

In case a fishing boat will not be available for sampling a given métier, it will be substituted by a similar one.

Data capture

Means of data capture: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

Biological data will be 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: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

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: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year. Soft organic tissues are kept frozen or kept in cold storage. Hard structures (otoliths, etc.) are kept in dry storage. All of 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): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y

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

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Y

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

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?
 Final dataset will be done within the national DataBase.

AR comment: No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract.

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 2022 until 2024
Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i>
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 metier selected through the ranking system procedure, in order 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). Additional sampling effort will be deployed through interviews at landing points and self-sampling by fishers (by means of dedicated logbooks).

Description of the population

Population targeted: Specify which are the primary sampling units (PSU), *e.g. all national port*days (information present in former Table 4B)*. For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.

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 week-ends*. 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 spatial (GSA) and time stratification basis (quarterly) with measurements of the composition of the catch in order to detect seasonal differences in the demographic structure and composition of the landings and discards for different metier. Catch of selected fishing trip will be sampled directly at landing. The number of fishing trips to be sampled by metiers and GSA is reported in table 2.5

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 considered to be 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, taking into account 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: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

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). Particular attention is given to the monitoring of PET for pelagic trawlers through Scientific Observers at Sea, in observance of REGULATION (EU) 2019/1241 where a specific increase of the sampling effort is foreseen. 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 terms 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?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

N. The adopted sampling design is NPCS

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

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).

Link to sampling design documentation: 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, provide some details in the textbox.

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>

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y. The Work Plan follows the recommendations made by the GFCM, RCG Med&BS and RCG LP

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

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/>).

In addition, the protocols are based on the findings and guidelines provided the EU regional grants MARE/2014/19 Med&BS and STREAM

(<https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>, <https://datacollection.jrc.ec.europa.eu/mare-2016-22-strengthening-regional-cooperation>).

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

Compliance with international recommendations: Enter 'Y' (yes) if the sampling protocol is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling protocol should be shortly explained in the text, and should be available upon request for the evaluators.

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during the sampling year?

In case a fishing boat will not be available for sampling a given métier, it will be substituted by a similar one.

Data capture

Means of data capture: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

Biological data will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software.

Data on the incidental bycatch of PET species will be recorded by trained fleet observers. In addition, data will be collected 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 grant MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, <https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>).

For on board sampling, bycatch is recorded by scientific observers for the entire duration of the fishing. Additionally, a questionnaire will be used in interviews to obtain information about bycatch at landing sites. Fishers will be asked to provide information about quantitative and qualitative structure of the bycatch. The scientific observer is requested to monitor all the bycatches during the entire fishing trip. Additionally, to ensure data quality, observers are instructed to take photos of the haul at the opening of the cod-end before the sorting, as well as photos of the specimens of rare species.

Data capture documentation: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

As concerns PETS, 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 grant MARE/2014/19 Med&BS (see Deliverable 3.2 embedded into the Final Report, <https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>).

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

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

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

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.

As concerns PETS, specific training has been and will continue to be provided to fleet observers and fishers involved in the self-sampling through logbooks. Identification guidelines were prepared by the EU regional grants MARE/2014/19 Med&BS and STREAM

(<https://datacollection.jrc.ec.europa.eu/mare-2014-2019-strengthening-regional-cooperation>,
<https://datacollection.jrc.ec.europa.eu/mare-2016-22-strengthening-regional-cooperation>).

Documentation can be found at link:

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

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

Y; Soft organic tissues are kept frozen or kept in cold storage. Hard structures (otoliths, etc.) are kept in dry storage. All of 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%20biolog>

Data processing

Evaluation of data accuracy (bias and precision): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y

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%20biolog>

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Y

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Y

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

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

Final dataset will be done within the national DataBase.

AR comment: No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract

Table Annex 1.1.1 Species/stock selected for commercial sampling

Species	Covered by a commercial sampling scheme for length	Selected for sampling of biological variables	Areas covered by commercial sampling
<i>Anguilla anguilla</i>	Y	Y	The 9 Italian Eel Management Units. (EMUs) under Regulation 1100/2007
<i>Aphia minuta</i>	Y	N	GSA 9
<i>Aristaeomorpha foliacea</i>	Y	Y	GSA 9, 11, 10, 16, 18 and 19.
<i>Aristeus antennatus</i>	Y	Y	GSA 9, 10, 11, 16, 18 and 19.
<i>Boops boops</i>	Y	Y	GSA 9, 10 and 19
<i>Coryphaena hippurus</i>	Y	N	GSA 10 and 16
<i>Engraulis encrasicolus</i>	Y	Y	GSA: 9, 10, 16, 17, 18, and 19.
<i>Merluccius merluccius</i>	Y	Y	GSA: 9, 10, 11, 16, 17, 18, and 19.
<i>Mullus barbatus</i>	Y	Y	GSA: 9, 10, 11, 16, 17, 18, and 19
<i>Mullus surmuletus</i>	Y	Y	GSA 9, 10, 11, 16 and 19
<i>Nephrops norvegicus</i>	Y	Y	GSA: 9, 10, 11, 16, 17, 18, and 19
<i>Pagellus erythrinus</i>	Y	Y	GSA: 9, 10, 11, 16, 17, 18, and 19
<i>Parapenaeus longirostris</i>	Y	Y	GSA: 9, 10, 11, 16, 17, 18, and 19.
<i>Penaeus kerathurus</i>	Y	N	GSA 17 and 18.
<i>Raja asterias</i>	Y	Y	GSA 9, 10 and 11
<i>Raja clavata</i>	Y	Y	GSA 16, 17 and 18
<i>Sardina pilchardus</i>	Y	Y	GSA: 9, 10, 16, 17, 18, and 19.
<i>Sardinella aurita</i>	Y	N	GSA 9, 10, 16 and 19.
<i>Solea solea</i>	Y	Y	GSA 17 and 18.
<i>Squilla mantis</i>	Y	Y	GSA 17 and 18.
<i>Trigla lucerna (Chelidonichthys lucerna)</i>	Y	N	GSA 17 and 18,
<i>Trisopterus minutus</i>	Y	N	GSA 17 and 18
<i>Euthynnus alletteratus</i>	Y	N	
<i>Sarda sarda</i>	Y	N	
<i>Thunnus alalunga</i>	Y	Y	
<i>Thunnus thynnus</i>	Y	Y	
<i>Xiphias gladius</i>	Y	Y	

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 2022 until 2024
<p>Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i></p> <p>The MEDITS programme aims to conduct international co-ordinated bottom-trawl surveys Mediterranean. The MEDITS survey aims at providing data useful for describing and quantifying changes in the fish populations, through indices of demography, mortality, spatial occupation, biological traits, thus contributing to the routine stock assessments and the development of management advice tools. One survey should be carried out every year, during spring and beginning of summer.</p>
Description of the population
<p>Population targeted: Specify which are the primary sampling units (PSU), <i>e.g. all national port*days (information present in former Table 4B)</i>. For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.</p> <p>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).</p> <p>Within the MEDITS framework, sampling and analysis of diet by size of Hake will be also carried out.</p> <p>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, <i>e.g. major ports being listed as auctions excluding all minor ports and no sampling during the week-ends</i>. For research surveys at sea describe target species in single-species surveys or ecosystem component (<i>e.g. demersal, pelagic</i>) in multispecies surveys.</p> <p>The population will be sampled to cover at best its distribution areas on the continental shelves 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.</p> <p>Stratification: Explain the logic taken to stratify the population and the number of strata generated, <i>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.</i></p> <p>Five (5) depth strata will be sampled (10-50, 51-100, 101-200, 201-500, and 501-800m).</p>
Sampling design and protocols
<p>Sampling design description: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.</p> <p>The sampling will be 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. 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.</p> <p>Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)</p> <p>Y</p> <p>Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.</p>

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). An International MEDITS Coordination Group met 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: 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, provide some details in the textbox.

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-talia.cnr.it/rest/uploads/Medits_Handbook_2017_version_9

Stomach contents of hake by size will be processed and analysed according to the Deliverable 4.1 of MARE/2016/22 STREAM project available at link

<https://datacollection.jrc.ec.europa.eu/mare-2016-22-strengthening-regional-cooperation>

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

https://dcf-italia.cnr.it/rest/uploads/Medits_Handbook_2017_version_9;

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during 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: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

Data on hauling 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. Data will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software.

Data capture documentation: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

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 available at

https://www.coispa.it/index.php?option=com_content&view=article&id=25&Itemid=149&lang=en

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

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: 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.

MEDITS data will be analysed according to the MEDITS-Handbook. Version n. 9 (2017). Stomach contents of hake by size will be analysed according to the Deliverable 4.1 of MARE/2016/22 STREAM project

Data processing

Evaluation of data accuracy (bias and precision): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Y

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

https://www.coispa.it/index.php?option=com_content&view=article&id=25&Itemid=149&lang=en

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

Final dataset will be done within the national DataBase.

AR comment: The survey has been carried out within the official time period in the GSAs 11, 17, 18 and 19. Due to Administrative problems (see Documentation provided by Italian administration) the survey was carried later in the year in GSA 9,10 and 16.

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 2022 until 2024

Short description (max 100 words): *e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).*

The Pan Mediterranean 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

Description of the population

Population targeted: Specify which are the primary sampling units (PSU), *e.g. all national port*days (information present in former Table 4B)*. For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.

The Pan Mediterranean 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

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 week-ends*. For research surveys at sea describe target species in single-species surveys or ecosystem component (*e.g. demersal, pelagic*) in multispecies surveys.

This research will be based on common protocol (MEDIAS-Handbook, 2019) 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 echograms scrutinization. Further, for an ecosystem-based approach environmental monitoring will be performed, thus CTD oceanographic data (temperature, salinity, fluorescence and dissolved oxygen) will be recorded

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.*

NA

Sampling design and protocols

Sampling design description: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

This research will be based on common protocol (MEDIAS-Handbook, 2019) 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.

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

Y

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

The MEDIAS acoustic surveys, performed in spring-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: 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, provide some details in the textbox.

MEDIAS data shall be collected, processed and analysed in line with the data collected according to the common protocol (MEDIAS-Handbook, 2019) provided at link
<https://dcf-italia.cnr.it/rest/uploads/MEDIAS%20Handbook%202019>

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

<https://dcf-italia.cnr.it/rest/uploads/MEDIAS%20Handbook%202019>

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during 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: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

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: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

<https://dcf-italia.cnr.it/rest/uploads/MEDIAS%20Handbook%202019>

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

NA

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

Soft organic tissues are 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:

MEDIAS data shall be collected, processed and analysed in line with the data collected according to the common protocol (MEDIAS-Handbook, 2019). The Handbook is provided at link:

<https://dcf-italia.cnr.it/rest/uploads/MEDIAS%20Handbook%202019>

Data processing

Evaluation of data accuracy (bias and precision): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Y

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

N

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

Final dataset will be done within the national DataBase.

AR comment: Survey was completely achieved in GSAs 10, 16, 17. In GSAs 9 and 18 the survey was not covered due to problems with ship availability.

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 2022 until 2024
Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i>
The main survey objectives are: a) 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. b) Pursuing the 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 to the requirement of the implementation of the MFSD (DIRECTIVE 2008/56/EC).
Description of the population
Population targeted: Specify which are the primary sampling units (PSU), <i>e.g. all national port*days (information present in former Table 4B)</i> . For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area. The target population is common sole living on soft bottoms of the GSA 17 that, according to the genetic information, pertains as a single stock.
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, <i>e.g. major ports being listed as auctions excluding all minor ports and no sampling during the week-ends</i> . For research surveys at sea describe target species in single-species surveys or ecosystem component (<i>e.g. demersal, pelagic</i>) in multispecies surveys. 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. Survey should be carried out based on the protocol used since 2005 (SoleMon, 2019; Survey – Handbook Version 2019) and utilising the same gear. The gear is and should be appositely planned to fish on different types of bottom. The research vessel should utilize two gears simultaneously in each haul

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.*

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

Sampling design and protocols

Sampling design description: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

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) . 59 hauls per year will be carried out by Italy in the period 2022-2024.

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

Y

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

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 is also 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: 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, provide some details in the textbox.

MEDITS data shall 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

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

https://dcf-italia.cnr.it/rest/uploads/SOLEMON-Handbook_2019_Ver_4

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during the sampling year?

NA

Data capture

Means of data capture: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

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: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

Data will be shared in WGs, both at EU and Mediterranean level, and with all Adriatic member States through common database AtrIS. 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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

NA

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

Soft organic tissues are 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 shall 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): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y; TruSt 1.0 - TRawls sUrveys database system

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Y; TruSt 1.0 - TRawls sUrveys database sysTem

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

Y; <http://www.kosmosambiente.it/scientifictrawlsurveys/>

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

Final dataset will be done within the national DataBase.

AR comment: For the first time, SOLEMON survey has been conducted not using a scientific research vessel but through a private vessel, allowing to accelerate all the operations. MOreover, good weather conditions also allowed to reduce the days to carry on the survey

DRES Chamelea, DRES Ensis, and DRES Callista

MS : ITA
Region: Mediterranean and Black Sea
Sampling scheme identifier: DRES Chamelea, DRES Ensis, and DRES Callista
Sampling scheme type: Research surveys at sea
Observation type: SciObsAtsea
Time period of validity: from 2022 until 2024
Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i>
Scientific surveys will be conducted to assess the spatial distribution 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. Additionally, biological information (e.g. weight, age etc.) will be collected and reported every three years for the striped venus, which has a minimum conservation reference size (22 mm).
Description of the population
Population targeted: Specify which are the primary sampling units (PSU), <i>e.g. all national port*days (information present in former Table 4B)</i> . For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area. The target populations are Chamelea gallina, living in GSA 17 and 18, Ensis minor living in GSA 9 and 10 , and Callista chione living in GSA 17.
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, <i>e.g. major ports being listed as auctions excluding all minor ports and no sampling during the week-ends</i> . For research surveys at sea describe target species in single-species surveys or ecosystem component (<i>e.g. demersal, pelagic</i>) in multispecies surveys. Surveys for C. gallina will be carried out in the 13 marine compartments in the Adriatic Sea (GSA 17 and GSA18, see the map below), surveys for E. minor will be conducted in 3 marine compartments (Roma, Gaeta, Napoli.; GSA 9 and GSA 10), while surveys for C. chione will be performed in 3 marine compartments (Monfalcone, Venezia and Chioggia) of GSA 17.
Stratification: Explain the logic taken to stratify the population and the number of strata generated, <i>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.</i>

Each compartment will be surveyed along regularly spaced transect lines perpendicular to the coast (around 2 mile each other, according to the length of each Compartment).

Sampling design and protocols

Sampling design description: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

Within each transect line, sampling stations will be settled at fixed distances/depths (0.25 nautical miles for *C. gallina*; every 2 m of depth for *E. minor*) until the presence of clams will be detected (usually at a distance corresponding to 12-14 m of depth for *C. gallina* and 6-8 m for *E. minor*).

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

Y

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

N

Link to sampling design documentation: 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, provide some details in the textbox.

MEDITS 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-talia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA

Compliance with international recommendations: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y. The Work Plan follows the recommendations made by the GFCM, RCG Med&BS and RCG LP

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

https://dcf-italia.cnr.it/rest/uploads/Protocollo%20DRES%202.2_PLNRDA

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during the sampling year?

NA

Data capture

Means of data capture: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

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: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

Y

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

Data will be shared in WGs, both at EU and Mediterranean level, and with all Adriatic member States through common database AtrIS. 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: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

NA

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

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): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

Y

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

Y

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

N

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

Final dataset will be done within the national DataBase.

AR comment: Indicate any deviations. Do not change the text already adopted in the work plan.

. In 2023 for survey DRES Chamelea the number of days at sea achieved was much lower than the ones planned (31 vs 54 days) despite the number of sampling activities achieved was instead higher than the planned ones (639 vs 595 hauls). The DRES_Callista survey was conducted by CNR-IRBIM in Monfalcone, Chioggia and Venezia Districts. However, the survey was concluded in a minor number of days at sea (3) than the ones planned (12), and the number of fishing activities was also revised so that a total of 28 hauls were conducted instead of the 60 planned in the WP 2022-2024.

SciObs water body*Diadromous (scientific)

MS : ITA

Region: Mediterranean and Black Sea

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

Sampling scheme type: Diadromous (scientific)

Observation type: SciObs water body

Time period of validity: from 2022 until 2024

Short description (max 100 words): *e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).*

Sampling scheme aimed at collecting data on recruitment, standing stock and escapement of eel in the relevant eel habitats in the Italian Eel management units (9 EMUs) as defined in accordance with Council Regulation (EC) No 1100/2007.

Description of the population

Population targeted: Specify which are the primary sampling units (PSU), *e.g. all national port*days (information present in former Table 4B)*. For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.

Eel research surveys targets eel subpopulations (e.g., eel local stocks) in relevant habitats targets in the Italian Eel management units (9 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: 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 week-ends*. For research surveys at sea describe target species in single-species surveys or ecosystem component (*e.g. demersal, pelagic*) in multispecies surveys.

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: 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.*

Data collected will be stratified in 9 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) or LGN (lagoon). Water bodies of other habitat typologies, e.g. LAK (lakes) and MLG (managed lagoons) 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: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

PSU in the 9 EMUs are identified as the site (water body) in the EMU most significant for the monitoring of recruitment, standing stock and escapement, on the basis of 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 9 different EMUs on 9 different sites for sampling campaigns on a monthly basis, sampling in 3 EMUs per year (starting in 2022) will be carried out.

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

NA

For eel scientific monitoring of recruitment, standing stock and escapement in transitional and inland waters, it is widely recognised 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 2022, 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).

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

NA

Link to sampling design documentation: 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, provide some details in the textbox.

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>

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.; Ženišková, 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. 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.

ICES, 2012. Report of the Workshop on Eel and Salmon DCF Data (WKESDCF), 3 – 6 July 2012, ICES HQ, Copenhagen, Denmark. ICES CM / ACOM:62. 67 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>

Walker A.M., Andonegi E., Apostolaki P., Aprahamian M., Beaulaton L., Bevacqua P., Briand C., Cannas A., De Eyto E., Dekker W., De Leo G., Diaz E., Doering-Arjes P., Fladung E., Jouanin C., Lambert P., Poole R., Oeberst R. and Schiavina M. (2011). Studies and pilot projects for carrying out the Common Fisheries Policy Lot 2: Pilot projects to estimate potential and actual escapement of silver eel. European Commission Directorate-General for Maritime Affairs and Fisheries.

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.

Compliance with international recommendations: Indicate ‘Y’ (yes) if the sampling design is in line with international recommendations, and ‘N’ if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

N

Link to sampling protocol documentation: Provide a link to a webpage where the documentation can be found 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, provide details on the sampling protocol in this textbox.

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](https://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.

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during 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: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

Data capture for eel research surveys in relevant habitats in order to collect data on recruitment, standing stock and escapement will be carried out in the 9 EMUs. The selection of the relevant site for the monitoring of all the three eel life stages will be agreed with Regional Administrations involved in Eel Management Plans under Council Regulation (EC) No 1100/2007, possibly coincident with the site for biological sampling of catches in order to complete information for specific eel local stocks in selected sites.

Methodologies for each life stage scientific monitoring foresee the following protocol, at the moment based on results of Pilot Studies carried out in the previous years (I: 2017-2019, II: 2020-2021). Final methodological challenges be finally worked out based on results of the Pilot Study for WP2 Task 2 2020-2021.

Recruitment (glass eel stage)

In the selected water body (habitat type: lagoon or river, depending on the EMU) for 7days/month (new moon) installation overnights of 1 fyke-net along the tidal channel (lagoon) or river bank for during the migration period (4 months: November-February), and the registration of presences (N) for each night. Gears used for recruitment monitoring are fyke nets 60-160 cm in height, with a 2-4 m leader connected to an approximately 2-4 m end with 2-3 chambers, the innermost one having a 2 mm mesh size.

Abundance and biomass of glass eel are calculated as a Relative Index of recruitment (Bornarel et al., 2016; Harrison et al., 2014) expressed as Catch Per Unit of Effort (CPUE_n = n/unit of effort (UE)/day; CPUE_g = g UE/day) i.e. daily count for each instrument.

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 (fyke nets + a boundary net arranged to enclose an area of 1 ha) (if the body water selected is a lagoon) or a fyke-net chain (row of 10 nets along the river bank, if the water body selected is a river) for 7 days/month during trophic movements period (April-July), and the daily registration of catches, (N or Weight, depending

on the amount of capture) each day.

Specifically for lagoons (LGN), a novel fishing gear system aimed at assessing yellow eel density was set up based on Claus and Malte, 2015, will be used, that combines the advantages of enclosure approaches and eel-specific fishing gears (fyke nets). The external part consists of a boundary net arranged in a 100 m × 100 m square (mesh size 12 mm) to enclose an area of 1 ha. The fyke nets set in the enclosed area were 16-20 in number, 80-100 cm in height, length of 2-3 m with 2-3 chambers, the innermost one having a ranging mesh size of 7-9 mm. Full selectivity of the gear is assumed for yellow eels with lengths above 36 cm, as smaller eels can escape through the selected mesh size (Claus and Malte, 2016; Bevacqua et al., 2009). Abundance and biomass of yellow eel standing stock are calculated as a Relative Index (Bornarel et al., 2016; Harrison et al., 2014) expressed as Catch Per Unit of Effort (CPUE_n = n/unit of effort (UE)/day; CPUE_g = g UE/day) i.e., daily count for each instrument.

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 body water selected is a lagoon, or along the river bank, if the water body selected is a river) for 7 days/month during downstream migration (October-January), and the daily registration of catches, (N or Weight, depending on the amount of capture) each day.

In detail, in continental waters (rivers), 2 rows of fyke nets have been set in chains (10 fyke nets each) parallel the banks along the river stretch, located at a distance of about 4 m from each other will be used. The fyke nets are 80-100 cm in height, length of 2 m with 2 chambers, the innermost one having an 8-9 mm mesh size. In transitional waters (coastal lagoons), the monitoring protocol foresees the setting up of two sampling stations, one per river bank arranged perpendicular to the shore by means of net barriers of length 123- 150 m, 12 mm mesh size. At the end of each net barrier, 2-3 fyke nets are installed. The fyke nets are 50- 80 cm in height, length 3-9 m, with 3 chambers, the innermost one having a mesh size 7-10 mm. Abundance and biomass of silver eel escapement are calculated as a Relative Index of escapement (Bornarel et al., 2016; Harrison et al., 2014) expressed as Catch Per Unit of Effort (CPUE_n = n/unit of effort (UE)/day; CPUE_g = g UE/day) i.e., daily count for each instrument.

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.; Ženišková, 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>

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.

Bornarel, V., (2016). Stock assessment in the case of the European eel: Towards an international assessment of a Widely-distributed and fragmented population.

Claus, U., & Malte, D. (2015). A novel enclosure approach to assessing yellow eel (*Anguilla anguilla*) density in non-tidal coastal waters. Fisheries Research, 161, 57-63.

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.

Drouineau, H., Briand, C., Lambert, P., & Beaulaton, L., (2016). GEREM (Glass Eel Recruitment Estimation Model): A model to estimate glass eel recruitment at different spatial scales. Fisheries Research, 174, 68-80.

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.

Harrison, A. J., Walker, A. M., Pinder, A. C., Briand, C., & Aprahamian, M. W. (2014). A review of glass eel migratory behaviour, sampling techniques and abundance estimates in estuaries: implications for assessing recruitment, local production and exploitation. *Reviews in Fish Biology and Fisheries*, 24(4), 967-983.

Walker A.M., Andonegi E., Apostolaki P., Aprahamian M., Beaulaton L., Bevacqua P., Briand C., Cannas A., De Eyto E., Dekker W., De Leo G., Diaz E., Doering-Arjes P., Fladung E., Jouanin C., Lambert P., Poole R., Oeberst R. and Schiavina M. (2011). Studies and pilot projects for carrying out the Common Fisheries Policy Lot 2: Pilot projects to estimate potential and actual escapement of silver eel. European Commission Directorate-General for Maritime Affairs and Fisheries.

Data capture documentation: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

NA

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

N

A quality check for data collected within scientific monitoring for eel at the moment is not applicable, because the methodologies are to be discussed, checked and agreed at the national level with EMUs, and at international level primarily within the ICES/GFCM/EIFAAC WGEEL

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

The Italian data base FishDataNet is available at: <https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

ICES database EEL

https://mercure.eptb-vilaine.fr/shiny_dv/

Quality checks and data validation documentation: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

NA 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

<p>Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.</p> <p>NA</p> <p>Sample analysis:</p>
<p>Data processing</p> <p>Evaluation of data accuracy (bias and precision): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.</p> <p>N</p> <p>Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.</p> <p>N</p> <p>Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?</p> <p>N</p> <p>Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?</p> <p>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).</p> <p>AR comment: No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract.</p>

SciObs water body Diadromous (commercial)

MS : ITA
Region: Mediterranean and Black Sea
Sampling scheme identifier SciObs water body Diadromous (commercial)
Sampling scheme type: Commercial by category
Observation type: SciObsOnShore
Time period of validity: from 2022 until 2024
<p>Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i></p> <p>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).</p>
Description of the population

Population targeted: Specify which are the primary sampling units (PSU), *e.g. all national port*days (information present in former Table 4B)*. For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.

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: 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 week-ends*. For research surveys at sea describe target species in single-species surveys or ecosystem component (*e.g. demersal, pelagic*) in multispecies surveys.

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: 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.*

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: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

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?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

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: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

NA

Link to sampling design documentation: 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, provide some details in the textbox.

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>)

Compliance with international recommendations: Indicate ‘Y’ (yes) if the sampling design is in line with international recommendations, and ‘N’ if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

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>

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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

Sampling implementation

Recording of refusal rate: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

NA

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during 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: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

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 (starting in 2022). 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: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

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%2013/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.

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

Quality checks documentation: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

N

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

FishDataNet Portale Nazionale Dati Alieutici

<https://dcf-italia.cnr.it/web/>

International database: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

ICES database EEL

https://mercure.eptb-vilaine.fr/shiny_dv/ GFCM

DCRF Task VII-6 online platform

Quality checks and data validation documentation: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

FishDataNet Portale Nazionale Dati Alieutici [https://dcf-](https://dcf-italia.cnr.it/web/)

[italia.cnr.it/web/](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: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

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:

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

Data processing

Evaluation of data accuracy (bias and precision): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

N

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

N

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

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

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

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).

AR comment: No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract..

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 2022 until 2024
Short description (max 100 words): <i>e.g. sampling scheme aiming at collecting length samples from commercial landings on-shore for all species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers mainland and all outermost regions ('RUP' in French, Portuguese, and Spanish).</i>
The project considers:
<ol style="list-style-type: none"> 1. <u>for species identified in the GFCM Report</u> (WGRF 2021 appendix 3 and 5) (still to. be definitively.set): sample telephone survey (triennial frequency) to collect information about recreational fishermen and to extract a panel to be involved in a subsequent logbook survey phase; 2. <u>for large pelagic species</u>, according to the ICCAT list of elasmobranchs and highly migratory species: annual census of the boats as to estimate the universe of anglers and to extract a panel to be involved in a subsequent logbook survey phase. The official register of catches for bluefin tuna and swordfish will also be considered. 3. In both cases: <ol style="list-style-type: none"> a. logbook 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 catch size per species (retained or released); b. extrapolation data and estimate of total number of fisherman and catch per species.
Description of the population
Population targeted: Specify which are the primary sampling units (PSU), <i>e.g. all national port*days (information present in former Table 4B).</i> For research surveys: specify the main target species from a survey perspective (as opposed to Table 1 in the Annex to the Implementing Decision) and the main survey area.
<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 minors are excluded; main target species concern the “species of common interest with the professional fishing” as according. to the ongoing National Programs. A final list, including other species as well, will be definitively fixed during 2022 after the end of the pilot studies currently still ongoing and the following consultations; main survey area is whole national area.
<u>for large pelagic species:</u>

as this type of fishing can only be practised 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;
main survey area is whole national area.

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 week-ends*. For research surveys at sea describe target species in single-species surveys or ecosystem component (*e.g. demersal, pelagic*) in multispecies surveys.

for species identified in the GFCM Report: A target sample size to obtain a sampling error level included between $\pm 3\%$ - 5% will be fixed; the sampled population will be defined according to a proportional distribution;
for large pelagic species: sampled population will be represented by fishing boats that practice recreational fishing activities in all touristic ports throughout the year. They will be defined using also data acquired by remote sensing. In this case the observations will be made on ports selected with reasoned methods

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.*

In both cases, the population will be stratified on 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: Describe how the sampling allocation is defined; how PSU and SSU are selected for sampling; indicate for which catch fraction the sampling scheme applies.

1. for species identified in the GFCM Report: will be used a probability sampling according to a stratified random sampling criterium without replacement;
2. for large pelagic species: probability sampling according to arandom sampling criterium without replacement.

Is the sampling design compliant with the 4S principle?: Y/N/NA (NA for e.g. surveys and diadromous and recreational sampling schemes)

NA

Regional coordination: Indicate if the sampling design and protocols were developed as part of a regional or multi-lateral agreement, and if yes, refer to the agreement (table 1.3) and list all Member States participating.

N

Link to sampling design documentation: 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, provide some details in the textbox.

- 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%2013/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:

- a. 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).

for large pelagic species:

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: Indicate 'Y' (yes) if the sampling design is in line with international recommendations, and 'N' if not. If no relevant expert or coordination groups exist, the sampling design should be shortly explained in the text, and should be available upon request for the evaluators.

Y

Link to sampling protocol documentation: 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, provide details on the sampling protocol in this textbox.

- 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 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: Indicate 'Y' (yes), 'N' (no), or 'NA' (not applicable, in case of research surveys). If 'N' (no), indicate when (year) documentation will be available.

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

Monitoring of sampling progress within the sampling year: Indicate how sampling allocations are adjusted (if needed) and followed-up, what are the mechanisms in place to resolve issues and adopt mitigation measures during the sampling year?

NA

Data capture

Means of data capture: short description (+ photo optionally). Indicate what the means for collecting the data are, e.g. scales, measuring board, dedicated software etc.

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

Data capture documentation: 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 data capture (e.g. measuring protocols, maturity staging, manual for the data capture means etc.) exists, provide some details in the textbox.

- 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: Indicate 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 quality checks exists, provide some details in the text box.

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>

Data storage

National database: Provide the name of national database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

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: Provide the name of international database(s) and the organisation hosting the database, if applicable. Otherwise, insert 'NA' (not applicable). Provide a link if the database is accessible through a website.

NA

Quality checks and data validation documentation: Provide link to webpage where the documentation can be found. Otherwise, provide some details in the text box.

NA

Sample storage

Storage description: Indicate the type of soft tissues and hard parts stored (e.g. age structures, stomach, plankton, genetics) and the location used for samples storage; how long the samples are stored; how conservation and maintenance as well as access to samples are organised; whether the samples are stored under the auspices/responsibility of an international organization; if yes, which one. Provide a link to information on quantities of sampled stored by species/stock, geographic sub-area and by year.

Sample analysis:

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

All data (questionnaires submitted, 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): Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 evaluation of data accuracy exists, provide some details in the textbox.

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

Editing and imputation methods: Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. 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 editing and imputation methods exists, provide some details in the textbox.

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

Quality document associated to a dataset: Is there a publication digital object identifier (DOI) created? Is there a document summarising the estimation process followed?

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

Validation of the final dataset: How are datasets validated (quality checked) before providing to end-user?

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

AR comment: No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract.

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. Do not delete any text from the template.

Fishing activity PSS

Survey Specifications
<p>'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.</p> <p>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</p> <p>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</p> <p>'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'.</p>
Sector name(s): Fishing activity variables; Article 5(2)(c), Article 6(3)(a), (b) and (c) of the Regulation 2017/1004 and Chapter II section 3 of the EU MAP Delegated Decision annex
Sampling scheme: PPS
Variables: Data on the activity of Union fishing vessels within and outside Union waters
Supra region(s): Mediterranean Sea and Black Sea
Survey planning fleet < 10 meters (exempt from regulation control)
<p>1. Provide a short description of the population to which the sampling scheme applies, e.g. 'less active vessels using passive gears'.</p> <p>Data sources will depend on the different types of data collection that will be used to collect the variables. In particular:</p> <ul style="list-style-type: none"> - 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.
Survey design and strategy
<ol style="list-style-type: none"> 1. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc. 2. Describe how the sample sizes were determined. 3. Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc. 4. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.

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).

Information on the prevalent fishing technique come from information provided by the detection network selected for monitoring. However, a large share of the fleet < 10 meters, uses more passive tools, so it is classified as: Vessels using Polyvalent “passive” gears only.

The optimum sample number per stratum is defined according to Bethel’s procedure (1989). The vessels are selected using PPS methodology (Probability Proportional to Size) by applying the algorithm of HanuravVijayan. 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

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.

Periodically, at least once a year, training courses are organised for the data collectors to update on possible software developments and also 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 π PS (inclusion probability proportional to size).

Estimation design

1. Describe method of calculating population estimate from sample.
2. Describe method of calculating derived data: e.g. imputed values.
3. Describe treatment of nonresponse.

The application of MAUSS-R for a specific target variable is provided in excel files using the MAUSS.R software. This Software requires that the user provides input data related to the characteristics of the population under investigation, to the variables of interest for the estimates, together with the constraints on the expected sampling error of the estimates.

As output, the system produces the sample size per stratum, the expected sampling errors of all estimates of interest and useful information to evaluate the solution found. The input information must be provided to the software in two separate data files:

1. the first one contains the stratification of the population, with the number of units within each stratum, the indication of the domains of estimate and some estimates of the intensity and variability of the phenomena of interest;
2. the second one contains the constraints on sampling errors, specified for each variable of interest and each type of domain.

In the present case, the first file provides information for each stratum (i.e. Liguria-PGP-0006 meters) on:

- Number of units in the frame population (fleet register);
- Average sample values for the variables: the landings and earnings of the species most representative of the national production, which form more than 70% of the total, were considered (usually between 25 and 30 species);
- standard deviation of the sampling values (landings and earnings);
- The second file contains the constraints on sampling errors (usually between 3 and 4%).

The output of the software is the sample size per stratum. Using this tool the user is able to make the necessary adjustments to achieve the desired sample size or, conversely, to achieve the desired expected precision on target estimates.

Estimate of totals and calculation of relative sampling errors

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:

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

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

The estimate of the average, in analogy with the estimate of the totals, will be given by

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

the single stratum h, by

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.

Error checks

1. Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.

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 of the 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

1. Describe how the data is stored.
2. Provide link to webpage where additional methodological documentation can be found, if any.

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.

Revision

1. Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.

Effort and productions variables will be collected every years starting from 2022 and the review of the sampling plan will be annual

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.

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.

AR comment: Indicate any deviations. Do not change the text already adopted in the work plan.

No deviations

Socioeconomic data on fisheries: PPS

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 fisheries

Sampling scheme: PPS

Variables: Data on the activity of Union fishing vessels within and outside Union waters

Supra region(s): Mediterranean Sea and Black Sea

Survey planning

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 the number of fishing enterprises and for variables related to the fleet (number of vessels, mean LOA of vessels, vessel's tonnage, etc.)
- Fleet register and ad hoc questionnaires will be used for estimating consumption of fixed capital and value of physical capital
- Accounts will be used for financial position
- Official administrative records will be used for reporting operating subsidies and subsidies on investments
- Ad hoc electronic questionnaires will be used to collect the rest of the variables listed in table 5A of EUMAP from the sample units of the survey described in paragraph.

The sample unit is the single vessel and this unit is selected from the Vessel Register, which also represents the frame population. The sampling is of a stratified nature in that the fishing vessels of the fleet are divided into homogenous groups based on suitable variables (geographical, technical and dimensional). Information on the prevalent fishing activity (stratification variable 2) come from field surveys carried out periodically (quarterly). This survey involves the vessels in the fleet register with LoA less than 10 meters. The optimum sample number per stratum is defined according to Bethel's procedure (1989), the vessels are selected using PPS methodology (Probability Proportional to Size) by applying the algorithm of Hanurav Vijayan. The multivariate allocation method is implemented in the MAUSS-R software developed at ISTAT as described in https://www.istat.it/it/files/2011/02/user_and_methodological_manual.pdf

Survey design and strategy

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 π PS (inclusion probability proportional to size)

Estimation design

The application of MAUSS-R for a specific target variable is provided in excel files using the MAUSS.R software. The first file provides information on:

- Stratum identified;
- Number of units in the frame population;
- Average sample values for the variables "fuel costs" and "labour costs";
- standard deviation of the sampling values;
- The fieldwork costs in the stratum (cost per each interview);

The second file contains the constraints on sampling errors).
The third file contains the output of the software. The system produces as output the sample size per stratum. Using this tool the user is able to make the necessary adjustments to achieve the desired sample size or, conversely, to achieve the desired expected precision on target estimates.

Error checks

Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.

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 (NICO). 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 NICODA, an IT tool developed for the sample survey of the economic data of the fishing fleet.

The calculation of inclusion probabilities, or expansion factors, was obtained in the environment of programming R. In particular, the "Survey" and "Sampling" packages were used. The sample design of the "Survey" package was set assuming that the units were extracted following the PPS (Probability Proportional to Size) methodology.

The process of quality control of the final estimates allows the identification anomalous values (outliers). This activity is carried out through interviews with sector operators, use of auxiliary information or subjective knowledge on the sector and statistical analysis of final estimates on the basis of the historical time series. The localization of outliers ("outliers") is based on the definition of acceptance intervals outside of which a statistical unit is considered anomalous and then subjected to control and, eventually, to correction.

Data storage and documentation

Describe how the data is stored.

Provide link to webpage where additional methodological documentation can be found, if any.

The Italian data base on DCF data is at: <https://www.politicheagricole.it>

Revision

Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.

Social variables will be collected every three years starting from 2022

Confidentiality

Are procedures for confidential data handling in place and documented?

Are protocols to enforce confidentiality between DCF partners in place and documented?

Are protocols to enforce confidentiality with external users in place and documented?

Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.

AR comment: Indicate any deviations. Do not change the text already adopted in the work plan.

No deviations

Socioeconomic data on aquaculture: PPS

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 aquaculture

Sampling scheme: PPS

Variables: Socioeconomic and environmental data on aquaculture

Supra region(s): Mediterranean Sea and Black Sea

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

<p>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.</p>
<p>Survey design and strategy</p>
<p>List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.</p> <p>Describe how the sample sizes were determined.</p> <p>Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.</p> <p>Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.</p> <p>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.</p> <p>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.</p>
<p>Estimation design</p>
<p>Describe method of calculating population estimate from sample.</p> <p>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</p>
<p>Error checks</p>
<p>Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.</p> <p>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.</p>
<p>Data storage and documentation</p>
<p>Describe how the data is stored.</p> <p>Provide link to webpage where additional methodological documentation can be found, if any.</p> <p>The Italian data base on DCF data is at: https://www.politicheagricole.it</p>
<p>Revision</p>

Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.
Confidentiality
<p>Are procedures for confidential data handling in place and documented?</p> <p>Are protocols to enforce confidentiality between DCF partners in place and documented?</p> <p>Are protocols to enforce confidentiality with external users in place and documented?</p> <p>Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.</p>
AR comment: Indicate any deviations. Do not change the text already adopted in the work plan. No deviations

Socioeconomic data for processing: PPS

Survey Specifications
<p><i>'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.</i></p> <p><i>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</i></p> <p><i>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</i></p> <p><i>'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'.</i></p>
Sector name(s): Socioeconomic data for processing
Sampling scheme: PPS
Variables: All variables listed in Table 7.1 Processing SocEcon of the Italian Work Plan 2022- 2024
Supra region(s): Mediterranean Sea and Black Sea
Survey planning
<p>Provide a short description of the population to which the sampling scheme applies, e.g. <i>'less active vessels using passive gears'</i>.</p> <p>The population covers enterprises whose main (primary) or non-main (secondary) activity is defined according to the Eurostat definition under NACE Code 10.20: 'products'.</p>
Survey design and strategy
<p>Economic data for both the main and non-main enterprises will be collected through the implementation of a sampling survey, trying to ensure a 40% coverage as a minimum. The main data sources will be enterprises' registers and the official balance sheets of these companies for the income and costs data. Subsidies on investments will be collected by using the main administrative sources (e.g. funds allocated under EMFF). As far as the social data related to employment, data will be collected for the whole sector every three years. The main data sources (e.g. labour registers, ad hoc questionnaires and ISTAT data) will be cross-checked and used for providing the variable listed under Table 7.1 Processing SocEcon</p>

<p>The main economic variables (e.g. turnover and number of enterprise) will be collected also for enterprises exerting the fish processing activity as secondary activity. The main data sources will be enterprises' register for the number and balance sheets and interviews for turnover attributed to fish processing activity.</p> <p>The national program foresees the collection of data on raw material in weight, by species and origin, for the whole sector. Data will be collected by mean of questionnaires and interviews submitted to selected industries (according to the representativeness) every three years starting in 2018. Meetings with the industry representatives will help to select industries and collect data. Lack of responses from the sector will be faced by adopting appropriate estimation methodologies in line with the SECFISH project and STECF most recent reports.</p>
<p>Estimation design</p>
<p>Describe method of calculating population estimate from sample. Describe method of calculating derived data, e.g. imputed values. Describe treatment of non-responses.</p> <p>For economic and social variable collected through through sample survey standard statistic parameters will be applied to raise the sampling values to the overall population. For the social variables and the raw material data on volume the procedures to estimate the totals will depend on the results of data availability.</p>
<p>Error checks</p>
<p>Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.</p> <p>For data obtained by estimation on national registers, large errors are not expected. The quality of data collected by mean of ad-hoc survey will be ensured by applying sound statistical approaches and providing data on coverage rates and coefficient of variation.</p>
<p>Data storage and documentation</p>
<p>Describe how the data is stored. Provide link to webpage where additional methodological documentation can be found, if any.</p> <p>Methodological documents and protocols are available in the national web site for the Data Collection Framework, https://dcf-italia.cnr.it/web/</p>
<p>Revision</p>
<p>Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.</p> <p>NA</p>
<p>Confidentiality</p>
<p>AR comment: Indicate any deviations. Do not change the text already adopted in the work plan. No deviations for methodologies used. The sampling implementation has been affected by the lack of the contract.</p>

Socio-economic data on fisheries: PPS

<p>Survey Specifications</p>

<p><i>'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.</i></p> <p><i>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</i></p> <p><i>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</i></p> <p><i>'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'.</i></p>
<p>Sector name(s): Socio-economic data on fisheries (this box is reported as deviation because this sector was not included in the WP 2022-2024)</p>
<p>Sampling scheme: PPS</p>
<p>Variables: Data on the activity of Union fishing vessels within and outside Union waters</p>
<p>Supra region(s): Mediterranean Sea and Black Sea</p>
<p>Survey planning</p>
<p>2. Provide a short description of the population to which the sampling scheme applies, e.g. <i>'less active vessels using passive gears'</i>.</p>
<p>Survey design and strategy</p>
<p>5. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.</p> <p>6. Describe how the sample sizes were determined.</p> <p>7. Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.</p> <p>8. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.</p>
<p>Estimation design</p>
<p>4. Describe method of calculating population estimate from sample.</p> <p>5. Describe method of calculating derived data: e.g. imputed values.</p> <p>6. Describe treatment of nonresponse.</p>
<p>Error checks</p>
<p>2. Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc.</p>
<p>Data storage and documentation</p>
<p>3. Describe how the data is stored.</p> <p>4. Provide link to webpage where additional methodological documentation can be found, if any.</p>
<p>Revision</p>
<p>2. Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per</p>

segment, per variable etc.

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.

AR comment: Indicate any deviations. Do not change the text already adopted in the work plan.

AR comment: Indicate any deviations. Do not change the text already adopted in the work plan.

As this sector was not included in the WP 2022-2024, the text is reported below as deviations.

The application of MAUSS-R for a specific target variable is provided in excel files using the MAUSS.R software. The first file provides information on:

- Stratum identified;
- Number of units in the frame population;
- **Average sample values for the variables “fuel costs” and “labour costs”;**
- standard deviation of the sampling values;
- The fieldwork costs in the stratum (cost per each interview);

The second file contains the constraints on sampling errors).

The third file contains the output of the software. The system produces as output the sample size per stratum.

Using this tool the user is able to make the necessary adjustments to achieve the desired sample size or, conversely, to achieve the desired expected precision on target estimates.