



Council Regulation (EC) No 199/2008 of 25 February 2008
concerning the establishment of 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

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 Implementing Decision (EU) 2016/1251 of 12 July 2016
adopting a multiannual Union programme for the collection, management and use of data in the
fisheries and aquaculture sectors for the period 2017 - 2019

[ROU] Work Plan for data collection in the fisheries and aquaculture sectors

2017-2019

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[Bucharest, October 2016]

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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

In accordance with Article 2 and Article 4 (paragraph 3), point (a) of the Decision no. 1251/2016 and Table 3, in the Mediterranean and Black Sea supra-region there is the need to collect information from recreational fisheries catches on a quarterly basis for: eel, bluefin tuna and sharks. In the Black Sea region, in the Romanian coastal area, the species eel and bluefin tuna do not exist, only elasmobranchs species, such as piked dogfish (*Squalus acanthias*), thornback ray (*Raja clavata*) and common stingray (*Dasyatis pastinaca*),

Piked dogfish inhabiting the Romanian marine waters is a migratory species, with long life cycle, whose stock is strongly influenced by the environmental conditions and fishing effort size. Thornback and common stingray, demersal fishes, are leading more sedentary lives and are found half buried in sand at depths of over 70 m. In Romanian fisheries, piked dogfish, thornback ray and common stingray occur mainly as by-catch in the trawler catches, and landings in recent years are only of the order of several tonnes for piked dogfish, and very often as isolated specimens for the other two species.

The Black Sea recreational fishery is minor partly due to the lack of valuable and attractive species. According to the Romanian legislation, recreational fisheries in the Black Sea require special license. This type of fishing is performed mainly from the coast and is connected only with the species from fam. *Gobiidae*, *Carangidae* and sometimes *Mugilidae*. In Romania, there are many fishermen using recreational fisheries for feeding purposes as subsistence fishing. The main target species in recreational fisheries are: *Neogobius melanostomus* / black spotted goby; *Mesogobius batracephalus* / flat-head goby; *Trachurus mediterraneus ponticus* / Mediterranean horse mackerel; *Pomatomus saltatrix* / bluefish and *Liza aurata* / golden grey mullet.

Given the above, Romania shall submit documentation to obtain a derogation on recreational fishing.

2. Duration of pilot study

It is not the case.

3. Methodology and expected outcomes of pilot study

It is not the case.

SECTION 1: BIOLOGICAL DATA

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.

Anadromous and catadromous species data collection in fresh water is not foreseen. The reasons are that eel (*Anguilla anguilla*), Atlantic salmon (*Salmo salar*) and Brown trout (*Salmo trutta*) are not present in Romanian marine waters.

SECTION 1: BIOLOGICAL DATA

Pilot Study 2: Level of fishing and impact of fisheries on biological resources and the 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.

1. Aim of pilot study:

Member States shall establish, as part of the work plans drawn up in accordance with Article 21 of Regulation (EU) No. 508/2014, the data to be collected amongst the following sets as specified in art. 4 of Decision (EU) 2016/1251. Data to assess the impact of Union fisheries on marine ecosystems in Union waters and outside Union waters. Those data shall consist of the following:

a. 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.

b. Data to assist in the assessment of the impact of fisheries in Union waters and outside Union waters on marine habitats. The variables used for assessing the impact of fisheries on marine habitat shall be those recorded under Regulation (EC) No 1224/2009.

c. 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.

2. Duration of pilot study:

Two years. Start in 2018, January 1st, and end on 31st December 2019.

3. Methodology and expected outcomes of pilot study:

The impact of fishing activities on non-commercial species will be estimated with the analysis of by-catch and discard data series from 2015 till present. The list of commercial species will be established using data from landing declarations, as well the data from observers on board of fishing vessels. Species not present on the list will be defined as non-commercial. By-catch and discard data for non-commercial species for five metiers will be analysed in order to estimate yearly catch quantities of those species.

Data collection methods and quality shall be appropriate for the intended purposes defined in Article 25 of Regulation (EU) No 1380/2013. The variables used for assessing the impact of fisheries on marine habitats shall be those recorded under Regulation (EC) No. 1224/2009. Data shall be disaggregated at fishing activity level 3. The methodologies of data collection will be coordinated at Black Sea level between Romania and Bulgaria, and be based on end-user needs. In 2017 will be signed a protocol of collaboration between the two countries, agreement that will include data collection methods, frequency and gears that will be targeted.

It will take into consideration inter alia:

- scientific observer trips on fishing ships;
- observations made by the fishers themselves through logbooks;

- observations of the scientists in the surveys at sea already foreseen in the National Data Collection Program;
 - using by the researchers of fishing gears known as having a significant impact, such as gillnets.
- For all types of fisheries, incidental by-catch of all birds, mammals and reptiles and fish protected under EU legislation and international agreements, including mainly the species listed in Table 1D, will be collected, such as:
- sturgeons - *Acipenser spp.*; OSPAR II, IV, Annex II of the Barcelona Convention (1), Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol; OSPAR (2); Helcom (3).
 - beluga - *Huso huso*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - Pontic shad - *Alosa immaculata*, Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - Black Sea shad - *Alosa tanaica*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol
 - crayfish - *Astacus spp.*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - big-scale sand smelt - *Atherina pontica*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - garfish - *Belone belone euxini* Günther; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol
 - gobies - *Gobiidae*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - golden grey mullet - *Liza aurata*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - leaping mullet - *Liza saliens*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - mullet spp. *Mugil spp.* - Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - whiting - *Merlangius merlangus*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - bluefish - *Pomatomus saltatrix*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - mackerel - *Scomber colias Gmelin*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - crystal gobiid - *Crystallogobius linearis*; National management plans.
 - stingray - *Dasyatis pastinaca*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol; Helcom.
 - picked dogfish - *Squalus acanthias* - RFMOs, High priority, Barcelona Convention Annex III, OSPAR; Helcom
 - common pochard - *Aythya ferina*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - striped venus - *Chamelea gallina*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - banded wedge shell - *Donacilla cornea*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
 - Mediterranean mussel - *Mytilus galloprovincialis*; Annex IV of the Black Sea Biodiversity and

Landscape Conservation Protocol.

- rapa whelk - *Rapana venosa*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
- brown shrimp - *Crangon crangon*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol
- Baltic prawn - *Palaemon adspersus*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol.
- rockpool prawn - *Palaemon elegans*; Annex IV of the Black Sea Biodiversity and Landscape Conservation Protocol;
- short-beaked common dolphin - *Delphinus delphis*; Rec. GFCM/36/2012/2 & Annex II of the Barcelona Convention.
- harbour porpoise - *Phocoena phocoena*; OSPAR II, III Rec. GFCM/36/2012/2 & Annex II of the Barcelona Convention; Directive 92/43/EEC; OSPAR.
- bottlenose dolphin - *Tursiops truncatus* - Rec. GFCM/36/2012/2 & Annex II of the Barcelona Convention.

SECTION 1: BIOLOGICAL DATA

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 research 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.

1. Objectives of the survey

To evaluate the abundance and distribution of fish stocks independently of the data obtained from the commercial fisheries, Romania will undertake scientific research at sea. The research surveys qualifying for the NP are listed in Appendix IX of the Commission Decision. During the period 2017-2019, there will be undertaken annually four priority surveys in the Black Sea for turbot and sprat. Additional information on the surveys is presented in the Standard NP / Tables 1G.

Objectives:

- estimating abundance indices (by number and biomass) of the main demersal and pelagic species of commercial interest distributed at a depth between 10 m and 100 m;
- describing the demographic structure of species of interest to the fishery, together with spatial distribution patterns;
- undertaking size and biological sampling, including extraction of parts to determine the age of the main species targeted by the fishery;
- assessing the impact of fishing activity on the environment.

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

The Romanian National Programme for 2017-2019 includes two surveys:

- *Bottom trawl survey in the Black Sea* (spring and autumn);
- *Pelagic trawl survey in the Black Sea* (spring and autumn).

Bottom trawl survey in Black Sea

Two surveys for turbot stock assessment by swept area method will be conducted, in April -May and October - November. The main goal is to define the stock biomass indices and the annual quota for turbot fishery, respectively. Through this field research, biological data about the turbot size-at-age structure, distribution, sex ratio, and by-catch will be gained. Each survey includes 40 bottom trawl hauls for 10 days (Figure 1).

Gear: A standard bottom trawl (22/27-34) is used. This includes specifications for the material and its rigging from the doors to the codded of the net. The net is a bottom trawl designed for experimental fishing with scientific purpose, which can be used over the whole depth range and in the various conditions encountered in the whole survey area. The net has a relatively large vertical (2.0 m) and horizontal (13.5 m) opening. The mean speed of the vessel was 1.9-2.1 kts, with a standard trawling time of 60 minutes.

Vessel: The surveys will be made with the “*Steaua de Mare I*” research vessel, using the demersal trawl, all over the entire Romanian area. The same gear used during past years will be used and similar data will be collected, using the same methodologies and creating a common age-length key.

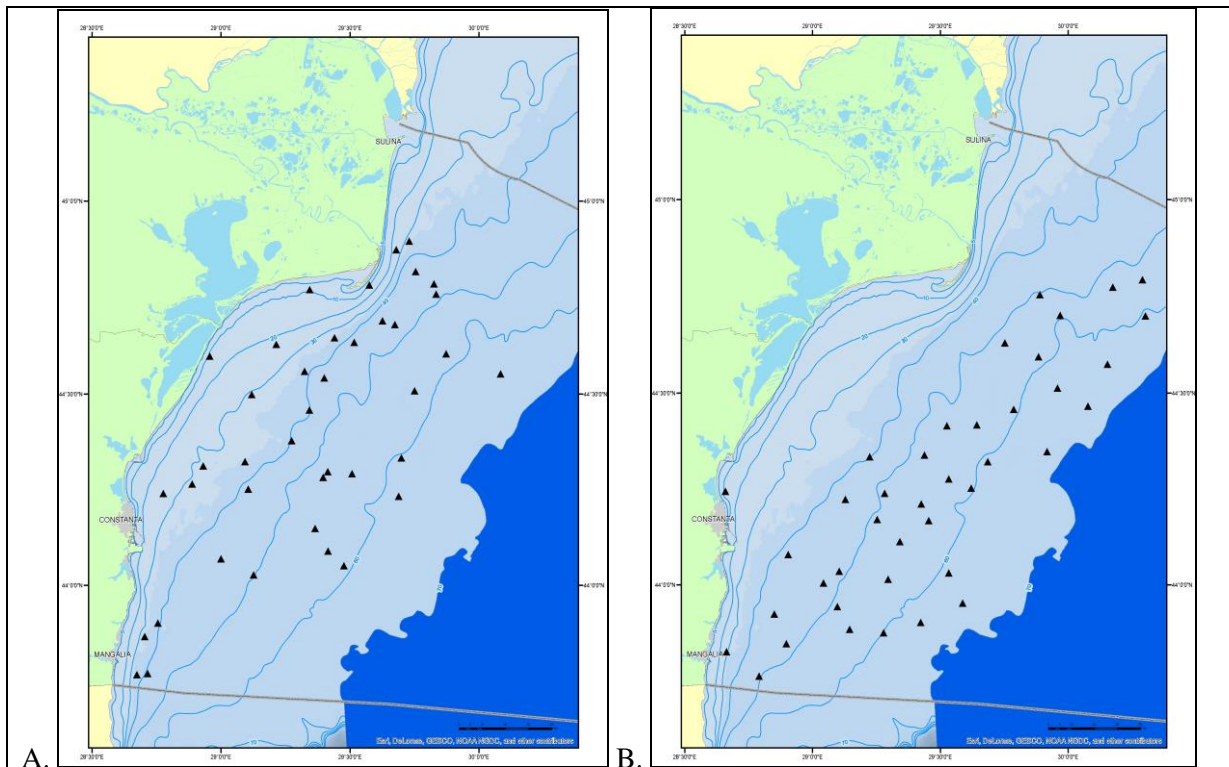


Figure 1. Trawl planned distribution points (B- and A-season sprig autumn seson)

Pelagic trawl survey in Black Sea

The trawl surveys for sprat stock assessment are planned for May - June (spring season) and September - October (autumn season) applying the swept area method in the Romanian Black Sea area. The main aim of the survey is to obtain the abundance index for sprat exploited stock. During the surveys the collected information will include length (TL), weight, sex composition and maturity. Otoliths for age determination will be collected and discards will be investigated. Each survey includes 30 mid-water trawl hauls for 8 days (Figure 2).

Gear: A standard bottom trawl (57/63 - 62 m) is used. This includes specifications for the material and its rigging from the doors to the cod end of the net. The net is a bottom trawl designed for experimental fishing with scientific purpose, which can be used over the whole depth range and in the various conditions encountered in the whole survey area. The net has a relatively large vertical (11-12 m) and horizontal (20.0 m) opening. The mean speed of the vessel was 2.3-2.5 kts, with a standard trawling time of 30 minutes.

Vessel: The surveys will be made with the “*Steaua de Mare I*” research vessel, using the pelagic trawl.

Participating institutions: The National Institute for Marine Research and Development *Grigore Antipa* is responsible for carrying-out the survey in Romanian waters.

Collected information from the turbot and sprat survey

The data recorded for each haul includes:

- Depth, measured by the vessel’s echo sounder;
- GPS coordinates of start/end haul points;
- Haul duration;
- Abundance of the target species;
- Weight of total catch;
- Absolute and standard length, individual weight of the separate specimens;
- Otoliths collection for age determination;

- Sex identification;
- The species composition of the by-catch;

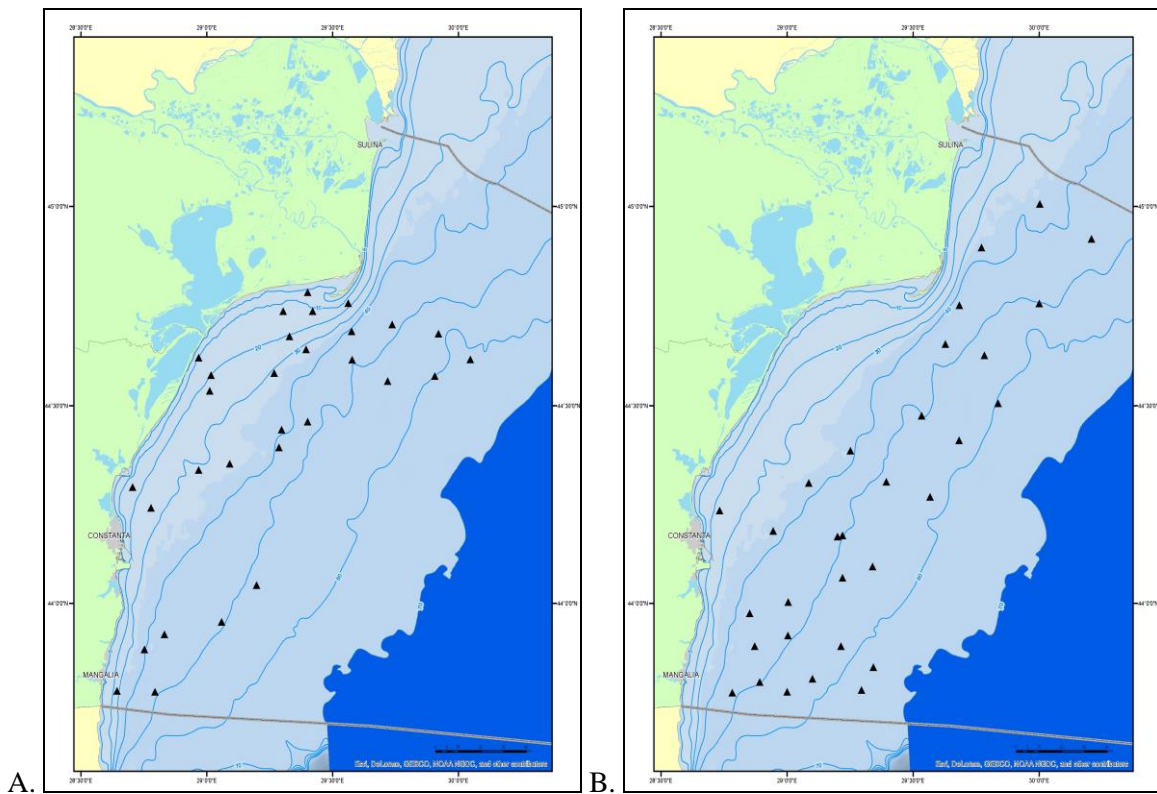


Figure 2. Trawl planned distribution points (B- and A-season sprig autumn season)

The results obtained will be presented as maps and tables comprising data on: for the turbot and sprat surveys, additional information for the calculation of the catch per unit effort (CPUE/kg/hour) and the catch per unit area (CPUA/kg/km²) in the swept fields will be provided. Collected data will be stored in the NIMRD database, as well as in a module especially developed as a part of the Romanian NAFA.

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

The obligations stipulated by the new Collaboration Agreement, concluded between NAFA Romania and NAFA Bulgaria, on 25 March 2014, states:

a. Surveys at sea: during the period covered by the Agreement (2015-2020), each country shall perform annual research surveys in the territorial waters and their EEZ - surveys with demersal trawl and hydroacoustic (pelagic) surveys, using the common methodology to be adopted by other EU Member States (MEDIAS and MEDITS).

b. The two parties shall perform the pelagic and demersal surveys in the territorial waters of the respective countries and, in order to facilitate the harmonization of methodologies used, **they shall provide for the presence of researchers from the other country aboard research vessels of the contracting party**, as the case may be.

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

In accordance with the acting legislation in Bulgaria and Romania, respectively, the partners commit to provide the financial means for the scientific surveys and working meetings (the cost will be covered by national NAFA with contribution of European).

5. Explain where thresholds apply

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.

The variables that will be collected for this section are listed in Table 4 of the multiannual program of the EU, their reporting will be conducted according to the level of the requirements set out in Tables 3, 5B and 5C.

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

For verifying the accuracy of capacity and effort there is the possibility of cross validation with data of capacity and effort that are mentioned in the questionnaire completed by each economic agent in accordance with the provisions of provenance and results of the activities carried out.

To verify the accuracy of data on landings situation there is the possibility to cross-validate data log sheets with the sales notes and transport notes.

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

The data corresponding to the variable of landings (total amount of landings per species, the total weight of landings per species and prices of each species) is achieved by exhaustive method, a coating method that ensures 100% of the population and the maximum level of quality. Data collection is performed monthly from the following sources: log sheets, sales notes and transport notes filled out by each economic agent subsequently transmitted by NAFA fishery inspectors to NIMRD.

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

Estimating the average price for each commercial species is achieved by weighted average.

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

The data collected corresponding to the variables for capacity, effort will be simultaneously drawn from sources such as journals, fishing fleet registers, sale notes and questionnaires by the exhaustive method. The operation of collecting data will be done monthly from the sources mentioned above, provided by fishery inspectors, by regularly checking fisheries landing points and first sales centers, respectively. This method ensures 100% coverage of the population and the highest level of quality.

Data regarding capacity is available in the fleet register, where you find the following information: vessel length, gross tonnage, maximum power of the main engine and age of the ship.

Data on effort (days at sea, fishing days, no. of trips, no. of fishing operations, name and number of fishing gear, etc.) are available in the logbooks for vessels over 12 meters and in the coastal logbooks for boats smaller than 12 m.

SECTION 3: ECONOMIC AND SOCIAL DATA

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 variables that will be collected for this section are listed in Table 5A of the multiannual program of the EU, their reporting will be conducted according to the level of the requirements set out in Tables 3, 5B and 5C.

The main sources of economic and social data collection are the following documents: the questionnaire, fishing journal at the Black Sea and coastal areas, the fleet register, sale notes and transport notes.

- a. The questionnaire is the source of which is found in most economic and social data as follows (table 5 A).
- b. The logbook is a document in which, besides data on fishing effort and catches, the following data is also included (table 5A).
- c. The fleet register is a document that contains information about technical characteristics of fishing vessels, as follows (table 5A).
- d. Sale notes contain the following data (table 5A).

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

The main holders of economic and social data are the economic operators engaged in fishing on the Romanian coast of the Black Sea. In the orders issued by the Ministry of Agriculture and Rural Development they have an obligation to complete these data in fishing journals of the Black Sea and the coastline, sale notes, transport notes and questionnaire All these documents, except the questionnaire, are taken monthly from every economic operator by NAFA inspectors, after a preliminary verification and available to the research staff of the NIMRD “*Grigore Antipa*” to be centrally processed and transmitted to end-user format requested by them. Documents such as fishing logbooks, landing declarations in ports/landing sites should be handed-over/delivered to NAFA inspectors by the captains/deputy of the vessels.

The data collection in the landing sites, nominated by NAFA, among the Black Sea coast, will be done by NAFA staff.

For the conformity of fishery data, inspectors confront fishing journals with the sale notes and transport notes. If these data are not in correlation, the necessary corrections are performed.

Elaboration of the Questionnaire content is conducted by research staff of NIMRD “*Grigore Antipa*” in collaboration with NAFA staff with strict compliance of the notice of all economic and social data requested in Decision (EU) 1251/2016. After completion of the final form of the questionnaire, it is distributed by NAFA inspectors to each economic agent that has the obligation to complete all available data depending on the complexity of the activities performed, after drawing up the balance. Finally, NAFA inspectors give these questionnaires to the research team of NIMRD “*Grigore Antipa*”, who verify the data and they contact the NAFA inspectors and the economic operators when there are certain ambiguities in order to correct them.

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

The data collection method which will be applied is stratified random.

As per the obligations related to various data that should be reported to other organisms of EC, e.g. Eurostat (the annual methodological report for collection and management data on statistics of national fisheries and aquaculture), the exhaustive method will be applied, covering 100 % the active vessels registered in FFR, for all segments of the fleet.

The following procedures/means will be used:

1. NAFA staff:

- headquarters of NAFA: 2 persons centralising and compiling data, issuing the requested forms for transmission to relevant bodies national and international;

- regional branch of NAFA in Constanta, responsible for the activities in their competence area; one person is collecting data from the in charge inspectors of NAFA and the operators in the field.

2. Technical equipment: PCs, laptops, electronic mail - basically, for the links between central offices and regional branches. The collected data useful for the scientists, as a base for their works, are transmitted to them (NAFA to NIMRD).

4. Description of methodologies used for estimation procedures

The calculation of these variables, for the active vessels, will respect the instructions indicated in the Table 5A of the multiannual program of the Union [Decision (EU) 2016/1251] and will be based on the figures obtained through questionnaire and other sources, showed above mentioned, from the owners of the fishing units by the inspectors of NAFA and the provisions of the national fishing legislation.

The data will be collected from all economic operators. In such a case, the data will be exhaustive and the resulting assessment will be by a census.

As per national legislation, the captain has the obligation to fulfil the coastal logbook for each fishing operation, including the no. of hours, no. and type of gears, the fishing area and the catches per species, live weight and prices of sales (sales notes).

These obligations are similar to the requested legal obligations as for the vessels less than 12 m. These vessels are obliged to complete the Coastal Fishing Logbook, having the same obligations as above mentioned for the vessels bigger 12 m.

Information are obtained by NAFA local branch personnel, weekly/ monthly, by taking over from the authorized operators/ license owners the records regarding: species/ products accomplished quantity (kg live weight) and the average price for sale in order to inform the national authorities responsible in the field and international fora.

For data collection regarding all the activities mentioned above, there are no other legal regulatory acts issued by other national authorities, including the national statistics one, beside those issued by the Ministry of Agriculture. The figures are verified with those registered in sales notes, as per domestic legislation and internal procedure rowels of NAFA.

Romanian fishing vessels operate only in one supra-region/region, according to Table 5C of the multiannual program of the Union [Decision (EU) 2016/1251] - supra-region Mediterranean Sea and Black Sea, subregion Black Sea.

5. Description of methodologies used on data quality

The described method used for data collection using the legal documents requested in domestic legislation and the work of local NAFA staff will assure a 85 - 100% % precision level of data for active vessels over 12 m length. For vessels with a length of 6 m and a length between 6 and 12 m, stratified random questionnaires will be used to achieve the precision of 80 - 100%.

For data collection will be used the information recorded in the above mentioned documents. That information is received in NAFA regional branch by the assigned persons with the processing of the

documents legal required, provided in our national regulatory.

Weekly for fishing activities, the personnel from regional branches are centralizing the data. The following should be recorded: total production, sales of raw materials, final destination of the own products, total value of each catch/product.

The reliability/control of data accuracy by comparing it with other sources, as a statistics rule, is accomplished by crosschecking control between based documents - demanded at the range of regional branch - by local inspectors and the person special assigned with data centralization. The second step is in NIMRD - the figures are cross-checked by the staff processing the data and responsible for transmission them in the centralised data base - NDCP Romania.

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

The aim of the pilot study is to establish a methodology to facilitate the collection of data on the employment situation in the fisheries depending on the level of education and nationality. The aim of the pilot study is to develop and test the most effective tools / ways of investigating social component in the fisheries sector. The data planned to obtain aimed at defining / characterization employees in the sectors of fisheries, aquaculture and processing industry based on the level of education, age, gender and nationality.

2. Duration of pilot study

Since the Romanian coastal fishing activities are seasonal, a situation that leads to temporary use of certain categories of vessels, fishing gear and personnel involved with different levels of training and nationalities, we believe that the duration required for the operation of the pilot study should be of calendar two years (2017-2018) and the results will be available in 2019. It must be taken in consideration that for every new information, people become apprehensive, hard to convince and that involves performing several field trips and, consequently, much work to be clarified.

3. Methodology and expected outcomes of pilot study

3.1 Methodology

Data collection aimed at the education level and nationality personnel working in the marine fisheries sector will be based on the questionnaire, where each economic operator will record the data for each employee under his company. Questionnaires will be developed by the research staff of NIMRD “*Grigore Antipa*” and will be shared with NAFA inspectors to a small group of economic operators that must conduct fishing activities that include all segments of the vessels and fishing gear used in different sectors of the Romanian seaside. The questionnaires will be collected by NAFA inspectors from the economic agents and made available to research staff of NIMRD “*Grigore Antipa*”, who will analyze and process data from the questionnaires. Also, the research staff of NIMRD will use various documents and data stored by NAFA on the courses carried out by authorized personnel for fishing activities. It also for data validation will intervene directly undertakings.

The methodology established by the pilot study will open the way to the statistical evaluation of the level of studies and nationalities of all personnel operating in the field of fishing. This way one can determine the level of training / experience of staff performing marine fishing.

Pilot studies will be based on quantitative and qualitative methods. The qualitative method will involve the focus group / round table with experts and professional organizations to establish the questionnaire. Determining sample, distribution and collection of questionnaire, will involve the quantitative method of the pilot study. The last phase of the pilot study will be: analysis and interpretation of the collected data, testing the efficacy of research instruments and protocols and estimation of statistical parameters for later analysis. Expected outcomes of the study will be to know the education level, age, gender and nationality of employees and to identify the best method to collect these data in the future.

3.2 Expected outcomes of pilot study

Setting-up the competence of the education level and nationality of personnel performing along the Romanian coast, by vessel segments, gear and fishing sectors of the Romanian Black Sea coast.

Also, if from the study's results that the level of training of staff that conducts fishing activities is mediocre, action should be taken, by achieving professional development in this kind of activities they perform in this domain.

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

First of all, there will be analyzed the Aquaculture Units Register (AUR), that will provide general information about the aquaculture units and economic operators in the field, which are officially registered. Each year, with the help of NAFA inspectors (National Agency for Fishing and Aquaculture) information will be gathered, regarding the active farms from those officially registered. For those active farms, questionnaires will be sent. Where appropriate, data will be collected through interviews, by the phone or in the field. For gross sales per species also financial accounts will be utilized, where appropriate. Some of variables will be collected by accessing and using the database of economic statistics indicators of the Ministry of Finance.

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

The collected data will have economic, social and technological nature. The specificity of the aquaculture sector are: species and farming techniques. The questionnaire will be structured by:

Section I - Data unit identification.

Section II - Technical data unit, related to: surface, category unit (hatcheries and nursery, on growing, combined), age biological material (embryonated eggs, brood summer I, brood summer II, fish consumption, breeding) breeding type applied (natural or artificial), type of rearing system, farming techniques.

Section III - Economic data (economic variables under table 7 of the multi-annual Union programme).

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

The data collection method of the aquaculture sector will be exhaustive, namely census. Questionnaires will be sent to all active farms from registered units. Thus, the frame population will be the same with the total population.

4. Description of methodologies used for estimation procedures

The estimation of some variables will be necessary during data validation (eg livestock costs with quantity; feed costs with quantity, etc). The methodology will involve setting an average price per unit, collected from other farms with same characteristics, and then estimation of missing variable. Also, if data from some variables will not be provided by units, an estimation will be made for each variable in part. The estimation value will be the average of values of that variable, corresponding to same species, farm size and volume of production.

5. Description of methodologies used on data quality

Data quality analysis will involve the calculation of response rate for all segments of the population or for each segment in part under table 7 of the multi-annual Union programme.

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 analyse the environmental data for aquaculture regarding the type and quantity of medicines or treatments administered for diseases prevention and control from romanian aquaculture sector and, the mortalities registered in aquaculture units.

2. Duration of pilot study

The pilot study will be done in 2017 – 2018 period and the results will be available in 2019.

3. Methodology and expected outcomes of pilot study

The Pilot study will be based on quantitative and qualitative methods. The qualitative method will involve the interviews with focus group (experts) to establish the form of questionnaire. Determining sample, distribution and collection of questionnaire, will involve the quantitative method of the pilot study.

The last phase of the pilot study will be: analysis and interpretation of the collected data, testing the efficacy of research instruments and protocols and estimation of statistical parameters for later analysis.

The main participants in the research will be the aquaculture units, IRDAEFA Galati and RDSFC Nucet in cooperation with National Agency for Fishing and Aquaculture (NAFA). Regarding some points of the study, also National Sanitary Veterinary and Food Safety Authority (NSVFSA) will be contacted and could provide important data.

The outcomes of the study will follow the use of treatments and medicines in aquaculture units both with the mortalities registered by the farms.

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

Identification of units which have as object of activity (main and secondary activity) NACE 1020 is done by consulting the Register processing units (RPU) developed by National Agency for Fisheries and Aquaculture Bucharest (NAFA), reports and records from National Agency for Fiscal Administration and the Trade Register and authorizations veterinary released The National Sanitary Veterinary and Food Safety for the units preparing fish and fishery products.

Economic and social data source according COMMISSION IMPLEMENTING DECISION (EU) 2016/1251 Table 11 - Economic and social variables for the processing industry sector is questionnaire, interview and information site specializing in National Agency for Fiscal Administration.

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

Data are collected by specialists from the Institute of Research - Development for Aquatic Ecology, Fisheries and Aquaculture Galati and Bucharest NAFA inspectors. The data are centralized and processed questionnaires received directly from respondents or by inspectors of the National Agency for Fisheries and Aquaculture Bucharest. The questionnaires cover all the economic variables listed in Table 11 COMMISSION IMPLEMENTING DECISION under (EU) 2016/1251. The processed data are included in Table 3C: Population segments for collection of economic and social time for the processing industry.

Ordering data will be made depending on region development and the number of employees of the unit.

The questionnaires are structured in three sections:

Section I - Data unit identification (name of the unit, NACE code, ownership, unit address, contact person).

Section II - Data processing unit (raw materials, types, quantity, value)

Section III - Economic data (revenues, expenses, number of employees, financial statement) and social data according Table 11 - COMMISSION IMPLEMENTING DECISION (EU) 2016/1251.

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

Data will be collected from all fish processing units (census) motivated by the small number of processing units are in operation at the time of writing data collection program. Data collection will be from units with 1020 Caen code - main activity and secondary activity.

4. *Description of methodologies used for estimation procedures*

Economic and social data included in Table 3C: Population segments for collection of economic and social time for the processing industry which are not reported units will be estimated as the average of data units responding.

5. **Description of methodologies used on data quality**

Data quality will be calculated using formulas recommended.

Response rate; achieved number of respondents who supplied data / frame population number.

Coverage rate; total value of production of the respondent units / total value of production of the frame population. Coefficient of Variation (CV); only in case of response rate <70%

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.

The sampling programme is realised in view to obtain the monthly distribution of length on species from catches of landings (number and weight). The data will be collected by metiers, species presented in Tables 1(A), 1(B) and 1(C) of the multi-annual Union programme and considering the GFCM resolutions (May 2015), approved by the RCM Working Group (Regional Coordination Meeting for the Mediterranean and Black Sea) in September 2015 (Rome), it was proposed to create various groups of species. For the period of the Programme, the biological sampling studies have included:

group 1: sprat / *Sprattus sprattus*; European anchovy / *Engraulis encrasicolus*; turbot / *Psetta maxima maeotica*; Mediterranean horse mackerel / *Trachurus mediterraneus ponticus* and picked dogfish / *Squalus acanthias*;

group 2: pontic shad / *Alosa immaculata*; whiting / *Merlangius merlangus euxinus*; rapa whelk / *Rapana venosa*;

group 3: thornback ray / *Raja clavata*; common stingray / *Dasyatis pastinaca*; red mullet / *Mullus barbatus ponticus*, caspian shad / *Alosa tanaica*; big-scale sand smelt / *Atherina boyeri ponticus*. Species small-spotted catshark / *Scyliorhinus canila*, not present on the Romanian coast of the Black Sea.

The data needed to calculate the parameters will be obtained from specimens collected from a variety of sources, such as markets, surveys and on-board sampling. Biological sampling will be carried out by the National Institute for Marine Research and Development *Grigore Antipa* Constanta (NIRMD).

The total length will be measured from the tip of the snout to the tip of the longer lobe of the caudal fin with the lobes compressed along the midline. The measurement precision is one millimetre. Weighing is done when most of the liquid drains off and measurement precision is 0,1 gram. The sex is defined macroscopically during dissection following three categories: male, female, and undetermined (impossible to determine). Age is determined by macrostructural-level otolith (sagitta) reading. The reading is carried out with a stereomicroscope under reflected light. Counting of bands or rings is always carried out from the central zone to the marginal zone. Both otoliths of an individual are read and the readings are carried out by at least two separate readers (Radu E and Maximov V, 2006 - Ghid de esantionaj pentru prelucrarea datelor și statistica pescărească / Guide for data processing and statistical sampling for fishery, Ed. *EX PONTO*, INCDM, Constanta, România, p. 90, ISBN(10):973-644-561-5; ISBN(13):987-973-644-561-3; <http://www.rmri.ro/Home/Publications.Other.html>)

Following the procedure described in the guidelines for the implementation of the National Programme, Romania determines metiers to sample in table 2A. For the collection of the data will be used data sources as logbooks, declarations of first sale, Vessels Monitoring System data. All details for the selected metiers are described in the standard tables.

The metiers are the following:

- pelagic trawl fishery;
- beam trawl;
- pound net fishery;

- set gillnet fishery;
- long lines and hand lines fishery
- other types (various) / manual harvesting / by divers

The target fish species in pelagic trawl fishery is sprat with by-catch of whiting, turbot, anchovy and horse mackerel. In the pound net fishery, the main species in the catches have a seasonal character, the sprat being the target species in spring period and the beginning of the summer and anchovy and horse mackerel in the summer and autumn period. The by-catch in the pound net fishery is composed of whiting, turbot, red mullet and others demersal species.

In set gillnet fishery, the bottom species with commercial importance is turbot with by-catch of thornback ray, common stingray, spiny dogfish and cetaceans.

Long lines and hand lines are representative for artisanal fishery. The main species in the catches are gobies and horse mackerel. The sampling resources are allocated to at-sea sampling and shore-based sampling.

The sampling distribution is made depending on the seasonal character of the target species. We must have in view the fact that all marine fishing vessels operate with one day - few days fishing trip, but don't exceed a week. The collection of the random samples from unsorted catches and landings will take place in fishing harbours, fishery points and at sea on vessel board.

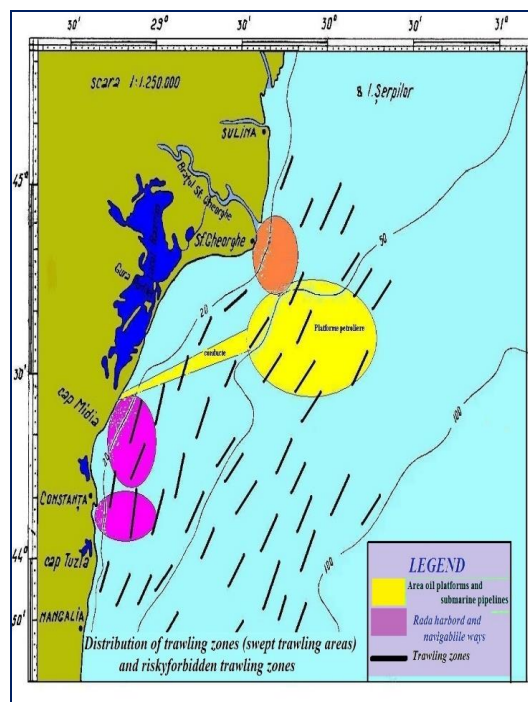
The samples are extracted from the catch of trawler fishery, pound net fishery, gillnet fishery and long lines and hand lines fishery. The sampling schemes will be organized in a way that sampling effort is distributed proportionally to the fishing effort. Relatively larger landings during the year imply higher sampling effort and vice versa. This will ensure that the biological data correspond directly to the national landing statistics.

The sampling scheme, strategies and effort will be the following:

a. Pelagic trawler fishery, in three fishing harbours:

- Mangalia and Cape Midia harbours - 2 times/month in the fishing season (April -November);
- Sulina harbour - 1 time / year, in the fishing season (April - November);
- On board of vessel, one fishing trip / month.

The fish species target of the sampling will be mainly sprat and by-catches (whiting, turbot, anchovy and horse mackerel, picked dogfish).



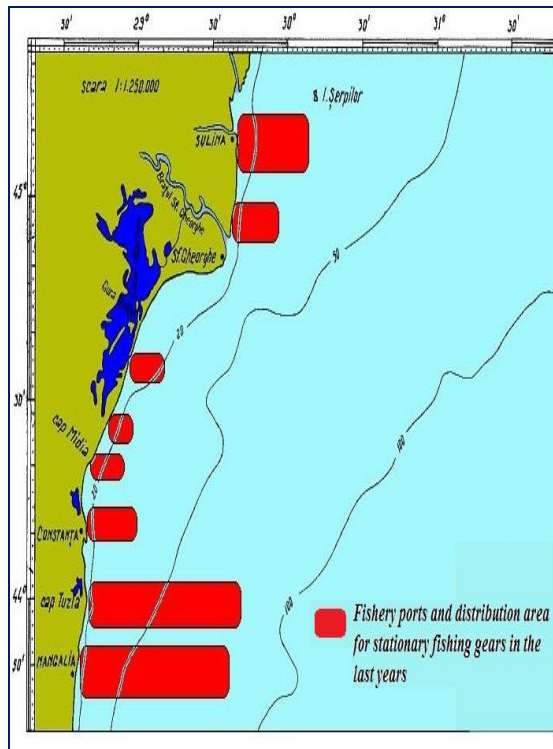
Trawling area at the Romanian coast

b. Beam trawler fishery

- Mangalia and Cape Midia harbours - 2 times/month in the fishing season (April-November);
- On board of vessel, one fishing trip / month.
The target species will be rapa whelk.

c. Pound net fishery, at least in two locations:

- from fishery points in the southern part of the Romanian coast (Vama Veche - Agigea area) – 2 times/month in the fishing season (April – September);
 - from fishery points in the northern part of the Romanian littoral (Constanta – Chituc area) – 2 times/month in the fishing season (April – September);
- The fish species object of the sampling will be: sprat, whiting, anchovy and horse mackerel and by-catches pontic shad, caspian shad, red mullet, turbot, big-scale sand smelt, picked dogfish, thornback ray, common stingray.



Distribution area for passive fishing gears

d. Gillnet fishery:

- from fishery points in the southern part of the Romanian coast (Vama Veche - Agigea area) - 2 times/month in the fishing season;
- from fishery points in the northern part of the Romanian littoral (Constanta - Periboina area) - 2 times/month in the fishing season;
- in fishing harbours:
 - ◆ Cape Midia harbour - 2 times/month in the fishing season;
 - ◆ Sulina harbour - 1 time/month in the fishing season.
- On board of vessel, one fishing trip/month.

The demersal species object of the sampling is turbot and also by-catches of thornback ray, common stingray, picked dogfish and red mullet. The pelagic species object of the sampling is pontic shad and caspian shad,

e. Long lines and hand lines fishery

This is performed mainly by vessels with LOA under 10 m and all sampling will be done in fisheries points, in the same time, and points with sampling for other metiers. The collected biological data will be reported by fleet segments, gear type, mesh size and target species.

f. *Rapana venosa* fishing by manual harvesting

Once a month from fishing points along the Romanian Black Sea coast.

This sampling scheme covers all fishing metiers and fleet segments used at the Romanian coast.