Department of Fisheries and Aquaculture

Ministry for Sustainable Development, the Environment and Climate Change

Malta's Work Plan for data collection in the fisheries and aquaculture sectors 2020-2021

Council (EU) No 2017/1004 of 17 May 2017

concerning 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

Commission Regulation (EC) No 665/2008 of 14 July 2008

laying down detailed rules for the application of Council Regulation (EC) No 199/2008

Commission Delegated Decision (EU) 2019/910 of 13 March 2019 establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors

Commission Implementing Decision (EU) 2019/909 of 18 February 2019 establishing the list of mandatory research surveys and thresholds for the purposes of the multiannual Union programme for the collection and management of data in the fisheries and aquaculture sectors

Malta, October 2019

Maritime and Fisheries Operational Programme 2014-2020
Project part-financed by the European Union
European Maritime and Fisheries Fund
Co-financing rate: 80% European Union Funds; 20% National Funds

Investing in sustainable fisheries and aquaculture

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SECTION 1: BIOLOGICAL DATA

Pilot Study 1: Relative share of catches of recreational fisheries compared to commercial fisheries

General comment: This Box fulfills paragraph 4 of Chapter V of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (a) of this Decision.

1. Aim of pilot study

The aim of the pilot study was to assess the share of catches from recreational fisheries in relation to commercial fisheries. Specifically, the aim of this pilot study was to determine which species from Table 3 of the Commission Implementing Decision (EU) 2016/1251 are removed from the sea by the recreational fisheries, to determine the total removal of these species from the sea by the recreational fisheries, and to evaluate the biomass of the species caught.

2. Duration of pilot study

The RCG Med&BS hghlighted the need that pilot studies in the region are finalised so that the outcomes can be used to generate regular data collection. Malta has already carried out the pilot study in 2017 and 2018.

3. Methodology and expected outcomes of pilot study

Malta has fishing licenses for vessels carrying out recreational fisheries. The table below shows the species that were listed in Table 3 of the Commission Implementing Decision (EU) 2016/1251 and whether they are caught from the shore and/or by boats.

Species	**Species caught by commercial fisheries in the reference years (2013-2015)**	**Caught from the shore**	**Caught from vessels**	**Depth range of species (m) (Froese, & Pauly, 2016).**
Demersal elasmobranchs	Y	N	Y	
Pelagic elasmobranchs	Y	N	Y	
Katsuwonus pelamis	Y	N	Y	0 - 260
Thunnus alalunga	Y	N	Y	0 - 600
Thunnus thynnus	Y	N	Y	0 - 985
Xiphias gladius[1]	Y	N	Y	0 - 800
Prionace glauca	Y	N	Y	1 - 1000

[1] In Malta no recreational vessels are authorised to fish for swordfish.

Auxis rochei	Y	N	Y	10 - NA
Sarda sarda	Y	N	Y	80 - 200
Euthynnus alleteratus	Y	N	Y	1 - 150
Auxis thazard	Y	N	Y	50 - NA
Coryphaena hippurus	Y	N	Y	0 - 85
Anguilla anguilla	N	NA	NA	
Thunnus albacares	N	NA	NA	
Thunnus obesus	N	NA	NA	
Makaira nigricans (or mazara)	N	NA	NA	
Istiophorus albicans	N	NA	NA	
Kajikia albida	N	NA	NA	
Thunnus atlanticus	N	NA	NA	
Orcynopsis unicolor	N	NA	NA	
Scomberomorus brasiliensis	N	NA	NA	
Scomberomorus regalis	N	NA	NA	
Scomberomorus cavalla	N	NA	NA	
Scomberomorus tritor	N	NA	NA	
Scomberomorus maculatus	N	NA	NA	
Acanthocybium solandri	N	NA	NA	

The table shows that none of the species listed are caught from the shore. Spearfishing was also considered, but none of the species concerned are targeted by this type of recreational fishing. In Malta there is no recreational fishing targeting blue shark and elasmobranchs.

Therefore, although the RCM Med&BS 2016 recommended that the target population shall consist of all types of recreational fishing, due to the reasons presented above, Malta only carried out a pilot study on recreational vessels.

The pilot study was carried out in two phases. The first phase consisted of a survey conducted through interviews; the core variables (number of heads and weight per species caught in a month) were collected. Additionally, a number of other variables, for example seasonality, were collected in order to aid the planning and sampling design for the eventual collection of the required variables with regard to recreational fisheries. The second phase of the pilot study consisted of a trial run of the actual data collection procedure in order to mitigate any problems in the year of the actual collection of this data.

The RCG Med&BS agreed that a common framework for sampling methodology on recreational fisheries is required to ensure that the data is comparable between Member States.

References:

Froese, R. & Pauly, D. Editors. (2016). FishBase. version (06/2016). World Wide Web electronic publication. URL: www.fishbase.org

Text Box 1E: Anadromous and catadromous species data collection in fresh water

General comment: This Box fulfills paragraph 2 points (b) and (c) of Chapter III of the multi-annual Union programme and Article 2 of this Decision.
Method selected for collecting data. NA

SECTION 1: BIOLOGICAL DATA

Pilot Study 2: Level of fishing and impact of fisheries on biological resources and marine ecosystem

General comment: This Box fulfills paragraph 3 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (b) of this Decision.

For all types of fisheries, incidental by-catch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements, including the species listed in Table 1D, including absence in the catch, during scientific observer trips on fishing ships or by the fishers themselves through logbooks (pursuant to Chapter III, 3(a) of the Commission Delegated Decision (EU) 2019/910).

Following the 2016 Recommendation of RCM Med&BS-LP on pilot studies for the assessment of incidental catches of birds, mammals, reptiles and fish, the RCG Med&BS-LP 2017 has agreed to carry out the following pilot studies:

- 2018: Pilot study for assessing incidental catches of vulnerable species from bottom trawlers
- 2019: Pilot study for assessing incidental catches of vulnerable species from longlines
- 2020: Pilot study for assessing incidental catches of vulnerable species from set nets (gillnets).

The proposed metiers and year of sampling are in agreement with the GFCM planned incidental catch sampling programme which will be performed in the period 2018-2020 (Mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries).

1. Aim of pilot study

The aim of the pilot studies are to assess the impact of main fisheries on the vulnerable species and to collect accurate information on these species in terms of quantities, gears, temporal and spatial areas.

2. Duration of pilot study

Each pilot study related to the selected metier will have a duration of one year.

3. Methodology and expected outcomes of pilot study

In overall, the methodology that will be followed for collecting data on incidental catch includes the collection of data from:

- Observer programmes for the identified fleet
- Logbook completion by fishers
- Interviews with fishers.

The guidelines for monitoring incidental catch of vulnerable species and processing the collected data, will be based both on the outputs of the EU MARE/2014/19 project for the Med&BS, and the GFCM guidelines on incidental catch (under preparation). Data to be collected will include: identification of species, number and weight (when possible) of individuals, gear specifications, location and timing of catches.

Expected outcomes

With the implementation of the planned pilot studies, it is expected that accurate information will be collected on the species incidentally caught, as well as their quantities, locations and the timing of such catches. This information will increase the knowledge on incidental catch in the region. Based on the results, systematic monitoring programme may be proposed for certain metiers/areas.

The knowledge gained under the pilot study and possible future systematic sampling will be very useful for the formulation of possible management measures for minimising incidental catch of vulnerable species in the region.

Pilot Study 2: Level of fishing and impact of fisheries on biological resources and marine ecosystem

General comment: This Box fulfills paragraph 3 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (b) of this Decision.

Data for estimating the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems, such as effects on non-commercial species, predator-prey relationships and natural mortality of fish species in each marine region (pursuant to Chapter III, 3(c) of the Commission Delegated Decision (EU) 2019/910).

1. Aim of pilot study

The aim is to estimate the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems.

2. Duration of pilot study

NA

3. Methodology and expected outcomes of pilot study

RCM Med&BS 2016 noted that to date, no end-user indicated the need of such data. In the case of such requirements, the methodology as outlined by the MARE/2014/19 Project with regard to stomach content analysis can be followed.

RCM Med&BS 2016 also notes that the following three indicators outlined by the MARE/2014/19 Project can be calculated from the data available if and when there is a request from end-users:

(i) Typical length

(ii) Kempton Q_{75} index

(iii) N_{90} index

Text Box 1G: List of research surveys at sea

General Comment: This Box fulfills Chapter IV of the multi-annual Union programme and Article 2 and Article 7 paragraph (3) of this Decision. It is intended to specify which reseach surveys at sea set out in Table 10 of the multi-annual Union programme will be carried out. Member States shall specify whether the research survey is included in Table 10 of the multi-annual Union programme or whether it is an additional survey.
International bottom trawl survey in the Mediterranean (MEDITS) 1. Objectives of the survey The aim of this survey is to produce basic information on benthic and demersal species in terms of life history traits, population and community distribution and demographic structure through harmonised sampling of demersal resources in the Mediterranean Sea (MEDITS Working Group, 2016). 2. Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)

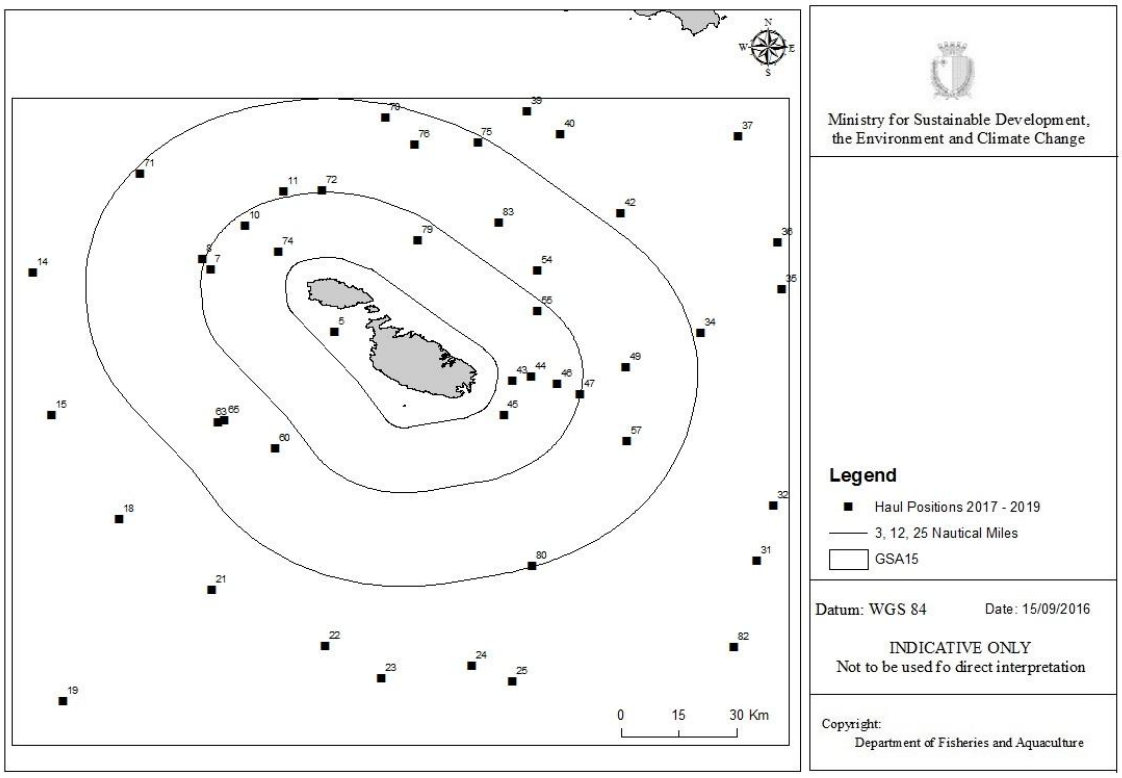

Figure 1 Graphical representation of the MEDITS stations in GSA 15.

Malta will carry out the MEDITS in GSA 15, following the MEDITS Instruction Manual (MEDITS Working Group, 2016). 45 stations are sampled (Figure 1) using the IFREMER GOC73 bottom trawl net of width 22 m; height of vertical opening 2 m, length 40 m with a stretched mesh size at cod-end of 20 mm. The hauls are kept constant for year to year and were initially positioned following a depth stratified sampling scheme with random drawing of the positions within each depth stratum.

Since the same vessel and crew shall be used every year in order to reduce variations between years due to vessel effect (MEDITS Working Group, 2016), the necessary procurement approvals will be sought so that MEDITS in GSA15 will be held using the vessel "Degre" as done in the past three years (2014-2016).

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 *Epinepheus* and *Scomber* genera, for which length measurements should be taken. For all the 82 species, the total number of individuals, the total weight and the individual length should be collected.

This list was split into two groups:

- Group 1 including 41 species, for which individual sex, maturity, weight and age should be collected;

- Group 2 containing 43 species for which only individual length is to be collected.

MEDITS is included in Table 10 of the Commission Delegated Decision (EU) 2019/910. The latest (2016) MEDITS Instruction Manual can be retrieved from: http://www.sibm.it/MEDITS%202011/principale%20project.htm.

3. For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey.

The MEDITS Steering Committee is the reference entity of the MEDITS group, which validates all the decisions taken in the name of the MEDITS group. It endorses the terms of reference, timings and agendas of the MEDITS sessions. It ratifies the conclusions and recommendations elaborated by the group.

The participating Member States and the vessels used in the execution of the MEDITS since its inception are listed in Annex I of the MEDITS Instruction Manual (MEDITS Working Group, 2016).

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

Both physical task sharing and financial cost sharing taking place between participating countries are indicated in Annex III of MEDITS Instruction Manual (MEDITS Working Group, 2016).

5. Explain where thresholds apply

In view of the data required for the current multiannual management plan for bottom trawling fisheries of demersal stocks in the Strait of Sicily being devised at GFCM level, as well as other management measures/plans, Malta will not apply any thresholds but will keep on collecting data through the MEDITS.

References

MEDITS Working Group. (2016). International bottom trawl survey in the Mediterranean. MEDITS Instruction Manual Version 8, 177pp. URL http://www.sibm.it/MEDITS%202011/principale%20project.htm.

General Comment: This Box fulfills Chapter IV of the multi-annual Union programme and Article 2 and Article 7 paragraph (3) of this Decision. It is intended to specify which reseach surveys at sea set out in Table 10 of the multi-annual Union programme will be carried out. Member States shall specify whether the research survey is included in Table 10 of the multi-annual Union programme or whether it is an additional survey.

Pan-Mediterranean Acoustic Survey (MEDIAS)

1. Objectives of the survey

The MEDIAS (Pan-Mediterranean Acoustic Survey) aims to conduct interdisciplinary research to estimate the spatial distribution and abundance of pelagic organisms in the Mediterranean.

2. Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)

The MEDIAS echo-survey on small pelagic fish targets anchovy (*Engraulis encrasicolus*), and sardine (*Sardina pilchardus*) and it covers several areas in the Mediterranean EU Member States (Spain, France, Italy, Malta, Slovenia, Croatia and Greece) with a standardised methodology.

MEDIAS is included in Table 10 of the multi-annual Union programme; the specific details of the survey may be retrieved from the latest (2015) MEDIAS Handbook from:

http://www.medias-project.eu/medias/website/handbooks-menu/handbooks/MEDIAS-Handbook-March-2015.pdf/

3. For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey

The MEDIAS Steering Committee is the reference entity of the MEDIAS group, which validates all the decisions taken in the name of the MEDIAS group. It endorses the terms of reference, timings and agendas of the MEDIAS sessions. It ratifies the conclusions and recommendations elaborated by the group.

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

Both the physical task sharing and the financial task sharing of the survey in each GSA are borne by the Member State responsible for each respective GSA.

5. Explain where thresholds apply

A threshold applies to MEDIAS pursuant to Chapter V, 7 of the Commission Delegated Decision (EU) 2019/910; a Member State's participation (physical or financial) in research surveys at sea is not mandatory when its share of the total Union landings of the preceding 3 years of a stock or species is below a threshold of 3 %. For both species, Malta's share of the total Union landings of the preceding 3 years is below a threshold of 3 % (~0% for both species), and therefore Malta will no longer continue carrying out the MEDIAS survey.

SECTION 2: FISHING ACTIVITY DATA

Text Box 2A: Fishing activity variables data collection strategy

General comment: This Box fulfills paragraph 4 of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraph (2) point (b) and Article 5 paragraph (2) of this Decision. It is intended to describe the method used to derive estimates on representative samples where data are not to be recorded under Regulation (EU) No 1224/2009 or where data collected under Regulation (EU) No 1224/2009 are not at the right aggregation level for the intended scientific use.

1. Description of methodologies used to cross-validate the different sources of data.

Currently data checking and validation is carried out manually, jointly by the officers in charge of the different data collection units. However Malta is in the process of having an automated function within its Fisheries Information System (FIS) which will allow for the automatic cross checking and validation of data from different data sources.

2. Description of methodologies used to estimate the value of landings.

Malta will provide data on commercial landings by weight and value for each segment by species, by quarter and by geographical origin of the catch. Figures will be based on exhaustive data reported in logbooks (for the over 10 metre fleet), by sampling landings (for the under 10 metre fleet). Landing values will also be based by data derived from the official fish market and direct sales notes data (>10m and <10m).

Logbook Approach:

By using information from logbooks, Malta will provide data on commercial landings (both within and outside the country) and total catch, including landings (in value and weight) according to the disaggregation and the precision requested, relating to over 10 metre fleet. Moreover, Malta intends to use the Fish Market Sales Notes Scheme together with the logbooks to provide data according to the Regulation. 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

- Value in euro

Sampling Approach:

A specific sample survey will be carried out to estimate landing relating to the small-scale fishery, i.e. under 10 metre fleet. Data will be collected to estimate overall annual commercial landings by species, by quarter and by geographical origin of the catch.; landings by weight and value will be estimated also by segment, individualised by species, by quarter, and with regard to the geographical origin of the catch, at the level of geographical disaggregation according to the Regulation, at precision levels requested. This type of data collection is used in order to be able to correlate catch variables to effort variables.

The objective of the survey is to estimate landings related to stocks in Table 1C (of the Regulation).

The population under study consists of all Maltese vessels less than 10 metres during the survey reference year.

3. Description of methodologies used to estimate the average price (it is recommended to use weighted averages, trip by trip)

The average price per species is calculated by dividing the annual sum of the total value in euro per species divided by the sum of the total weight in kg of the same species, as obtained from sales vouchers.

4. Description of methodologies used to plan collection of the complementary data (sample plan methodology, type of data collected, frequency of collection etc)

The Catch and Effort Assessment Survey (CAS) was developed with the objectives to provide monthly catch and effort estimates for the small-scale fleet, which do not have a logbook system.

The sampling survey consists of a multivariate questionnaire sampling survey. The target population is made up of the vessels under 10 metres length overall registered in the Maltese fishing fleet register that includes full-time commercial vessels (MFA) and part-time commercial vessels (MFB). The sample; 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 Vessel Register.

Collection of data:

Face to face interviews are conducted with the vessel owners every fortnight. Information on catches, effort in fishing days, by type of gear, fishing areas and activity are obtained. This methodology of obtaining data overcomes the difficulty of acquiring data from the fish market and other official sources for the small scale fishery which can have many errors due to various reasons such as the underestimation in information on landings declared in the invoices for fiscal reasons and erroneous names attributed to fish species which are difficult to identify. Furthermore data on effort is not reported in sales vouchers. The data obtained from the

sample is then raised to the population.

Stratification:

In order to maintain the available time series of data, the criteria of season and of the fleet segmentation as described in Appendix IV of Commission Decision EC 93/2010 was used, and include registration class (MFA/MFB), length segment and fleet segmentation based on the gears registered in the fleet register.

Sampling rate:

The sampling rate varies according to the number of vessels in each fleet segment as indicated in the table below and when the number of vessels in a segment is low a census approach is performed.

Fleet segment	**Sample number**	**Comments**
< 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 of vessels less than 10 metres length overall. Raising is based on a weighting factor attributed to the total fleet segment.

Finally, both datasets of vessels less than 10m and vessels over 10 metres are combined to obtain an estimate of the total.

Data validation:

To avoid shortfalls, data collected from the catch assessment survey is cross-checked with data coming from market sales notes and direct sales vouchers. Sometimes information collected is also cross-checked directly with the fishers.

Text Box 3A: Population segments for collection of economic and social data for fisheries

General comment: This Box fulfills paragraph 5 points (a) and (b) of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraphs (1), (2) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Tables 5(A) and 6 of the multi-annual Union programme.

1. Description of methodologies used to choose the different sources of data

The population for the collection of economic and social data will include all active and inactive vessels registered on the Maltese Fleet Vessel Register on 31 December of the reporting year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year. Such data will be obtained from previous Maltese Fleet Vessel Registers.

2. Description of methodologies used to choose the different types of data collection

Direct interviews based on questionnaires will be used to gather the data needed. However, subsidies will be collected from direct sources (i.e.from the authorities) while capital costs and capital value will not be collected but estimated according to the DCF legislation 2010/93/EU. Economic data will be collected on an annual basis while social data will be collected every three years.

3. Description of methodologies used to choose sampling frame and allocation scheme

Economic and social variables will be collected on a census basis for all the segments. This means that the target population and frame population are the same.

In case of a very low number of vessels in fleet segments ‘Vessels using hooks’, ‘Vessels using Pots and/or traps’ and ‘Drift and/or fixed netters’, when requested, data will be clustered together with the segment ‘Vessels using Polyvalent passive gears only’ due to data confidentiality and as proposed by STECF with regards to Malta's annual report for reference year 2015.

This annual survey will be devoted to cover all the parameters mentioned in Table 5A of the Commission Delegated Decision 2019/910 excluding effort and production value per species. The parameters mentioned in Table 6 of the Commission Delegated Decision 2019/910 will be collected on a triennial basis.

4. Description of methodologies used for estimation procedures

The methodologies to derive final estimates from data collected will be estimated in accordinace to the Ad hoc Contract Commitment No.SI2 725 694; Ref. Ares(2016)2440332-26/05/2016 Methodologies for the socio-

economic data described in the Commission Delegated Decision (EU) 2019/910.

5. Description of methodologies used on data quality

Data quality checking is carried out by officers responsible for the collection of economic data. Manual checks, as well as R scripts will be used. Additionally, collecting data on a census basis will improve the precision of the fleet data. 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.

SECTION 3: ECONOMIC AND SOCIAL DATA

Pilot Study 3: Data on employment by education level and nationality

General comment: This Box fulfills paragraph 5 point (b) and paragraph 6 point (b) of Chapter III of the multi-annual Union programme and Article 2 and Article 3 paragraph (3) point (c) of this Decision. It is intended to specify data to be collected under Table 6 of the multi-annual Union programme.
1. Aim of pilot study To collect data on employment by education level (no education, primary, secondary, post-secondary and tertiary education) and employment by nationality (country or EU/Non-EU country) on a census basis. 2. Duration of pilot study Data is no longer being collected as a pilot study but is now a data obligation. Data on employment by education level and nationality is collected through the Annual Economic Survey and Aquaculture survey and will be submitted every 3 years. 3. Methodology and expected outcomes of pilot study Data will be collected by direct interviews on a census basis. It will give an overview of the education level of the fishers who works under the Maltese Fleet Register/ Aquaculture sector and their nationality.

Text Box 3B: Population segments for collection of economic and social data for aquaculture

General comment: This Box fulfills paragraph 6 points (a) and (b) of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Tables 6 and 7 of the multi-annual Union programme.

1. Description of methodologies used to choose the different sources of data

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 Department of Fisheries and Aquaculture forming part of the Ministry for Sustainable Development, the Environment and Climate Change. Economic data will be collected on an annual basis while social data will be collected every 3 years.

2. Description of methodologies used to choose the different types of data collection

Postal questionnaires will be used to gather the data needed. The latter is conducted in collaboration with the National Statistics Office under a Memorandum of Understanding.

3. Description of methodologies used to choose sampling frame and allocation scheme

Data will be collected through a census even though not all the fish farms forming part of the total population will be part of the survey to be conducted; two of the eight registered aquaculture farms are inoperative.

Aquaculture farms in Malta can be segmented into four main segments according to the species farmed namely; sea bream and sea bass cages, Tuna cages and other marine fish cages. The main species farmed include bluefin tuna, sea bass, sea bream, meagre and amberjack.

The number of aquaculture farms 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.

4. Description of methodologies used for estimation procedures

The methodologies to derive final estimates from data collected will be estimated in accordinace to the Ad hoc

5. Description of methodologies used on data quality

Data quality checking is carried out by officers responsible for the collection of economic data. Manual checks, as well as R scripts will be used. Additionally, collecting data on a census basis will improve the precision of the poprulation data. 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.

Pilot Study 4: Environmental data on aquaculture

General comment: This Box fulfills paragraph 6 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (d) of this Decision. It is intended to specify data to be collected under Table 8 of the multi-annual Union programme.

1. Aim of pilot study

The aim of the pilot study is to collect environmental data for the aquaculture on a census basis. However, PGECON recommended that the purpose of the data collection should be clarified and decision to leave or delete Table 8 (Environmental variables for the aquaculture sector) from the new EUMAP should be discussed. In case of the continuation of the aquaculture data collection the clear legal base and definitions for the variables "Medicines or treatment administered (by type in gram)" and "Mortalities (in %)" should be provided as well as the methodology for such data collection.

2. Duration of pilot study

As per PGECON recommendation, the purpose of the data collection and clear defintion of the required variables should be given before Member States can carry out a pilot study.

3. Methodology and expected outcomes of pilot study

NA

Text Box 3C: Population segments for collection of economic and social data for the processing industry

General comment: This Box fulfills footnote 6 of paragraph 1.1(d) of Chapter III of the multi-annual Union programme, Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Table 11 of the multi-annual Union programme.

1. Description of methodologies used to choose the different sources of data

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. This data will be collected on an annual basis.

2. Description of methodologies used to choose the different types of data collection

Direct and postal interviews based on questionnaires will be used to gather the data needed.

3. Description of methodologies used to choose sampling frame and allocation scheme

The economic and social variables of the processing industry 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.

4. Description of methodologies used for estimation procedures

The methodologies to derive final estimates from data collected will be estimated in accordinace to the Ad hoc Contract Commitment No.SI2 725 694; Ref. Ares(2016)2440332-26/05/2016 Methodologies for the socio-economic data described in Commission Delegated Decision (EU) 2019/910.

5. Description of methodologies used on data quality

Data quality checking is carried out by officers responsible for the collection of economic data. Manual checks, as well as R scripts will be used. Additionally, collecting data on a census basis will improve the precision of the poprulation data. 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.

Text Box 4A: Sampling plan description for biological data

General Comment: This Box fulfills Article 3, Article 4 paragraph (4) and Article 8 of this Decision and forms the basis for the fulfilment of paragraph 2 point (a)(i) of Chapter III of the multi-annual Union programme. This Table refers to data to be collected under Tables 1(A), 1(B) and 1(C) of the multi-annual Union programme.

Description of the sampling plan according to Article 5 paragraph (3) of this Decision

Sampling method:

Sampling will be done under a stratified random sampling scheme with the sampling strata being the métiers and the primary sampling unit (PSU) being the fishing trip.

For trawlers, random sampling is not always possible since only 13 trawlers (which fall within 3 different métiers) operate full-time in Malta. Therefore, the number of available vessels and trips conducted is very limited. For this métier, convenience sampling will be applied. A set of fishers willing to allow onboard observers will be contacted and observations will be conducted on these vessels.

Codification and naming convention:

The métiers are identified following the segmentation in Table 2 of the Commission Delegated Decision (EU) 2019/910 and as recommended in Table 3.3.1 of the RCM 2009 report.

Levels 1-4 are identified according to the gear used by the vessel. The target assemblage (Level 5) is many times straight forward to determine. This is because in most cases, the Level 4 'Gear type' corresponds to only one Level 5 'Target assemblage'. For gears that have more target assemblages, Level 5 is determined from the landings data. This data is analysed and from the percentages by weight of the different groups of species caught, Level 5 is determined.

For the bottom otter trawl gear type, when the crustaceans '*Aristaeomorpha foliacea'* and *'Aristeus antennatus'* are not part of the landings, Level 5 becomes 'Demersal species', whereas when the majority of the catch consists of the mentioned crustaceans, Level 5 becomes 'Deep water species' and when both demersal and deep water species are present in the landings in significant amounts, Level 5 becomes 'Demersal and deep water species'.

Selection of métiers to sample:

The reference data utilised to select the métier to be sampled in 2020-2021 was obtained from the 2017 and 2018 averaged values, produced from logbooks, sales vouchers and small scale fishery sampling survey. The ranking system was based on the report of the SGECA/SGRN08-01 and as detailed in the PGMed 2008 report.

The ranking was done three times, one each for the:

- Commercial landings in tons
- Total landed value in Euros
- Effort in fishing days

The métiers that were in the top 90% of one or more of these three categories were selected to be sampled. The results from this ranking will be applied to the sampling conducted in 2020 and 2021.

For the sampling of discards, following the RCM Med&BS 2016 recommendation, Malta will follow the same plan used in the previous Work Plan which was based on the discard scheme presented in the RCM Med&BS (2010) report. OTB_DWS and OTB_DEF have not been selected by the ranking system based on the 2016-2018 data. However since these métiers have significant discards (in line with the RCM Med&BS-LP 2016 recommendations) and since trawling trips are post-stratified into métiers at the end of the year, the same sampling scheme will be maintained to ensure trawling trips are efficiently sampled.

Sampling scheme:

The sampling schemes selected are sampling from 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. Métiers that have a significant percentage of discards, a minimum of one trip per quarter will be sampled at sea and the rest of the trips will be sampled either at sea or 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 depends on the type of sampling conducted and on the seasonality of the fishery. Based on previous knowledge and previously used measures of effort a minimum number of two trips per quarter are set to be sampled per métier. 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, so as to allow comparisons to results obtained from previous years. As per ICCAT requirements, scientific observations have to 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 to be chosen will be chosen randomly by lottery in the case of swordfish and systematically selected in the case of tuna, by choosing the vessels which did not have onboard observers related to this fishery for the longest time in the series. Onboard observers will be present on all the trips conducted by the selected vessels. Since the ICCAT requirement is tied to the number of vessels being sampled and not to the number of trips, the planned number of trips indicated in Table 4A for drifting longlines is subject to change, depending on the trips that will be conducted by the selected vessels.

Selection of the PSU:

For sampling at sea, a number of fishers will be selected at random from a list of contacts for vessels employing the selected gear in the Maltese fleet. The fishers will be contacted at the beginning of each month so that they inform the Department the first time they would be using the gear. This will be done monthly to ensure that samples are collected over the whole quarter. Trips will then be sampled according to the fisher which contacts the Department first. Non-responses and refusals are documented.

For market samples, the trips will be selected from the catches from the particular gear available at the only fish market in Malta and the first available catch will be sampled.

For drifting longlines targeting bluefin tuna, the vessels to be sampled are systematically selected from all the longliners (>15m) targeting this species. In previous years, random sampling was employed however some vessels were being repeatedly selected. As an improvement, vessels that had no or few onboard observers will be selected for sampling. In the case of longliners targeting swordfish 5% of the vessels will be randomly selected by drawing from all the longliners (>15m) targeting this species.

Sampling measures:

Biological parameters (length, weight, sex, age and maturity) will be collected for species in Groups 1, 2 and 3 of the GFCM-DCRF. For Group 1 species, biological parameters (weight, sex, age, maturity) will be reported yearly. For Group 2 species, biological parameters (weight, sex, age, maturity) will be reported every three years. For Group 3 species, length will be recorded yearly and other biological parameters (weight, sex, maturity) for sharks will be reported through the MEDITS survey.

Species present in Groups 1, 2 and 3 of the GFCM-DCRF but absent from the Tables 1A, 1B and 1C of the DC-MAP will be included in the sampling plan.

The same number of individuals of large pelagic species as regionally agreed to be collected by each country for the previous triannual period (PGMed, 2014) will be retained for 2020-2021, taking into account the yearly quantities required by Malta.

Most of the shark species in Tables C and D of the Commission Delegated Decision (EU) 2019/910 and of Group 3 of the GFCM-DCRF are rare and found sporadically in the Mediterranean area. Due to this, during the RCM Med&BS meeting (2016) it was decided that no planned minimum number and sampling strategy should be associated to the collection of these species. Sampling will be carried out concurrently during onboard and market sampling and through the MEDITS survey. Length will be measured for 100% of the individuals caught during onboard observations (or from a representative sample), 100% of the individuals caught from the MEDITS and whenever this species is encountered in the only fish market in Malta from Monday to Saturday. Other biological parameters (weight, sex and maturity) will be reported through the MEDITS survey.

Annex 1- Bilateral agreement between Malta and Cyprus

ANNEX I

Department of Fisheries and Marine Research

MALTA CENTRE FOR FISHERIES SCIENCES

Bilateral Agreement between Cyprus and Malta
for the sampling of a shared metier in GSA 15 within their National Programmes
under the Data Collection Framework
(EC Regulations 199/2008, 665/2008 and Decision 2008/949/EC)

The following agreement has been made between Cyprus and Malta concerning the sampling of their shared metier *Bottom otter trawl targeting mixed demersal and deep sea species* in GSA 15, selected by both countries to be sampled as part of their National Data Collection Programmes:

The Cyprus trawlers involved in the shared métier and landing their catch in Maltese ports will be included in the sampling scheme organized by Malta for the collection of biological-métier-related variables. This agreement will apply until further notice.

Signed for Cyprus: Date: January 27th, 2009

Myrto Ioannou
National Correspondent of Cyprus

Signed for Malta: Date: January 27th 2009

Mark Dimech
National Correspondent of Malta