Aquatic Resources Malta

Ministry for Agriculture, Fisheries and Animal Rights

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

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

2025 – 2027

Version 5 – 2024

Malta, 13th December 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.

RWP MED & BS 2025-2027, RWP LP 2025-2027 and RWP ECON 2025-2027 implementation years

This report presents the general framework of the planned national Work Plan (WP) for the collection of fisheries and aquaculture sectors which Malta proposes to undertake for the upcoming period 2025-2027. The national data collection programme collects two main sources of data: fishery independent and fishery dependent data. The proposed activities are based on the requirements set by the new Data Collection Multi-Annual Programme (DC-MAP), comprised by:

- Commission Delegated Decision (EU) 2021/1167 which repeals Delegated Decision (EU) 2019/910, which lays down detailed arrangements on the collection and management of biological, environmental, technical, and socioeconomic data by Member States.
- Commission Implementing Decision (EU) 2021/1168, which repeals Implementing Decision (EU) 2019/909 and establishes the list of mandatory surveys at sea and the thresholds below which it is not mandatory for Member States to collect data based on their fishing and aquaculture activities or carry out research surveys at sea.

The format of the document follows the Commission Implementing Decision (EU) 2022/39 of 12 January 2022 laying down rules on the format for the submission of 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.

Aquatic Resources Malta (ARM) within the Ministry for Agriculture, Fisheries and Animal Rights (MAFA) is responsible for the implementation and coordination of all the requirements listed in the DC-MAP as outlined in Malta's WP, with the following contact details:

Name: Aquatic Resources Malta
Address: Fort San Lucjan, Triq il-Qajjenza, Marsaxlokk, BBG1283, Malta.
E-mail: aquaticresources@gov.mt
Telephone number: +356 2292 6900
Website: https://aquaticresources.gov.mt/

As there is only one entity involved, no formal National Coordination meetings are set-up. Nonetheless, collaboration with other national entities is sought when required.

As Malta's National Correspondent, Dr Jurgen Mifsud coordinates the Maltese commitment to the data collection programme. A team comprising of the National Correspondent, scientists and other key staff collaborate to:

- Promote co-ordination and harmonisation of scientific data collection in the Maltese Islands and ensure collaboration with international coordinators.
- Ensure that activities specified under the DC-MAP concerning scientific data are being effectively carried out at a national level.
- Maintain communications and data collation within Malta for transmission to the Commission and other specified parties and end-users.
- Collate cost and administrative information relating to the programme.

Information relating to the national data collection is available from https://aquaticresources.gov.mt/.

Malta plans to meet the DC-MAP obligations by the collection and use of fisheries data as follows:

a) Legislative procedures (fishing vessel registration data)
b) Direct reports (logbook reports)
c) Complementary data collection
d) Socio-economic data collection
e) Biological data sampling schemes
f) Research survey

Overall, the data collection methodology follows the approach taken in recent years by Malta, with respect to biological and economic data collection. The transition of the WP planning and execution from the former legal basis to the new DC-MAP implies several changes in the structure and content of the WP compared to the previous data collection report, including:

- Number of trips of biological sampling (under Section 2)
- New species included in age reading of commercial species (under Section 2)
- Recreational fisheries sampling (under Section 2)
- Stomach content sampling (under Section 2)
- Marine ecosystem (under Section 3)

Nonetheless, the general rationale and methodology of the data collection, remains very similar to previous WPs and is based on past experience. As from 2023, Malta will attempt to carry out the MEDIAS research survey in GSA, if the necessary cost-sharing agreement with another Member State is established, as outlined in Text Box 2.6.

Malta acknowledges the significant role of the Regional Coordination Groups (RCGs) on the improvement of the quality of the Work Plans in various aspects of the data collection, especially under the new DC-MAP. As per previous years and as outlined in Table 1.2, Malta plans to participate in the RCG for Economic Issues (ECON), RCG Mediterranean and Black Sea (MED&BS), RCG Large Pelagics (LP) and RCG Decision Meeting (DM). The regional agreements/recommendations of the RCGs are provided under the relevant WP proposal sections.

(max. 1000 words)

Text Box 1a: Test study on CKMR on bluefin tuna

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex. This text box applies to the work plan and the annual report (max 900 words per study).
RWP LP 2025 – 2027 implementation years The Atlantic-Wide Research Programme for Bluefin Tuna (ICCAT GBYP) has confirmed the feasibility of using Close-kin Mark Recapture (CKMR) and epigenetics for age determination for the eastern stock of Atlantic bluefin tuna. The full feasibility study will be presented to the SCRS in 2024, when spatially modelled and intensive biological sampling for genetic purposes in the Mediterranean Sea is expected. Malta is willing to support the implementation of this test study on CKMR on bluefin tuna subject to the full approval of the adoption of the respective technique at the ICCAT SCRS 2024 meeting.

Text Box 1b: Other data collection activities

Region: Mediterranean and Black Sea

Activity: RCG's Secretariat

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

to RWP MED & BS 2025-2027, RWP LP 2025-2027 and RWP ECON 2025-2027 implementation years

Name of the study: RCG's Secretariat.

1. *Aim of the data collection activity.*
   Support the operation and functioning of the RCG´s Secretariat underpinning fluent regional coordination of data collection activities as stipulated by Article 9 of the DCF Regulation (EU) 2017/1004.

2. *Duration of the data collection activity*.
   2025-2027.

3. *Methodology and expected outcomes of the data collection activity*.
   The Secretariat´s organizational structured has been set up and pilot tested throughout the SecWeb project (MARE/2020/08 grant). The key functions of the RCG´s Secretariat have been determined in close collaboration with all RCGs, 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 (including participants and stakeholders) has readily acknowledged the added value of having an RCG´s Secretariat to support and improve data collection coordination activities.

   Based on the SecWeb project outputs, the proposed data collection related 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 regionally coordinated data collection activities from heavy burden administrative tasks.

   Overall expected outcomes:
   1. A full-time dedicated Secretariat support service for the RCGs enables a consistent approach to administering RCG activities, facilitating communication, and enhancing the intersessional work, and supporting the work of RCG sub-groups.
   2. A dynamic and permanently updated website (https://www.fisheries-rcg.eu/) will be kept available including as features:
      - Repository – one-stop location and reference location for reports, various agreements covering regional coordination, RCG protocols and working procedures.
      - 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.

Agreements and commitments are as follows:
At the 2022 RCG Decision meeting, all MS agreed on the principle of the implementation of a long- term secretariat in support of the work of all RCGs. This agreement led to continued support beyond the deadline of the SecWeb-project. Based on the experience gained, the extended support for regional coordination activities and the aim to secure a long-term, uninterrupted support, the agreement on the principle remains in place for 2025-2027.
The RCG's Secretariat facilitates the RWP MED&BS, RWP LP and RWP ECON, along with the respective test studies.

(max 250 words per study)

Activity: MED&BS Regional data base (RDBFIS)

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

RWP MED&BS 2025 – 2027 implementation years

Name of the study: MED&BS Regional data base (RDBFIS).

1. *Aim of the data collection activity.*
   To contribute to the development and operation of the MED&BS Regional Database (RDBFIS).

2. *Duration of the data collection activity.*
   2025 – 2027.

3. *Methodology and expected outcomes of the data collection activity.*
   The RDBFIS is a fundamental tool for regional coordination. The RDBFIS gathers in a single data base catch, effort and sampling data for biological variables and PETs together with information on the sampling design. The RDBFIS is planned to integrate national databases and has an important part to play in increasing transparency and improving the quality of stock assessment within GFCM and STECF.

   The temporary hosting and further development of the RDBFIS is currently supported by the specific contract RDBFIS II (CINEA/EMFAF/2021/3.1.2/03/SC04/SI2.881222) funded under the EU Framework Contract EASME/2020/OP/0021. In addition, the Steering Committee for the MED&BS Regional Database, established under the umbrella of the RCG MED&BS, will support, and cooperate with this initiative.

   This transition to RDBFIS requires an important effort by countries:
   - To adapt their internal processes to store and provide data in the RDBFIS data model.
   - To participate in the development of the RDBFIS through the RDB SC and ISSGs giving feedback about different data types and end user needs (including catch ad effort data, SSF data, biological variables, MRF, PETs, SSF…).

(max 250 words per study)

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

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

RWP MED&BS 2025 – 2027 implementation years

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

1. *Aim of the data collection activity.*
To develop and propose coordinated actions in dedicated thematic areas during the Intersessional year for the RCG MED&BS.

2. *Duration of the data collection activity.*
2025 – 2027.

3. *Methodology and expected outcomes of the data collection activity.*
Regional cooperation is meant to improve the efficiency of data collection through sharing of expertise, data, best practices, knowledge, and collaborative tasks. The RCGs bring together several Member States to coordinate planning and implementation of data collection. Their workplan across the year, from one round of the annual technical meetings to the next, is supported with the setup of the Intersessional Subgroups.

In these subgroups, the experts concentrate on specific Thematic Focus Areas, and sometimes they are pan-regional. During the relevant RCG meetings, the different ISSGs present progress and hurdles encountered across the period and propose the update of their Terms of Reference with the tasks and targets for the new intersessional period for approval. The work performed by ISSGs is essential for RCG technical meeting preparation and meeting discussions and Member States are requested to name experts in the different ISSGs relevant to them and these experts should allocate a significant amount of time for carrying the work during the intersessional year.

The ISSGs may change over the years as task are completed and new needs are coming up. A non-exhaustive list of the ISSG is presented below:

- ISSG on RWPs.
- ISSG on Recreational Fisheries.
- ISSG on fish stomach content analysis.
- ISSG on PET's bycatch monitoring.
- ISSG on sampling design optimization.
- Steering Committee for the MED&BS Regional Database.

(max 250 words per study)

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

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

RWP LP 2025 – 2027 implementation years

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

1. *Aim of the data collection activity.*
Intersessional work at the RCG LP

2. *Duration of the data collection activity.*
2025 – 2027.

3. *Methodology and expected outcomes of the data collection activity.*
Regional cooperation is meant to improve the efficiency of data collection through sharing of expertise, data, best practices, knowledge and collaborative tasks. The RCGs bring together several Member States to coordinate planning and implementation of data collection. Their workplan spans across the year, from one round of the annual technical meetings to the next, and is supported with the setup of the Intersessional Subgroups.

In these subgroups the experts concentrate on specific Thematic Focus Areas, which sometimes they can be pan-regional. During the relevant RCG's technical meetings, the different ISSGs present progress and hurdles encountered across the period and propose the update of their Terms of Reference with the tasks and targets for the new intersessional period for approval. The work carried out by ISSGs is essential for RCG technical meeting preparation and meeting discussions. Member States are requested to nominate experts in the relevant ISSG who should allocate a significant amount of time (on average 40 hours per ISSG) for carrying out the work during the intersessional year.

The ISSG may change over the years as tasks are completed and new needs are emerging.

(max 250 words per study)

SECTION 2: BIOLOGICAL DATA

Text Box 2.4: Recreational Fisheries

Region: Mediterranean and Black Sea

General comment: This text box fulfils Article 5(2)(a), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 2.2 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used to collect data on marine and freshwater recreational catches. For freshwater diadromous species, use Table and Text Box 2.3.

RWP MED&BS 2025 – 2027 implementation years

The identification of the target population of recreational fisheries shall be conducted via a general population screening survey. This screening survey would be carried out once triennially, thus during 2025. In this survey only generic information shall be collected, in line with the GFCM Handbook (https://www.fao.org/gfcm/publications/series/technical-paper/669/en/) for data collection on recreational fisheries in the Mediterranean and Black Sea, which would be followed in our data collection on recreational fisheries as well. The outcome of the screening survey shall then be cross-checked with the official records of the national recreational fisheries federation and associations.

Probability survey sampling would then be conducted as soon as the target population has been statistically well-defined. The planned survey sampling methodology is the stratified random sampling technique, in which the identification of strata shall be identified from the information collected during the screening survey along with local expert knowledge, although a regional stratification is expected. The number of observations within each stratum should then be computed via the standard proportionate stratification equations, in which each respondent would be randomly selected by a computerised routine. If the respondent is not willing to participate in the survey for data collection on recreational fisheries, this respondent shall be substituted by another randomly selected fisher.

The planned data collection methodology shall follow the off-site survey approach (reference is to be made to template in Annex I of the RWP), in which data on the fishing effort, catch composition and economic expenditures would be collected. The following baseline information would be requested during the survey: fishing location, fishing mode, fishing time, gear type, number, and weight of species, performed fishing trips, and estimated cost per fishing trip. The list of species has been specified in Table 2.4, emanating from Table 4 of the Annex to the Commission Delegated Decision (EU) 2021/1167, the relevant RCG MED&BS 2021 recommendation, the outcome of the previously conducted pilot study on recreational fisheries, and local expert knowledge.

As a binding action, Malta will be applying a multispecies approach and collect data from off-site surveys in order to propose list of priority species for the estimation of "catches" (a) and "releases" (b) and finalise the list by sub-region. Moreover, to propose a list of vulnerable species (c) incidentally caught in recreational fisheries and finalise the list by sub-region. The list of priority species proposed by GFCM (Report of the Working Group on Recreational Fisheries (WGRF) | General Fisheries Commission for the Mediterranean (GFCM) | Food and Agriculture Organization of the United Nations (fao.org)), as well as the work done under the RCG MED&BS umbrella (Please see the Final Report of the Regional Co-ordination Group Meeting for the Mediterranean and Black Sea 2021 Workshop on Recreational Fishery 8-9 March 2021 and 9 April 2021 (follow-up meeting); and the Final Report of the RCG MED&BS 2019, Malta), will be taken under consideration.

The collected data shall then be validated via standard data quality checks, in which the respondent could be asked to verify the submitted data in case of ambiguities. In order to mitigate the non-response rate, resampling would be carried out and data imputation techniques would also be adopted.

(max 900 words per region)

Text Box 2.5: Sampling plan description for biological data

Region: Mediterranean and Black Sea

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.

RWP MED&BS 2025 – 2027 implementation years

Sampling scheme name: Commercial fishing trip

The sampling schemes selected are sampling from the market, at sea, and a combination of the two. Those métiers for which the discards behaviour is not significant as identified in the RCM MED&BS (2010) report or for which discards do not represent more than 10% of the total catches by weight or more than 15% of the catches in number, will be sampled from the market. For PS_LPF_>=14_0_0, onboard observations will be conducted during harvesting and data from landings inspections will also be included.

The number of trips to be sampled per métier was computed with 95% confidence around the mean quarterly historical effort. Based on previous knowledge and previously used measures, trips will be planned according to seasonal fishing effort. The planned number of trips to be sampled also takes into consideration the number of trips Malta needs to sample at the regional level. The same methodology as in previous years was used, to allow comparisons to results obtained from previous years.
As per ICCAT requirements, scientific observations must be conducted on 20% of all the longline vessels (>15m) targeting bluefin tuna (BFT), and on 5% of the longline vessels (>15m) targeting swordfish (SWO). The vessels are chosen randomly for SWO and systematically for BFT. Since the ICCAT requirement is tied to the number of sampled vessels and not to the number of trips, the planned number of trips (Table 2.5) for drifting longlines is subject to change, depending on the number of conducted trips.

(max 250 words per sampling scheme)

Text Box 2.6: Research surveys at sea

Region: Mediterranean and Black Sea

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

General Comment: This text box fulfils Article 5(1)(b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapters I and II of the EU MAP Implementing Decision annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

RWP MED&BS 2025 – 2027 implementation years

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

1. *Objectives of the survey.*
   The MEDITS survey programme intends to produce basic information on benthic and demersal species in terms of population distribution as well as demographic structure, on the continental shelves and along the upper slopes at a global scale in the Mediterranean Sea, through systematic bottom trawl surveys.

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 MEDITS is conducted in spring - summer period from May to July based on MEDITS protocol using specially designed bottom trawl net GOC 73. Sampling stations are randomly distributed according to the depth strata (10-50; 50-100; 100-200; 200-500; 500-800 m) and the number of stations is proportional to the surface of each stratum.

   MEDITS data are collected, processed, and analysed according to the common protocol (MEDITS Handbook. Version n. 9, 2017, which can be found at the following link: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf), 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. 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 are distributed in each GSA applying a random stratified sampling scheme using as strata the geographical combination of zones and depth. 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 EWGs).

3. *For internationally coordinated surveys, describe the participating Member States/vessels.*
   Since 2001, European MSs bordering the Mediterranean are obliged to carry out MEDITS survey yearly in the framework of the EU Data Collection. Italy, France, Spain, Croatia, Greece, Malta, Slovenia, and Cyprus are involved in the MEDITS and permanent links are maintained with relevant bodies (i.e., RCG MED&BS, MEDITS Steering Committee, 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). Currently, the MEDITS Handbook is under revision.

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

(max 450 words per survey)

Research survey: MEDiterranean International Acoustic Survey (MEDIAS)

General Comment: This text box fulfils Article 5(1)(b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapters I and II of the EU MAP Implementing Decision annex. It is intended to specify which research surveys at sea, as set out in Table 2 of the EU MAP Implementing Decision annex will be carried out. Member States shall specify whether the research survey is included in Table 2 of the EU MAP Implementing Decision annex or whether it is an additional survey.

RWP MED&BS 2025 – 2027 implementation years

Research survey: MEDiterranean International Acoustic Survey (MEDIAS)

In accordance with the list of mandatory research surveys of Commission Implementing Decision (EU) 2021/1168, the MEDIAS survey shall be carried out in GSA 15.

1. *Objectives of the survey.*
   The MEDIAS survey programme intends to evaluate the abundance and spatial distribution of small pelagic fish resources by direct methods (acoustics), independently of the data provided by commercial fisheries; Target species are anchovy and sardine.

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. Survey is conducted in the summer-autumn period of the year according to MEDIAS protocol.*
   A specific date for each GSA has been proposed by the MEDIAS coordination group during 2024, based essentially on the historical periods of the surveys and the availability of research vessels. This proposal will ensure the continuity of time series within the GSA level. A buffer period of plus or minus one month is authorized in case of difficulties that may be encountered in certain years. In the case the survey must be brought forward or delayed by more than this buffer month outside the official period, a request must first be made to MEDIAS SC and the EC before launching the survey. The specific time period for GSA 15 is between month 6 and 7.

   Acoustic data for fish abundance estimation are collected by calibrated scientific echo sounder at 38kHz; Fish samples are collected by use of pelagic trawl net, with aim to provide information needed for echograms scrutiny, as well as for collection of fish biological data; Abiotic environmental data (measurements of temperature and salinity) collections are made by CTD vertical profiles, while additional biotic data in pelagic ecosystem are obtained by plankton sampling (acoustic at 120kHz and/or vertical hauls). Collection of navigational data ensures that all other collected data are geo-referenced (suitable for spatial analyses). Manual of the survey is available athttp://www.mediasproject.eu/medias/website/handbooks-menu.html, and it contains a graphical map of the surveys.

3. *For internationally coordinated surveys, describe the participating Member States/vessels.*
   The Participating Member States are Spain, France, Italy, Greece, Slovenia, Malta, Croatia, Bulgaria and Romania. The international coordination of the survey is carried out in the "MEDIAS coordination meeting.

4. *Where applicable, provide more details on the type of participation and/or threshold agreement applied.*
   The MEDIAS survey in GSA 15 would only be possible to take place if Malta establishes the necessary cost sharing agreement with another Member State.

References

MEDIAS Handbook (2021). Common protocol for the MEDIterranean International Acoustic Survey (MEDIAS). Version: April, 2021. Retrieved from: http://www.medias-project.eu/medias/website/handbooks-menu/handbooks/MEDIAS-Handbook-(April-2021)/

(max 450 words per survey)

SECTION 3: FISHING ACTIVITY DATA

Text Box 3.1: Fishing activity variables data collection strategy

Region: Mediterranean and Black Sea

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

RWP MED&BS 2025 – 2027 implementation years

Complementary data collection is carried out to derive estimates for representative samples where data are not to be recorded under Control Regulation (EC) No 1224/2009. This involves a probability sampling scheme, applicable to professional fishing vessels in the national fishing fleet register with length overall less than 10 m, generally referred to as the small-scale fishing fleet.

The probability sampling survey, referred to as the Catch and Effort Assessment Survey (CAS), was designed with the objective to provide monthly catch and effort estimates for the small-scale fleet, which do not have a logbook system.

Information on the sampling scheme is presented in Annex 1.2; the survey is carried out annually, for the entire duration of the Work Plan implementation.

(max 450 words)

SECTION 4: IMPACT OF FISHERIES ON MARINE BIOLOGICAL RESOURCES

Text Box 4.2: Incidental catches of sensitive species

Region: Mediterranean and Black Sea

General Comment: This text box fulfils Article 5(2)(a) and (b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2 point 4.1 of the EU-MAP Delegated Decision annex. This text box complements Table 2.5.

RWP MED&BS 2025 – 2027 implementation years

1. *Has an assessment of the relative risk of bycatch for the different gear types/metiers taken place and been considered for the sampling design?*
   The Ministry for Agriculture, Fisheries and Animal Rights has been involved in three studies centred on the relative risks of bycatch from long lines and nets:
   - https://lifepanpuffinus.org/reports/
   - https://www.researchgate.net/publication/235983050_Non-target_bycatch_in_the_Maltese_blue_fin_tuna_Thunnus_thynnus_longline_fishery_Central_Mediterranean
   - Mitigating Dolphin Depredation in Mediterranean Fisheries Joining Efforts for Strengthening Cetacean Conservation and Sustainable Fisheries Towards solutions to interactions between fisheries and cetaceans - The Malta case

   Besides these, no other dedicated assessments which have been undertaken on other gears, however data on the incidental bycatch of vulnerable species is collected through routine onboard observations of fishing activity.

2. *What are the gear types/metiers that present the highest risk of bycatch per species/taxa of PETS in each region?*
   The main outcomes emanating from the above mentioned studies were taken into consideration on the planning of PETs sampling. Particularly, it was reported that from the conducted studies, it was found that long lines and nets, particularly drifting long lines, present a risk to *Calonectis diomedea* and *Carretta carretta* in Maltese waters.

   A list of PET Species has been developed at GFCM level. This species list will be considered as a baseline by the RCG MED&BS to prioritize future regional work plans regarding PETs sampling programmes. Species lists are living documents and will be subjected to periodic review and update.

   Link to the list of PET species: https://www.fao.org/gfcm/data/dcrf/fr/

   The regional coordination of data collection of PETs species is under development in the RCG ISSG on PETs. The work relates to the list of PET species which need to be given high priority in the fisheries monitoring in the region. The guidelines provided by the FAO Handbook (https://www.fao.org/3/ca4991en/CA4991EN.pdf) will be taken into consideration in terms of sampling methodologies and sampling coverage, as well as the guidelines provided by the EU regional grants (e.g., STREAM, STREAMLINE, etc.; https://dcf.ec.europa.eu/coordinationsmore/regional-grants_en).

3. *What are the methods to calculate the observation effort?*
   NA.

4. *Does the sampling design and protocol follow the recommendations from relevant expert groups?*
   Incidental bycatches are recorded alongside the standard data collection procedures followed during onboard observations, as adapted from the GFCM guidelines (http://www.fao.org/3/ca4991en/ca4991en.pdf).

5. *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.

6. *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.

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

8. *Additional information on sampling schemes.*
   NA.

9. *Additional description on sampling frames.*
   NA.

(max 250 words per activity)

General Comment: This text box fulfils Article 5(2)(a) and (b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2 point 4.1 of the EU-MAP Delegated Decision annex. This text box complements Table 2.5.

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):

- Has an assessment of the relative risk of bycatch for the different gear types/metiers taken place and been considered for the sampling design?
- What are the gear types/metiers that present the highest risk of bycatch per species/taxa of PETS in each region?
- What methods are used to calculate the observation effort?
- 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 must be explained in the text.

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

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

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

Text Box 4.3: Fisheries impact on marine habitats

Region: Mediterranean and Black Sea

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.

RWP MED&BS 2025 – 2027 implementation years

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

1. *Aim of the study.*
   Regional coordination on fish stomach contents collection and analysis in the Med&BS.

2. *Duration of the study.*
   2025-2027.

3. *Methodology and expected outcomes of the study*.
   In the Mediterranean, the stomach sampling shall be based on European hake, *Merluccius merluccius*, and on the MEDITS international trawl survey. The methodology will follow the STREAM protocol, as per RCG Med&BS 2021 Recommendation 13. Owing to the nature of such studies, it is impossible to estimate the number of individual samples collected during the survey beforehand. This, coupled with the fact that not all samples are guaranteed a full stomach, could potentially affect the total number of adequate samples per length group suitable for analysis. Further details can be found in Appendix 1.1.

(max 250 words per study)

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.

RWP MED&BS 2025 – 2027 implementation years

Name of the study: Investigating physical impact of bottom-contact fishing gears on marine benthic habitats.

1. *Aim of the study.*
   To investigate the physical impacts of bottom-contact fishing gears on marine benthic habitats, thus enhancing our knowledge within the framework of the adopted marine action plan.

2. *Duration of the study.*
   The study will run from 2025 until 2027.

3. *Methodology and expected outcomes of the study.*
   The first stage of the study will consist of preliminary desk-based research and the procurement of any necessary materials and services, in order to prepare for the fieldwork and analysis which will be carried out throughout the remainder of the study. This desk-based research will be used to identify the gear-types employed by local fishers which contact the seafloor, as well as the main habitats in which each of these gears are typically operated, and what interactions between the two have been documented to date.

   The second stage of the study will consist of the direct observation of fishing activity. Fishers who utilise these identified gears will be contacted to arrange for these observations. To achieve this, a combination of scuba divers and remotely operated vehicles (ROVs), for shallow and deeper waters respectively, will be employed to observe the activities in their typically worked habitats, and under typical working conditions whenever possible. In some circumstances gears may be deployed outside of these typical working conditions to facilitate observations; gears typically deployed at night, for example, may be deployed during the day to allow for improved vision underwater. Due to the nature and variety of fishing

gears, observations will vary according to each métier and its accessibility for underwater observation. Static gears will primarily be observed during deployment and retrieval, whilst non-static gears will be observed whilst active and in motion. These observations will be repeated for each gear according to the number of habitats the gear is typically associated with, particularly in the case of ecologically important habitats.

Habitat observations will focus on two major habitat components: biological features (including biogenic structures) and geomorphological features, which together constitute the main structure of a benthic habitat. Any interactions between fishing gears and these components will be recorded and assessed in detail. Indirect effects on habitats such as changes in ecological functioning and food webs that occur because of changes in species composition arising from fishing activities are considered beyond the scope of this study and thus will not be assessed.

The final stage of the study will consist of the qualitative assessment and analysis of the observations gathered in the field. All observed interactions will be detailed and ranked according to the level of disturbance to the physical habitat. Once completed, this will provide new insight into the precise nature of the direct impacts of commercial fisheries on local benthic habitats.

(max 900 words per study)

Text Box 5.2: Economic and social variables for fisheries data collection

Region: Mediterranean and Black Sea

General comment: This Text box fulfils Article 5(2)(d), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 5 of the EU MAP Delegated Decision annex. It is intended to specify data to be collected under Tables 7, 8 and 9 of the EU MAP Delegated Decision annex.

RWP ECON 2025 – 2027 implementation years

1. *Description of clustering.*

Clustering is carried out post data collection, meaning that the sampling design/plan is unaffected. Grouping of vessels from different fleet segments is carried out for confidentiality reasons only when reporting economic and social variables.

In order to derive estimates on representative samples where data are not to be recorded under the Control Regulation (EC) No 1224/2009, complementary data collection is carried out on fishing vessels with length overall less than 10m, meaning data reported in length classes VL0006 and VL0612. The Maltese fishery is a relatively small industry of a typical Mediterranean artisanal type. The absolute majority (over 90%) of the professional Maltese fishing fleet is less than 10m in length. It is frequently described as a multi-species and multi-gear fishery, with the majority of the fishers switching from one gear to another several times throughout the year. Vessels exceeding 10m LOA (i.e. VL0612, VL1218, VL1824, VL2440 and VL40XX) are covered under the Control Regulation.

According to STECF EWG 15-07, the small-scale fleet (SSF) is defined as vessels under 12m using non-towed gears, whilst large-scale fleet segment (LSF) is defined as vessels over 12m. Based on this 12m threshold, the rules set for clustering by Malta is firstly dependent on the length class - whether it is under or over 12m LOA.

For vessels less than 12m LOA (i.e. length classes VL0006 and VL0612), segments are considered as falling under the category (b) 'Segments similar to other segments' of the DCF clustering guidance as recommended by SGECA 09-02.

As per Table 8 'Fleet Segmentation' of the Commission Delegated Decision (EU) 2021/1167, if the fishing technique is classified as passive gears, the segment is clustered under fishing technique 'vessels using polyvalent passive gears only' (PGP) within the same length class.

In case of a very low number of vessels using passive gears, such as 'vessels using hooks' (HOK), 'vessels using pots and/or traps' (FPO) and 'drift and/or fixed netters' (DFN), these will be clustered together with the fishing technique 'vessels using polyvalent passive gears only' (PGP) in the same length class.

For vessels greater than 12m LOA (i.e. length classes VL1218, VL1824, VL2440 and VL40XX), segments are considered as falling under the category (a) 'important segments with distinct characteristics' of DCF clustering guidance as recommended by STECF SGECA 09-02. This is especially relevant for fishing techniques under national management plans (vessel using purse seine nets "lampara", bottom otter trawlers and dolphinfish FAD fishery).

In the case of 'purse seiners' (PS) in the segments PS VL1218, VL1824 and VL2440 are grouped into the cluster PS VL1824. In the case of 'demersal trawlers and/or demersal seiners' (DTS), the segments DTS VL1824 and VL2440 are clustered into DTS VL2440. The segments cluster 'vessel using other active gears' MGO VL1218 and VL1824, and 'vessels using active and passive gears' PMP VL1824 are grouped in the cluster MGO VL1824, since all of these fishing techniques involve active gears.

As per DCF clustering guidance and as recommended by several STECF working groups (e.g. EWG 13-28 and EWG 15-07), this clustering methodology will be applied consistently over time in the same groups for all years (even if the threshold is not reached for some years) in order to maintain the time-series of the data. As the number of vessels in a fleet segment varies from year to year, this consistent approach allows time-specific analyses to be done.

2. *Description of activity indicator.*
NA. Malta does not use an activity indicator to divide the fleet segment into different activity levels.

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

References

DCF Clustering of Fleet Segments for the Economic Data Call on the EU Fishing Fleet. 2004. Accessible from: https://datacollection.jrc.ec.europa.eu/documents/10213/1235778/Clustering_2014.pdf

Scientific, Technical and Economic Committee for Fisheries (STECF). 2009. Report of the sub-group on research needs (SGECA/SGRN 09-02). Publications Office of the European Union, Luxembourg, 278 pp. Retrieved from: https://op.europa.eu/en/publication-detail/-/publication/bda55143-6cea-4f23-b5b0-be0e90282428/language-en

Scientific, Technical and Economic Committee for Fisheries (STECF). 2013. Assessment of balance indicators for key fleet segments and review of national reports on Member States efforts to achieve balance between fleet capacity and fishing opportunities (STECF-13-28). Publications Office of the European Union, Luxembourg, 140 pp. Retrieved from: https://stecf.jrc.ec.europa.eu/reports/balance/-/asset_publisher/3rBi/document/id/673445?inheritRedirect=false

Scientific, Technical and Economic Committee for Fisheries (STECF). 2015. Annual Economic Report on the EU Fishing Fleet (STECF-15-07). Publications Office of the European Union, Luxembourg, 434 pp. Retrieved from: https://stecf.jrc.ec.europa.eu/documents/43805/1034590/2015-07_STECF+15-07+-+AER+2015_JRCxxx.pdf

(max. 900 words)

SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE

Text Box 6.1: Economic and social variables for aquaculture data collection

Region: Mediterranean and Black Sea

General comment: This text box fulfils Article 5(2)(e), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 6 of the EU MAP Delegated Decision annex. It is intended to specify data to be collected under Tables 10 and 11 of the EU MAP Delegated Decision annex.

RWP ECON 2025 – 2027 implementation years

1. *Description of the threshold application.*
   Based on the latest Eurostat data (reference year: 2019) reported in '*Aquaculture production in tonnes and value*' (Fish_AQ2A), Malta's total percentage production to total Union production volume is 1.2%.

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

Region: Mediterranean and Black Sea

General comment: This text box fulfils Article 5(2)(f), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004, and Chapter II point 7 of the EU MAP Delegated Decision annex.
RWP ECON 2025 – 2027 implementation years Malta will be collecting fish processing data since it will allow another branch within the fishing industry to be assessed, thus enabling advice to be provided to relevant end-users within the Maltese public sector. For further information on the data collection scheme for fish processing refer to Annex 1.2 Fish processing text box. *(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.

Sampling scheme identifier: Market Samples

MS: MLT
Region: Mediterranean and Black Sea
Sampling scheme identifier: Market Samples
Sampling scheme type: Commercial fishing trip
Observation type: SciObsOnShore
Time period of validity: from 2025 until 2027
Short description (max 100 words): Marine samples are purchased through commercial sales in order to measure and assess commercially landed species. All the species present in these samples are measured and analysed to some degree. Those listed under Groups 1, 2, and 3 of the GFCM-DCRF are measured and analysed accordingly, whilst those species not listed are at least measured for length and weight.
Description of the population
Population targeted: Landed trips in Malta. **Population sampled:** Landed trips available for sale, caught with the gears listed in Table 2.5 of the WP. **Stratification:** The population is stratified based on the fishing gear used by the fisher.
Sampling design and protocols
Sampling design description: The métiers to be sampled are selected using the ranking method based on landings, effort (days at sea) and values. The number of trips to be sampled is computed with 95% confidence around the mean quarterly historical effort, including the adoption of Qualitrain tools. Departmental officers attend the only fish market in Malta to purchase available landed samples from trips using the required gears; trips conducted by vessels using the required gears can also be purchased through other sales channels subject to availability and necessity. This sampling scheme relates to the landed portion of the catch. **Is the sampling design compliant with the 4S principle?:** Yes. **Regional coordination:** No, however the selection of métiers to be sampled is done through the same ranking method (gears contributing to 90% of the total landings, effort and value) and the data is collected following the relevant recommendation of the RCG Med & BS. **Link to sampling design documentation:** The information is available at https://aquaticresources.gov.mt/. **Design follows international recommendations:** Yes; the Work Plan follows the recommendations made by the GFCM, RCG MED&BS and RCG LP. **Link to sampling protocol documentation:** The information is available at https://aquaticresources.gov.mt/. **Protocol follows international recommendations:** Yes.
Sampling implementation
Recording of refusal rate: NA. **Monitoring of sampling progress within the sampling year:** Sampling is monitored monthly through electronic systems. If samples cannot be purchased in accordance with the sampling plan due to unforeseen circumstances, other sales channels are explored.
Data capture
Means of data capture: The measures are obtained using a measuring board (length), scales (weight) and through macroscopic observations of specimens (to determine the sex and maturity). In case of age reading, this is done from otoliths, anal fins and dorsal spine depending on the species. **Data capture documentation:** The methods followed are those indicated in the GFCM-DCRF (http://www.fao.org/gfcm/data/dcrf/en/) and ICCAT manuals. **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).

Data storage
National database: Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. **International database:** NA. **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).
Sample storage
Storage description: Soft organic tissues are stored frozen or kept in cold storage, whilst harder materials are stored in a cold, dry cabinet. All of these storage systems are securely kept under lock and key. **Sample analysis:** Protocols are determined according to the scientific literature and regional recommendations available for each species.
Data processing
Evaluation of data accuracy (bias and precision): Yes; https://aquaticresources.gov.mt/. **Editing and imputation methods:** Yes; https://aquaticresources.gov.mt/. **Quality document associated to a dataset:** No. **Validation of the final dataset:** Information on this is provided at https://aquaticresources.gov.mt/.

Sampling scheme identifier: Onboard Observations

MS: MLT
Region: Mediterranean and Black Sea
Sampling scheme identifier: Onboard Observations
Sampling scheme type: Commercial fishing trip
Observation type: SciObsAtSea
Time period of validity: from 2025 until 2027
Short description (max 100 words): Sampling scheme aiming at collecting length data from commercial catches at-sea for the species indicated in Table 2.1 of this WP.
Description of the population
Population targeted: The trips carried out by vessels operating in the Maltese fishing fleet. **Population sampled:** The trips carried out by vessels (i) operating the fishing gears selected for sampling and (ii) which are willing and able to accommodate observers onboard. In case of drifting longlines, as per ICCAT recommendations, observations are limited to trips carried out by vessels over 15 m which are authorised to target BFT and SWO. **Stratification:** The population is stratified based on the gear registrations for each vessel.
Sampling design and protocols
Sampling design description: Fishers using the relevant gears, are randomly selected per quarter and contacted at the beginning of each month according to the gear that the fishers have been using during that period of time. The trips conducted by the fishers who are contacted by the Department first are sampled. In case of drifting longlines for BFT, vessels not previously selected for sampling are selected. In case of drifting longlines for SWO, vessels are selected by random draw. Observers are then allocated to accompany the selected vessels on all trips (using drifting longlines targeting BFT or SWO) conducted in the given year. This sampling scheme relates to both the landed and discarded portion of the catch. **Is the sampling design compliant with the 4S principle?:** Yes. **Regional coordination:** No, however the selection of métiers to be sampled is done through the same ranking method (gears contributing to 90% of the total landings, effort and value) and the data is collected following the relevant recommendation of the RCG Med & BS. **Link to sampling design documentation:** The information is available at https://aquaticresources.gov.mt/. **Design follows international recommendations:** Yes; the WP follows the recommendations made by the GFCM (http://www.fao.org/gfcm/data/dcrf/en/). **Link to sampling protocol documentation:** The information is available at https://aquaticresources.gov.mt/. **Protocol follows international recommendations:** Yes.
Sampling implementation
Recording of refusal rate: Yes. **Monitoring of sampling progress within the sampling year:** Sampling is monitored monthly through electronic systems. If trips cannot be sampled in accordance with the sampling plan, samples are instead purchased from corresponding commercial sales.
Data capture
Means of data capture: The measures are obtained using a measuring board (length) and in some cases macroscopical observations of specimens to determine the sex and maturity. **Data capture documentation:** The methods followed are those indicated in the GFCM-DCRF (http://www.fao.org/gfcm/data/dcrf/en/). **Quality checks documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).
Data storage
National database: Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. **International database:** NA **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).

Sample storage
Storage description: Soft organic tissues are stored frozen or kept in cold storage, whilst harder materials are stored in a cold, dry cabinet. All these storage systems are securely kept under lock and key. **Sample analysis:** Protocols are determined according to the scientific literature and regional recommendations available for each species.
Data processing
Evaluation of data accuracy (bias and precision): Yes (https://aquaticresources.gov.mt/). **Editing and imputation methods:** Yes (https://aquaticresources.gov.mt/). **Quality document associated to a dataset:** No. **Validation of the final dataset:** Information on this is provided at https://aquaticresources.gov.mt/.

Sampling scheme identifier: Stock-Based Sampling

MS: MLT
Region: Mediterranean and Black Sea
Sampling scheme identifier: Stock-Based Sampling
Sampling scheme type: Biological parameters specific
Observation type: SciObsOnShore
Time period of validity: from 2025 until 2027
Short description (max 100 words): Sampling scheme aiming at collecting biological parameters from commercial landings for the species indicated in Table 2.2 of this WP.
Description of the population
Population targeted: Landed trips in Malta. **Population sampled:** Landed trips available for sale. **Stratification:** No further stratification is applied.
Sampling design and protocols
Sampling design description: The number of individuals to be sampled is computed around the variance of the historical average length of the species. Departmental officers attend the only fish market in Malta to purchase available landed samples of the species listed in Table 2.2. Samples can also be purchased through other sales channels subject to availability and necessity. This sampling scheme relates to the landed portion of the catch. **Is the sampling design compliant with the 4S principle?:** Yes. **Regional coordination:** The data is collected following the relevant recommendation of the RCG Med & BS. **Link to sampling design documentation:** The information is available at (https://aquaticresources.gov.mt/). **Design follows international recommendations:** Y; the WP follows the recommendations made by the GFCM (http://www.fao.org/gfcm/data/dcrf/en/) and RCG LP. **Link to sampling protocol documentation:** The information is available at https://aquaticresources.gov.mt/. **Protocol follows international recommendations:** Yes.
Sampling implementation
Recording of refusal rate: NA **Monitoring of sampling progress within the sampling year:** Sampling is monitored through electronic systems. If difficulties in purchasing samples are encountered, other sales channels are explored.
Data capture
Means of data capture: The measures are obtained using a measuring board (length), scales (weight) and through macroscopic observations of specimens (to determine the sex and maturity). In case of age reading, this is done from otoliths, anal fins and dorsal spine depending on the species. **Data capture documentation:** The methods followed are those indicated in the GFCM-DCRF (http://www.fao.org/gfcm/data/dcrf/en/) and ICCAT manuals. **Quality checks documentation:** Yes; https://aquaticresources.gov.mt/.
Data storage
National database: Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. **International database:** NA **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).
Sample storage
Storage description: Soft organic tissues are stored frozen or kept in cold storage, whilst harder materials are stored in a cold, dry cabinet. All these storage systems are securely kept under lock and key. **Sample analysis:** Protocols are determined according to the scientific literature and regional recommendations available for each species.
Data processing
Evaluation of data accuracy (bias and precision): Yes; https://aquaticresources.gov.mt/. **Editing and imputation methods:** Yes; https://aquaticresources.gov.mt/. **Quality document associated to a dataset:** No.

Validation of the final dataset: Information on this is provided at https://aquaticresources.gov.mt/.

Sampling scheme identifier: Survey

MS: MLT
Region: Mediterranean and Black Sea
Sampling scheme identifier: Survey
Sampling scheme type: Recreational (off site surveys)
Observation type: SciObsOnShore
Time period of validity: from 2025 until 2027
Short description (max 100 words): Planned sampling scheme on recreational fisheries with the aim to estimate the annual total catches and effort, which should be conducted after a population screening survey has been carried out. The identified list of species has been outlined in Table 2.4 of this WP.
Description of the population
Population targeted: Recreational fishers included in the population screening survey. **Population sampled:** Recreational fishers interviewed during the population screening survey and willing to participate in the data collection survey on recreational fisheries. **Stratification:** Regional stratification, although further stratification could be taken into consideration once the screening survey is conducted.
Sampling design and protocols
Sampling design description: Once the target population of recreational fishers has been defined and stratified, and the sample size determined, the sample of recreational fishers to be enrolled in the data collection survey would be randomly chosen within each stratum. The selected recreational fishers would then be contacted to determine if they would be participating in the survey. Fishers who decline to participate would then be substituted by other recreational fishers who shall be randomly selected from the available list of fishers in that stratum. **Is the sampling design compliant with the 4S principle?:** NA. **Regional coordination:** Handbook for data collection on recreational fisheries in the Mediterranean and the Black Sea. **Link to sampling design documentation:** The information is available at http://www.fao.org/gfcm/publications/series/technical-paper/669/en/. **Design follows international recommendations:** Yes. **Link to sampling protocol documentation:** The information is available at http://www.fao.org/gfcm/publications/series/technical-paper/669/en/. **Protocol follows international recommendations:** Yes.
Sampling implementation
Recording of refusal rate: Yes. **Monitoring of sampling progress within the sampling year:** Resampling of recreational fishers in case of non-responses and data validation with the respondent in case of ambiguities in the collected data.
Data capture
Means of data capture: Face-to-face interviews and/or phone calls with recreational fishers. **Data capture documentation:** Information on this is provided at https://aquaticresources.gov.mt/. The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/. **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).
Data storage
National database: Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. **International database:** NA. **Quality checks and data validation documentation:** Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).
Sample storage
Storage description: No soft tissues and hard parts will be collected. **Sample analysis:** NA.
Data processing

Evaluation of data accuracy (bias and precision): No (2022); https://aquaticresources.gov.mt/.
Editing and imputation methods: No (2022); https://aquaticresources.gov.mt/.
Quality document associated to a dataset: No.
Validation of the final dataset: Information on this will be provided at https://aquaticresources.gov.mt/.

Sampling scheme identifier: MEDITS

MS : MLT

Region: Mediterranean and Black Sea

Sampling scheme identifier: MEDITS

Sampling scheme type: Research survey at sea

Observation type: SciObsAtSea

Time period of validity: from 2025 until 2027

Short description (max 100 words): The survey programme MEDITS aims to collect basic data with regards to benthic and demersal species in terms of population distribution as well as demographic structure on an annual basis. This survey will be able to produce a snapshot of the status of several demersal and benthic stocks through coordinated sampling of demersal resources in the Mediterranean and Black Sea. MEDITS survey falls under mandatory survey at sea as set out in Table 1 of the of the Commission Implementing Decision (EU) 2021/1168.

Description of the population

Population targeted: As from 2012, the MEDITS reference list of target species includes 82 species, of which 32 are elasmobranchs. The list also includes all species of the *Epinephelus* and *Scomber* genera. This list was split into two groups:

- Group 1 including 41 species, for which individual sex, maturity, weight, and age should be collected; and
- Group 2 containing 43 species for which only individual length is to be collected.

The full detailed list of the reference species can be found in the MEDITS handbook, available at: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf. The main survey area covered is the entire Mediterranean and Black Sea; Malta carries out the survey in GSA 15.

Population sampled: The population being sampled are demersal species.

Stratification: The hauls for the research survey are positioned using a depth stratified scheme with random drawing of the positions within each stratum. The number of locations in each stratum is proportional to the occurrence of each stratum in GSA 15, however in some cases (due to damages to the fishing net which would have been noted in the previous years and other logistical difficulties) the planned location of that certain haul may be slightly altered from year to year. The depths are fixed in all areas as strata limits, starting from 10-50m (a), 51-100m (b), 101-200m(c), 201-500m (d) and 501-800m (e).

Sampling design and protocols

Sampling design description: The sampling design follows the MEDITS manual - https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

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

Regional coordination: The sampling design and protocols were developed as part of a regional agreement. The MEDITS Steering Committee falls under the GFCM and the Regional Coordination Group Mediterranean and Black Sea (RCG MED&BS).

Link to sampling design documentation: The sampling design follows the MEDITS protocol, available from: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Design follows international recommendations: Yes.

Link to sampling protocol documentation: The documentation can be accessed at: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Protocol follows international recommendations: Yes.

Sampling implementation

Recording of refusal rate: NA.

Monitoring of sampling progress within the sampling year: The MEDITS survey is carried out over a period of three weeks in the second and third quarters in GSA 15. Sampling progress is monitored using measures indicated in the MEDITS protocol.

Data capture

Means of data capture: The samples are first brought to the lab. Length and weight data are collected using measuring boards and calibrated weighing scales. Sex and maturity for the target species are also recorded using the MEDITS maturity scales which were published by FAO. The data collected is then inputted into a dedicated

database known as TruST (Scientific Trawl Surveys). The database is used to store, retrieve, update, analyse and manipulate trawl survey data. Qualitrain tools are further adopted to improve the quality of data,

Data capture documentation: The MEDITS manual provides information on the data capture: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Quality checks documentation: Y The documentation can be retrieved from: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Data storage

National database: TruST (Scientific Trawl Surveys). This database is used to store, retrieve, update, analyse and manipulate trawl surveys data (http://www.kosmosambiente.it/scientifictrawlsurveys/).

International database: NA.

Quality checks and data validation documentation: The documentation can be retrieved from: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Sample storage

Storage description: The samples collected during the survey are marine organisms. When the samples are collected, they are blast frozen and stored in a freezer onboard the vessel until the survey is completed. The samples are then stored in a freezer at a temperature of -25° C until they are ready to be processed.

Sample analysis: The processing of samples is in line with the MEDITS handbook, available from: https://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2017_version_9_5-60417r.pdf.

Data processing

Evaluation of data accuracy (bias and precision): Y; 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 between Member States carrying out the MEDITS survey, which rationale has been incorporated in the checks made at JRC level during the data upload via the Data Validation Tool which is available on the JRC website (https://ec.europa.eu/jrc/en) and and the assessment working groups (STECF-EWG). In addition, the national database TruST also contains self-integrated data quality checks.

Editing and imputation methods: No (The documentation will be available in 2022 accessed via https://aquaticresources.gov.mt/).

Quality document associated to a dataset: No.

Validation of the final dataset: In order to automatically perform the data check procedure by means of a routine enabling errors to be detected and facilitating their correction, the RoME routine, an R code for performing multiple and cross checks on MEDITS survey data in TA, TB, TC, TE and TL files, was developed (Bitetto et al. 2019). The RoME Manual can be downloaded together with the software at the following link: https://www.coispa.it/index.php?option=com_content&view=article&id=25&Itemid=149&lang=en.

After checking the dataset via the RoME routine, the quality checks and validation of the final dataset is carried out via the DV tool (https://ec.europa.eu/jrc/en).

References

Bitetto, I. Facchini, M.T, Spedicato, M.T. (2017). RoME (version 1.4): R code to perform multiple checks on MEDITS Survey data (TA, TB, TC, TD, TT and TE files). Coispa Tecnologia & Ricerca - Stazione sperimentale per lo Studio delle Risorse del Mare. Retrieved from: https://www.coispa.it/index.php?option=com_content&view=article&id=25&Itemid=149&lang=en.

Sampling scheme identifier: MEDIAS

MS: MLT

Region: Mediterranean and Black Sea

Sampling scheme identifier: MEDIAS

Sampling scheme type: Research survey at sea

Observation type: SciObsAtSea

Time period of validity: from 2025 until 2027

Short description (max 100 words): In line with the MEDIAS SC recommendation and RCG MED&BS 2022 Recommendation 7, if the necessary cost sharing agreement with another Member State is established, the MEDIAS survey shall be carried out in GSA 15 from 2025-2027. The Pan Mediterranean Acoustic Survey (MEDIAS), which has been carried out annually since 2009, assesses the abundance and spatial distribution of small pelagic species, specifically anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*), in the Mediterranean Sea, by means of acoustic methodology. The demographic structure and species composition of the pelagic populations will also be derived from pelagic trawls in order to evaluate the abundance and biomass per age, size and sex.

Description of the population

Population targeted: The target population is anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*) in GSA 15, although the accompanying pelagic community detected with scientific echo sounders is also studied.

Population sampled: The population being sampled are small pelagic species.

Stratification: The MEDIAS survey design will cover the GSA 15, in line with the MEDIAS handbook (2023). The survey is planned to be carried out during daytime. Pelagic hauls will also be carried out to ground truth the fish echotraces detected by the echosounder, whilst oceanographic variables will be collected by means of CTDs.

Sampling design and protocols

Sampling design description: This research will be based on common protocol (MEDIAS Handbook, 2023), following a multidisciplinary approach. Acoustic data acquisition, carried out using a multifrequency scientific echo sounder system properly calibrated each year, will also be accompanied by net samplings on small pelagic fish, performed by means of a pelagic trawl.

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

Regional coordination: The sampling design and protocols were developed as part of a regional agreement. The MEDIAS Steering Committee falls under the GFCM and the Regional Coordination Group Mediterranean and Black Sea (RCG MED&BS).

Link to sampling design documentation: The MEDIAS data shall be collected, processed and analysed in line with the data collected according to the common protocol (MEDIAS Handbook, 2023), available from: http://www.medias-project.eu/medias/website/handbooks-menu/func-startdown/259/.

Design follows international recommendations: Yes.

Link to sampling protocol documentation: http://www.medias-project.eu/medias/website/handbooks-menu/func-startdown/259/.

Protocol follows international recommendations: Yes.

Sampling implementation

Recording of refusal rate: NA.

Monitoring of sampling progress within the sampling year: During the survey, hauls are adaptive, only when echotraces (schools) appear and need to be identified. MEDIAS Handbook (April 2023).

Data capture

Means of data capture: Biological data on anchovies and sardines will be collected both on board and at laboratories by scales, measuring board, stereomicroscope and dedicated software. The treatment of catches is detailed in the MEDIAS Handbook (2023).

Data capture documentation: The MEDIAS reports are available from: http://www.medias-project.eu/medias/website/.

Quality checks documentation: The documentation will follow the MEDIAS handbook (2023), which can be retrieved from: http://www.medias-project.eu/medias/website/handbooks-menu/func-startdown/259/.

Data storage
National database: The Aquatic Resources Malta database will be used for data storage. **International database:** There is no specific international database; Maltese data collected within the DC-MAP program will be submitted int the relevant data calls and stored in EU JRC and GFCM databases. **Quality checks and data validation documentation:** NA.
Sample storage
Storage description: The samples collected during the survey are marine organisms. Soft organic tissues are kept frozen or in cold storage. Hard structures such as otoliths are kept in dry storage. All samples are duly labelled, whilst all of these storage systems are kept securely. **Sample analysis:** The MEDIAS data shall be collected, processed, and analysed in line with the data collected according to the common protocol (MEDIAS-Handbook, 2023). The Handbook is provided at link: http://www.medias-project.eu/medias/website/handbooks-menu/func-startdown/259/.
Data processing
Evaluation of data accuracy (bias and precision): Yes. **Editing and imputation methods:** No. **Quality document associated to a dataset:** No. **Validation of the final dataset:** Validation of the final dataset will be done within the national database.

Sampling scheme identifier: Stomach Content Analysis (MEDITS)

MS: MLT

Region: Mediterranean and Black Sea

Sampling scheme identifier: Stomach Content Analysis (MEDITS)

Sampling scheme type: Research survey at sea

Observation type: SciObsOnShore

Time period of validity: from 2025 until 2027

Short description (max 100 words): Planned stomach content analysis of *Merluccius merluccius* samples following the protocols described in STREAM deliverable D.4.1. The aim is to sample 20 full stomachs per length group each year, totalling 60 full stomachs. All samples will be obtained from the annual MEDITS survey, as outlined in Table 4.1 of this WP.

Description of the population

Population targeted: *Merluccius merluccius* samples obtained through the MEDITS survey.

Population sampled: 20 full stomach samples for each length group, totalling 60 full stomachs.

Stratification: The hauls for the research survey are positioned using a depth stratified scheme with random drawing of the positions within each stratum. The number of locations in each stratum is proportional to the occurrence of each stratum in GSA 15, however in some cases (due to damages to the fishing net which would have been noted in the previous years and other logistical difficulties) the planned location of that certain haul may be slightly altered from year to year. The depths are fixed in all areas as strata limits, starting from 10-50m (a), 51-100m (b), 101-200m(c), 201-500m (d) and 501-800m (e).

Sampling design and protocols

Sampling design description: *Merluccius merluccius* samples will be processed in the laboratory in line with the typical procedure for MEDITS samples. Once a sample is processed, the state of the stomach will be reviewed following the STREAM protocol. All full stomachs encountered will be put aside, labelled, and frozen. Once all *M. merluccius* specimens have been thusly sampled, 20 full stomach samples from each of the three length groups will be selected at random. Following the STREAM protocol, the length groups are designated as follows: juveniles (TL<20cm), sub-adults (TL=20-35cm), and adults (TL>35cm). Once selected, each of these stomachs will be analysed accordingly. It is worth mentioning however that not all samples are guaranteed a full stomach, as some stomachs could be everted, regurgitated, or empty, and this could potentially affect the total number of adequate samples per length group suitable for analysis. To attempt to prevent this, in cases where the selected stomach samples are found to be empty, these will be replaced by selecting another stored stomach sample of the appropriate length class at random, up until the store of available stomach samples has been exhausted.

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

Regional coordination: STREAM Deliverable D. 4.1 - Updated protocols and guidelines for collection, processing, and analysis of stomach contents.

Link to sampling design documentation: The sampling design follows the STREAM protocol, available from: https://inale.gr/wp-content/uploads/2021/10/Stomach_contents_STREAM_Del.4.1.pdf.

Design follows international recommendations: Yes.

Link to sampling protocol documentation: The documentation can be accessed at: https://inale.gr/wp-content/uploads/2021/10/Stomach_contents_STREAM_Del.4.1.pdf.

Protocol follows international recommendations: Yes.

Sampling implementation

Recording of refusal rate: NA.

Monitoring of sampling progress within the sampling year: Since this work is linked with MEDITS sampling, this will be in line with the MEDITS protocol.

Data capture

Means of data capture: Length, weight, sex, and sexual maturity are all collected during routine MEDITS sampling. Once the stomach samples have been selected (as listed above), these will be analysed. Stomachs found to be full will be analysed in detail in order to identify the species consumed to the highest degree of accuracy possible whilst following the STREAM protocol. Stomachs found to be regurgitated, or empty will be replaced

wherever possible, however this is limited by the available number of *M. merluccius* samples caught with non-everted stomachs.

Data capture documentation: The documentation can be retrieved from: https://aquaticresources.gov.mt/.

Quality checks documentation: No (2022); The documentation can be retrieved from: https://aquaticresources.gov.mt/.

Data storage

National database: Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system.

International database: NA.

Quality checks and data validation documentation: Yes (The documentation will be available by the end of 2024 which could be accessed via https://aquaticresources.gov.mt/).

Sample storage

Storage description: The samples collected during the survey are marine organisms. When the samples are collected, they are blast frozen and stored in a freezer onboard the vessel until the survey is completed. The samples are then stored in a freezer at a temperature of -25°C until they are ready to be processed. Once these have been processed and the stomachs extracted, the stomach samples will again be frozen until they are ready to be analysed.

Sample analysis: The documentation can be retrieved from: https://aquaticresources.gov.mt/.

Data processing

Evaluation of data accuracy (bias and precision): No (2022); The documentation can be retrieved from: https://aquaticresources.gov.mt/**.**

Editing and imputation methods: No (2022); The documentation can be retrieved from: https://aquaticresources.gov.mt/.

Quality document associated to a dataset: No.

Validation of the final dataset: Information on this will be provided at: https://aquaticresources.gov.mt/.

ANNEX 1.2 - QUALITY REPORT FOR SOCIOECONOMIC DATA SAMPLING SCHEME

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

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

Provide information under each point in all sections.

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

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

Sampling scheme identifier: 1.2.1

Survey Specifications
'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex. *'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.* *'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.* *'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*
Sector name(s): Economic data on fisheries – complementary data collection for fishing activities
Sampling scheme: PSS - Probability Sampling Survey
Variables: Days at sea, Hours fished, Fishing days, kW * Days at sea, GT * Days at sea, kW * Fishing Days, GT * Fishing days, Number of trips, Number of fishing operations, Number of nets(m) * soak time (days), Number of nets / Length, Number of hooks, Number of lines, Numbers of pots, traps, Number of FADs/buoys, Number of support vessels, Live Weight of landings total and per species
Supra region(s): Mediterranean Sea and Black Sea
Survey planning
The probability sampling scheme applies to professional fishing vessels in the Maltese fishing fleet with length overall (LOA) less than 10 m, generally referred to as the small-scale fishing fleet. It is used to derive estimates for representative samples where data are not to be recorded under Control Regulation (EC) No 1224/2009. The probability sampling survey, referred to as the Catch and Effort Assessment Survey (CAS), was designed with the objective to provide monthly catch and effort estimates for the small-scale fleet, which do not have a logbook system.

Survey design and strategy

Statistical population

- The population under study is the group of professional fishing vessels that appear in the Maltese Fishing Vessel registry and that in the reference period had a valid license to carry out maritime fishing activity.
- The statistical unit is the fishing vessel.

Geographical scope

- The geographical scope of the study is limited to the Mediterranean and Black Sea region. This region is divided into several geographical subareas (GSA) as defined by the General Fisheries Commission for the Mediterranean (GFCM).

Temporary coverage

- The statistics are carried out on an annual basis.

Reference period

- The reference period for the data is the calendar year.
- Malta provides days at sea for each vessel segment, by quarter and by geographical origin of the catch as defined by the General Fisheries Commission for the Mediterranean (GFCM) geographical subareas (GSA).
- The collection of days at sea depends on the LOA of the fishing vessel, where such data is either reported in logbooks for the professional fishing vessels with LOA greater than 10 m, or collected via probability sampling surveys of landings for the professional fishing vessels with LOA less than 10 m. Vessels having special authorisations (lampara, vessels using fish aggregating devices (FADs), vessels using drifting longlines targeting bluefin tuna or swordfish, and vessels using seine nets) are obliged to also use logbooks to report their catches.

Sampling Approach

- The population under study consists of the professional fishing vessels with LOA less than 10 m during the survey reference year, which are subjected to a probability sampling survey consisting of a structured multivariate questionnaire via direct interviews and/or phone calls with fishers. The sample of 10% of the respective population is (stratified) randomly selected every year by quarter.
- The sampling unit is a single vessel which is randomly selected from the Fishing Vessel Register.

Collection of data

- Face to face interviews and/or phone calls are conducted with the vessel owners every fortnight. Information on catches, effort in fishing days, by type of gear, fishing areas and activity is collected. This methodology of obtaining data supplements the data from logbooks, the fish market, and other official sources. The data obtained from the sample is then raised to the population.
- The objective of the survey is to estimate economic variables related to the stocks listed Table 1 of the Commission Delegated Decision (EU) 2021/1167. Data is collected to estimate overall annual commercial landings by species, by quarter and by geographical origin of the catch. This data collection enables the correlation of the catch variables to the effort variables.
- The following fishing activity variables are collected by means of a direct survey:
  - Days at sea;
  - Fishing days;
  - Gear used (including size of gear);
  - Geographical position of the catch;
  - Species caught; and
  - Weight of landings per species. The annual average price per species is calculated by dividing the annual sum of the total value in Euro per species by the sum of the total weight in kilograms of the same species, as obtained from the sales vouchers.

Estimation design

Stratification:

For streamlining purposes so that the data time-series is comparable over time, the criteria of season and of the fleet segmentation as described in Appendix IV of Commission Decision EC 93/2010 is used, which includes registration class (full-time/part-time), length segment and fleet segmentation based on the gears registered in the fleet register.

Sampling rate:

The sampling rate, which varies according to the number of vessels in each fleet segment in the reference year, is indicated in Table 1.

Table 1: Sampling rate of professional fishing vessels less than 10m LOA.

Fleet segment	Sample number	Sampling strategy
< 5 vessels	Census	All year round
6 – 50 vessels	Census	All divided per quarter
51 – 200 vessels	10%	Divided per quarter
> 200 vessels	50 vessels	Divided per quarter

Estimating procedures:

From the vessels sampled, data on catch and effort is raised to the total fleet population. Raising is based on a weighting factor attributed to the total fleet segment. Both datasets (logbook and sampling approach) are combined in order to obtain an estimate of the total values.

Non-responses:

In case of non-responses, these are replaced with another vessel categorised in the same fleet segment.

Error checks

- Data collected from the CAS is cross-checked with data originating from the market sales notes and direct sales vouchers. In addition, information collected may also be cross-checked directly with the fishers.
- The submitted data will be evaluated thoroughly, and any outliers will be identified and possibly removed after re-checking with the data source.
- Data checking and validation is carried out manually by the officers responsible of the different data collection units within Aquatic Resources Malta. Data checks include checks for duplicate data entries and checks for data format.

Data storage and documentation

- Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. There are currently discussions at the regional level to set up a regional database, whereby Malta is an active participant in the Regional Coordination Group (RCG) meetings.
- Additional methodological documentation can be accessed via the Aquatic Resources Malta website via the following link: https://aquaticresources.gov.mt/.

Revision

The survey is carried out annually. The population under study is based on the population of fishing vessels listed in the fishing fleet register at the start of the reference year, therefore the sample population varies annually.

Confidentiality

Confidentiality policy

- The objective of the CAS questionnaire is to comply with the requirements of marine fishing of Council Regulation 199/2008 which establishes a community framework for the collection, management, and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy and repealed by Regulation (EU) 2017/1004.
- The necessary administrative, logical, and physical measures are adopted in order to effectively protect the confidentiality of data from the data collection and until its publication, as well as its storage.
- Following guidelines by STECF, for important segments with distinct characteristics, clustering of segments will be carried out for confidentiality reasons. Clustering will be carried out post-data collection, meaning that the sampling population is unaffected. Clustering, or "fleet segment aggregation", is required when compiling the annual Fleet Economic Data Call (STECF 15-07).
- Where ARM is required to process personal data (as defined in Regulation (EU) 2016/679, the 'GDPR') for the performance, implementation, and execution of its deliverables, it will be carried out in accordance with all applicable data protection legislation, including the GDPR and the Data Protection Act (Chapter 586, Laws of Malta).

Confidentiality with external users

- Data collection for research purposed by ARM and which is not personal data as provided by the Data Protection Act, Chapter 586 of the Laws of Malta and any other applicable laws in relation to personal data as in force from time to time in Malta.
- In terms of data requested by end-users, all data processed and exchanged is considered as confidential amongst themselves and may only be disclosed subject to common written agreement between the parties in aggregated format.

References

Scientific, Technical and Economic Committee for Fisheries (STECF). 2015. Annual Economic Report on the EU Fishing Fleet (STECF-15-07). Publications Office of the European Union, Luxembourg, 434 pp. Retrieved from: https://stecf.jrc.ec.europa.eu/documents/43805/1034590/2015-07_STECF+15-07+ +AER+2015_JRCxxx.pdf

Sampling scheme identifier: 1.2.2

Survey Specifications

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

Sector name(s):
Economic data on fisheries

Sampling scheme:
C - Census

Variables:
Days at sea; Gross value of landings; Mean age of vessels; Mean LOA of vessels; Number of vessels; Total vessel power; Total vessel tonnage

Supra region(s):
Mediterranean Sea and Black Sea

Survey planning

The census applies to all professional fishing vessels in the professional Maltese fishing fleet in conformity with the Control Regulation (EC) No 1224/2009. The population comprises all active and inactive vessels registered in the Union Fishing Fleet Register as defined in Commission Implementing Regulation (EU) 2017/218 on 31 December of the reporting year and vessels that do not appear in the Register at that date but have fished at least one day during the reporting year.

Survey design and strategy

The data source of the number of vessels, total vessel power, total vessel tonnage, mean age and mean LOA of vessels is the Maltese fishing fleet register. The variable days at sea is collected via logbooks for vessels with LOA > 10 m, whilst the variable gross value of landings is collected via sales notes, referring to official local fish market and direct sales data.

Statistical population

- The population under study is the group of professional fishing vessels that appear in the Maltese Fishing Vessel registry and that in the reference period had a valid license to carry out maritime fishing activity. The statistical unit is the fishing vessel.

Geographical scope

- The geographical scope of the study is limited to the Mediterranean and Black Sea region. This region is divided into several geographical subareas (GSA) as defined by the General Fisheries Commission for the Mediterranean (GFCM).

Temporary coverage

- The statistics are carried out on an annual basis.

Reference period

- The reference period for the data is the calendar year.

Estimation of the Gross value of landings

- Malta provides data on commercial landings by weight and monetary value for each segment by species, by quarter and by geographical origin of the catch as defined by the General Fisheries Commission for the Mediterranean (GFCM) geographical subareas (GSA).
- Landings values are also based on data derived from the official local fish market and direct sales notes data.

- All information on sold fish is registered and stored in the sales notes database and includes, among others, the following information:
    - Vessel registration number;
    - Landing place, date and buyer;
    - Species;
    - Weight in kilo; and
    - Value in Euro.

Estimation design

The variables are collected as part of the obligations of the Control Regulation (EC) No 1224/2009.

Error checks

- Data collected from paper logbooks is validated at data inputting stage and information collected may also be cross-checked directly with the fishers. The e-logbook software contains integrated data validation tools.
- The submitted data will be evaluated thoroughly, and any outliers will be identified and possibly removed after re-checking with the data source.
- Data checking and validation is carried out manually by the officers responsible of the different data collection units within Aquatic Resources Malta. Data checks include checks for duplicate data entries and checks for data format.

Data storage and documentation

- Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. There are currently discussions at the regional level to set up a regional database, whereby Malta is an active participant in the Regional Coordination Group (RCG) meetings.
- Additional methodological documentation can be accessed via the Aquatic Resources Malta website via the following link: https://aquaticresources.gov.mt/

Revision

The population under study is the entire population of fishing vessels listed in the fishing fleet register at the start of the reference year. The reference period for the data is the calendar year. Data collected in line with Control Regulation (EC) No 1224/2009.

Confidentiality

Confidentiality policy

- The necessary administrative, logical, and physical measures are adopted in order to effectively protect the confidentiality of data from the data collection and until its publication, as well as its storage.
- Following guidelines by STECF, for important segments with distinct characteristics, clustering of segments will be carried out for confidentiality reasons. Clustering will be carried out post-data collection, meaning that the sampling population is unaffected. Clustering, or "fleet segment aggregation", is required when compiling the annual Fleet Economic Data Call (STECF 15-07).
- Where the ARM is required to process personal data (as defined in Regulation (EU) 2016/679, the 'GDPR') for the performance, implementation, and execution of its deliverables, it will be carried out in accordance with all applicable data protection legislation, including the GDPR and the Data Protection Act (Chapter 586, Laws of Malta).

Confidentiality with external users

- Data collection for research purposed by the Aquatic Resources Malta and which is not personal data as provided by the Data Protection Act, Chapter 586 of the Laws of Malta and any other applicable laws in relation to personal data as in force from time to time in Malta.

• In terms of data requested by end-users, all data processed and exchanged is considered as confidential amongst themselves and may only be disclosed subject to common written agreement between the parties in aggregated format.
References
Scientific, Technical and Economic Committee for Fisheries (STECF). 2015. Annual Economic Report on the EU Fishing Fleet (STECF-15-07). Publications Office of the European Union, Luxembourg, 434 pp. Retrieved from: https://stecf.jrc.ec.europa.eu/documents/43805/1034590/2015- 07_STECF+15-07+-+AER+2015_JRCxxx.pdf.

Sampling scheme identifier: 1.2.3

Survey Specifications

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

Sector name(s):

Socio-economics data on Fisheries

Sampling scheme:

Census

Variables:

- Consumption of fixed capital, Energy consumption, Energy costs, Full-time equivalent (FTE), Gross debt, Income from leasing out quota or other fishing rights, Investments in tangible assets (net purchase of assets), Lease/rental payments for quota or other fishing rights, Number of fishing enterprises/units, Operating subsidies, Other income, Other non-variable costs, Other variable costs, Paid labour, Personnel costs, Repair and maintenance costs, Subsidies on investments, Total hours worked per year (optional), Total value of assets, Unpaid labour, Value of physical capital, Value of quota and other fishing rights, Value of unpaid labour, Employment by age, Employment by employment status, Employment by gender, Employment by level of education, Employment by nationality, FTEs by gender, Unpaid labour by gender.
- The data source for all social and economic variables listed above, excluding 'Number of fishing enterprises/units', 'Operating subsidies', 'Subsidies on Investment', 'Consumption of fixed capital', and 'Value of physical capital' shall be collected via an annual survey conducted on a one-to-one interview basis, with all the fishers for all the vessels in the population. A Census-based survey, which as specified in the 'Handbook on sampling design and estimation methods for economic data collection in fisheries statistics questionnaire' implies a survey directed to the entire population, remains the ideal data collection scheme method for Malta.
- It is important to emphasise that these questionnaires are conducted on a voluntary basis, given the lack of a national legal framework for data collection covered for this workplan. Also given the lack of framework for the data collection of economic and social variables for the fisheries sector, fishers are not required to maintain data structured in a format ideal for the collection of the variables specified in Tables 7 and 9. This may therefore result in responses and achieved sample rates of less than 100% for the variables listed above for the identified segments/clusters listed in Table 5.1.
- In cases of sold units, Malta shall attempt to conduct the survey with both the current and previous owner/s of the unit to ensure that the entire reference period is covered.
- Other possibilities for not achieving a 100% sampling/response rate, other than refusals to participate in the annual survey, may be derived from deceased, unlocalisable and/or units which could not be carried out due to owner falling ill.

Supra region(s):

Mediterranean Sea and Black Sea

Survey planning

- All of the economic and social variables listed above and as specified in Table 5a and Table 6 of Commission Delegated Decision 2019/910 will be collected through a questionnaire targeting 100% of the population, that is, all professional fishing vessels in the professional Maltese fishing fleet in in conformity with the Control Regulation (EC) No 1224/2009. This implies that the target population and frame population are the same.
- For economic and social variables, the population shall comprise of all active vessels registered in the Union Fishing Fleet Register as defined in Commission Implementing Regulation (EU) 2017/218 on 31 December of the reporting year and vessels that do not appear in the Register at that date but have

fished at least one day during the reporting year.

Survey design and strategy

- The data source for all social and economic variables listed above, excluding 'Number of fishing enterprises/units', 'Operating subsidies', 'Subsidies on Investment', 'Consumption of fixed capital', and 'Value of physical capital' shall be collected via an annual survey conducted on a one-to-one interview basis, with all the fishers for all the vessels in the population. A Census-based survey, which as specified in the 'Handbook on sampling design and estimation methods for economic data collection in fisheries statistics questionnaire' implies a survey directed to the entire population, remains the ideal data collection scheme method for Malta.
- It is important to emphasise that these questionnaires are conducted on a voluntary basis, given the lack of a national legal framework for data collection covered for this workplan. Also given the lack of framework for the data collection of economic and social variables for the fisheries sector, fishers are not required to maintain data structured in a format ideal for the collection of the variables specified in Tables 7 and 9. This may therefore result in responses and achieved sample rates of less than 100% for the variables listed above for the identified segments/clusters listed in Table 5.1.
- In cases of sold units, Malta shall attempt to conduct the survey with both the current and previous owner/s of the unit to ensure that the entire reference period is covered.
- Other possibilities for not achieving a 100% sampling/response rate, other than refusals to participate in the annual survey, may be derived from deceased, unlocalisable and/or units which could not be carried out due to owner falling ill.

Estimation design

- Given that the 100% target sampling rate/response for all the variables listed in Tables 7 and 9 may not always be attained for the applicable segments/clusters due to the constraints provided above, these unattained unit and the respective variables shall be estimated using imputation techniques in line with the 'Handbook on sampling design and estimation methods for economic data collection in fisheries statistics questionnaire.' For treatment of nonresponse, Malta currently uses hot-deck imputation along with regression imputation techniques, depending on the variable type and the respective nonresponse rate. R Scripts shall be used to ensure that the imputation carried out is robust and does not negatively impact aggregation. Malta is continuously developing and exploring imputation techniques to enhance the quality of its data set, and such changes will be reflected in the upcoming Work Plans.
- The variable 'Value of physical capital' and 'consumption of physical capital' shall be estimated using the Perpetual Inventory Method (PIM), this estimation shall be applied to both active and inactive units. Variables to enable this estimation shall be obtained using a combination of survey-based data collection and administrative sources. The variable value of physical capital shall also contribute to the calculation of the variable 'Total value of assets'. This variable shall be derived using the value of physical capital and the data collected for investments made (i.e. the capital expenditure incurred) during the reference year through the annual survey.
- The variables 'Full-time equivalent (FTE)' and 'FTEs by gender' shall be calculated against the national threshold of 2,080 hours per FTE and shall use relevant variables collected through the annual survey to determine the value for FTE. The calculations shall follow the most recent guidelines provided in the Guidance Document for the Fishing Fleet and the Guidance Document for the Social Variables developed by RCG ECON.
- The variable 'Value of Unpaid Labour' shall be derived from relevant variables collected through the annual survey and by following the calculation specified in the most recent guidelines provided in the Guidance Document for the Fishing Fleet.
- The variables 'Number of fishing enterprises/units', 'Operating subsidies', and 'Subsidies on Investment' shall be sourced through administrative sources mainly the Ministry for Agriculture, Fisheries and Animal Rights or any other relevant entities within the public sector of Malta.

Error checks

- Data quality checking is carried out by officers responsible for the collection of social and economic data. Manual checks shall be carried at data inputting stage and information collected may be cross-checked directly with fishers where necessary. Post-data inputting Manual checks and R scripts will be

used to identify and possibly remove any outliers to ensure quality data submissions. Where possible, cross-checks against administrative sources that allow comparability of certain variables shall also be used.

- Additionally, targeting and attempting to survey 100% of the population, should assure certain degrees of precision in the data set. In order to ensure consistency, the same type of data collection methods will be used year on year to collect data on the respective economic variables for the period of this Work Plan.

Data storage and documentation

- Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. The Aquatic Resources Malta has initiated the transitioning phase to a fully-fledged web-based database system. There are currently discussions at the regional level to set up a regional database, whereby Malta is an active participant in the Regional Coordination Group (RCG) meetings.
- Additional methodological documentation can be accessed via the Aquatic Resources Malta https://aquaticresources.gov.mt/.

Revision

Methodological reviews are expected to be conducted following the end of the Work Plan period i.e. 2024, although recommendations given by RCG ECON will be reviewed and implemented where applicable.

Confidentiality

Confidentiality Policy

- The necessary administrative, logical, and physical measures are adopted in order to effectively protect the confidentiality of data from the data collection and until its publication, as well as its storage.
- Where the ARM is required to process personal data (as defined in Regulation (EU) 2016/679, the 'GDPR') for the performance, implementation, and execution of its deliverables, it will be carried out in accordance with all applicable data protection legislation, including the GDPR and the Data Protection Act (Chapter 586, Laws of Malta).

Confidentiality with External Users

- Data collection for research purposed by the Aquatic Resources Malta and which is not personal data as provided by the Data Protection Act, Chapter 586 of the Laws of Malta and any other applicable laws in relation to personal data as in force from time to time in Malta.
- In terms of data requested by end-users, all data processed and exchanged is considered as confidential amongst themselves and may only be disclosed subject to common written agreement between the parties.
- Aggregated economic and social data on the fisheries sector shall be disclosed fully with the Malta's National Statistics Office as required by the Malta Statistics Authority Act and Regulation EC 2015/759 and as stated in the Memorandum of Understanding between the National Statistics Office and the Aquatic Resources Malta.

References

Guidance Document for the Fishing Fleet - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/fleet

Guidance Document for the Social Variables - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social

Harmonization of methodologies for sampling design and estimation methods for fleet and aquaculture economic data collection - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/handbook-on-methodology

Sampling scheme identifier: 1.2.4

Survey Specifications

Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection for fishing activities and processing, as in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to the 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):
Aquaculture

Sampling scheme:
Census

Variables:

Consumption of fixed capital, Energy costs. Financial expenditures, Financial income, Fish feed used, Full-time equivalent (FTE), Gross debt, Gross sales per species, Investments in tangible assets (net purchase of assets), Livestock used, Number of enterprises by size category, Number of hours worked by employees and unpaid workers (optional), Operating subsidies, Other income, Other operating costs, Paid labour, Personnel costs, Raw material: feed costs, Raw material: livestock costs, Repair and maintenance costs, Subsidies on investments, Total value of assets, Unpaid labour, Value of unpaid labour, Weight of sales per species, Employment by age, Employment by employment status, Employment by gender, Employment by level of education, Employment by nationality, FTEs by gender, and Unpaid labour by gender.

Supra region(s):
Mediterranean Sea and Black Sea

Survey planning

The population for the collection of economic and social data in the aquaculture sector includes all enterprises whose primary activity is defined according to the European classification of economic activities NACE codes 03.21 and 03.22 and who operate for profit. The population for collection of this data will be the aquaculture enterprises registered with the Aquatic Resources Malta within the Ministry for Agriculture, Fisheries and Animal Rights. Economic data will be collected on an annual basis while social data will be collected every three years.

Survey design and strategy

- Postal/electronic questionnaires will be sent to all aquaculture operators to collect all the variables requested. The frame population of aquaculture operators will be derived from a count of the number of enterprises registered. Dormant units will be excluded. This statistic will include all units active during at least a part of the reference period. This implies that the survey is targeting 100% of the population, although not all the fish farms forming part of the total population will be part of the survey to be conducted given that two of the eight registered aquaculture farms are inoperative. It is important to emphasise that these questionnaires are conducted on a voluntary basis, given the lack of a national legal framework for data collection under this workplan. This may therefore result in responses and achieved sample rates of less than 100% for the variables listed above.
- Aquaculture farms in Malta can be segmented into three segments according to the species farmed and technique used namely: sea bream and sea bass cages, Tuna cages and other marine fish cages. The main species farmed include Atlantic bluefin tuna, sea bass, sea bream, meagre and amberjack.

Estimation design

- Given that the 100% target sampling rate/response for all the variables listed in Tables 6 and 7 may not always be attained for the applicable segments due to the constraints provided above, these unattained unit and the respective variables shall be estimated using imputation techniques in line with the 'Handbook on sampling design and estimation methods for economic data collection in fisheries statistics questionnaire.' For treatment of nonresponse, Malta currently uses hot-deck imputation along with regression imputation techniques, depending on the variable type and the respective nonresponse rate. R Scripts shall be used to ensure that the imputation carried out is robust and does not negatively impact aggregation. Malta is continuously developing and exploring

imputation techniques to enhance the quality of its data set, and such changes will be reflected in the upcoming Work Plans.

- Calculations for imputed values shall follow the most recent guidelines provided in the Guidance Document for the Aquaculture and the Guidance Document for the Social Variables developed by RCG ECON.

References

Harmonization of methodologies for sampling design and estimation methods for fleet and aquaculture economic data collection - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/handbook-on-methodology

Guidance Document for the Aquaculture - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/aqua

Guidance Document for the Social Variables - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social

Error checks

- Data quality checking is carried out by officers responsible for the collection of social and economic data. Manual checks shall be carried at data inputting stage and information collected may be cross-checked directly with fishers where necessary. Post-data inputting Manual checks and R scripts will be used to identify and possibly remove any outliers to ensure quality data submissions. Where possible, cross-checks against administrative sources that allow comparability of certain variables shall also be used.
- Additionally, targeting and attempting to survey 100% of the population, should assure certain degrees of precision in the data set. In order to ensure consistency, the same type of data collection methods will be used year on year to collect data on the respective economic variables for the period of this work plan.

Data storage and documentation

- Progress has begun on obtaining a fully-fledged database, in order to transit from the current data storage system. The Aquatic Resources Malta has initiated the transitioning phase to a fully-fledged web-based database system. There are currently discussions at the regional level to set up a regional database, whereby Malta is an active participant in the Regional Coordination Group (RCG) meetings.
- Additional methodological documentation can be accessed via the Aquatic Resources Malta website via the following link: https://aquaticresources.gov.mt/

Revision

- Survey is carried out annually. The population shall be determined using internal sources within the Aquatic Resources Malta, pre-distribution of the survey, to determine which aquaculture operators where active during the reference year.
- Methodological reviews are expected to be conducted following the end of the Work Plan period i.e. 2024, although recommendations given by RCG ECON will be reviewed and implemented where applicable.

Confidentiality

Confidentiality Policy

- The necessary administrative, logical and physical measures are adopted in order to effectively protect the confidentiality of data from the data collection and until its publication, as well as its storage.
- Where the Aquatic Resources Malta is required to process personal data (as defined in Regulation (EU) 2016/679, the 'GDPR') for the performance, implementation and execution of its deliverables, it will be carried out in accordance with all applicable data protection legislation, including the GDPR and the Data Protection Act (Chapter 586, Laws of Malta).

Confidentiality with External Users

- Data collection for research purposed by the Aquatic Resources Malta and which is not personal data as provided by the Data Protection Act, Chapter 586 of the Laws of Malta and any other applicable laws in relation to personal data as in force from time to time in Malta. In terms of data requested by end-users, all data processed and exchanged is considered as confidential amongst themselves and may only be disclosed subject to common written agreement between the parties.
- Aggregated economic and social data on the aquaculture sector shall be disclosed fully with the Malta's National Statistics Office as required by the Malta Statistics Authority Act and Regulation EC 2015/759 and as stated in the Memorandum of Understanding between the National Statistics Office and ARM.

Sampling scheme identifier: 1.2.5

Survey Specifications

'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection for fishing activities and processing, as in the EU MAP Delegated Decision annex.
'Sampling scheme' refers to the 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):
Fish Processing

Sampling scheme:
Census

Variables:
Consumption of fixed capital, Energy costs, Financial expenditures, Financial income, Full- time equivalent (FTE), Gross debt, Gross investments, Number of enterprises, Number of enterprises by size category, Number of hours worked by employees and unpaid workers (optional), Number of persons employed, Operating subsidies, Other income, Other operating costs, Payment for external agency workers, Personnel costs, Purchase of fish and other raw material for production, Subsidies on investments, Total value of assets, Turnover, Unpaid labour, Value of raw material by country of origin (domestic, other EU or non-EU), Value of raw material by production environment (capture based fishery and aquaculture sector), Value of raw material by species, Value of raw material by type of processed material (fresh, frozen and semi processed materials), Value of unpaid labour, Weight of raw material by country of origin (domestic, other EU or non-EU), Weight of raw material by production environment (capture based fishery and aquaculture sector), Weight of raw material by species, Weight of raw material by type of processed material (fresh, frozen and semi processed materials), Weight of sales per species, Employment by age, Employment by employment status, Employment by gender, Employment by level of education, Employment by nationality, FTEs by gender, Unpaid labour by gender, Number of Enterprises (non-main), Turnover attributed to fish processing (non-main).

Supra region(s):
Mediterranean Sea and Black Sea

Survey planning

The population for the collection of economic and social data will be based on enterprises entailed in processing fisheries products as recorded in the Maltese Business Directory. Both 'Main activity' and 'Non-main activity' enterprises will be derived using this methodology. Economic data will be collected on an annual basis whereas social data shall be collected every three years.

Survey design and strategy

Postal/Electronic questionnaires will be sent to all fish processing enterprises to collect all the variables requested. The implies that all economic and social variables for the fish processing industry, both for enterprises segmented under 'main activity' and 'non-main activity' will be collected through a census whereby all fish processing companies in the population will be surveyed. The frame and target population in this case will not differ. It is important to emphasise that these questionnaires are conducted on a voluntary basis, given the lack of a national legal framework for data collection under this workplan. This may therefore result in responses and achieved sample rates of less than 100% for the variables listed above.

Estimation design

- Given that the 100% target sampling rate/response for all the variables listed in Tables 10 and 6 may not always be attained for the applicable segments due to the constraints provided above, these unattained unit and the respective variables shall be estimated using imputation techniques in line with the 'Handbook on sampling design and estimation methods for economic data collection in fisheries statistics questionnaire.' For treatment of nonresponse, Malta currently uses hot-deck imputation along with regression imputation techniques, depending on the variable type and the respective nonresponse rate. R Scripts shall be used to ensure that the imputation carried out is robust and does not negatively impact aggregation. Malta is continuously developing and exploring imputation techniques to enhance the quality of its data set, and such changes will be reflected in the upcoming Work Plans.

- Calculations for imputed values shall follow the most recent guidelines provided in the Guidance Document for the Fish Processing and the Guidance Document for the Social Variables developed by RCG ECON.

References

Harmonization of methodologies for sampling design and estimation methods for fleet and aquaculture economic data collection - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/handbook-on-methodology

Guidance Document for the Fish Processing - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/proind

Guidance Document for the Social Variables - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social

Error checks

- Data quality checking is carried out by officers responsible for the collection of social and economic data. Manual checks shall be carried at data inputting stage and information collected may be cross-checked directly with fishers where necessary. Post-data inputting Manual checks and R scripts will be used to identify and possibly remove any outliers to ensure quality data submissions. Where possible, cross-checks against administrative sources that allow comparability of certain variables shall also be used.
- Additionally, targeting and attempting to survey 100% of the population, should assure certain degrees of precision in the data set. In order to ensure consistency, the same type of data collection methods will be used year on year to collect data on the respective economic variables for the period of this Work Plan.

Data storage and documentation

- The Aquatic Resources Malta has initiated the transitioning phase to a fully-fledged web-based database system. There are currently discussions at the regional level to set up a regional database, whereby Malta is an active participant in the Regional Coordination Group (RCG) meetings.
- Additional methodological documentation can be accessed via the Aquatic Resources Malta website via the following link: https://aquaticresources.gov.mt/.

Revision

Methodological reviews are expected to be conducted following the end of the Work Plan period i.e. 2024, although recommendations given by RCG-Econ will be reviewed and implemented where applicable.

Confidentiality

Confidentiality Policy

- The necessary administrative, logical and physical measures are adopted in order to effectively protect the confidentiality of data from the data collection and until its publication, as well as its storage.
- Where the Aquatic Resources Malta is required to process personal data (as defined in Regulation (EU) 2016/679, the 'GDPR') for the performance, implementation and execution of its deliverables, it will be carried out in accordance with all applicable data protection legislation, including the GDPR and the Data Protection Act (Chapter 586, Laws of Malta).

Confidentiality with External Users

- Data collection for research purposed by the Aquatic Resources Malta and which is not personal data as provided by the Data Protection Act, Chapter 586 of the Laws of Malta and any other applicable laws in relation to personal data as in force from time to time in Malta.
- In terms of data requested by end-users, all data processed and exchanged is considered as confidential amongst themselves and may only be disclosed subject to common written agreement between the parties.

References
Guidance Document for the Fishing Fleet - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/fleet Guidance Document for the Social Variables - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social Harmonization of methodologies for sampling design and estimation methods for fleet and aquaculture economic data collection - https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/handbook-on-methodology.