



MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
NATIONAL AGENCY FOR FISHERIES AND AQUACULTURE



Regulation (EU) 2017/1004 of the European Parliament and of the Council
on the establishment of a Union framework for the collection, management and use of data in the
fisheries sector and support for scientific advice regarding the common fisheries policy and
repealing Council Regulation (EC) No 199/2008 (recast)

Commission Implementing Decision 2019/909

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

Commission Implementing Decision (EU) 2019/910

adopting a multiannual Union programme for the collection, management and use of data in the
fisheries and aquaculture sectors for the period 2020-2021

Commission Implementing Decision (EU) 2016/1701

laying down rules on the format for the submission of work plans for data collection in the fisheries
and aquaculture sectors

Commission Implementing Decision (EU) 2018/1283

laying down rules on the format and timetables for the submission of annual data collection reports
in the fisheries and aquaculture sectors

**[ROU] ROMANIAN ANNUAL REPORT FOR
DATA COLLECTION IN THE FISHERIES
AND AQUACULTURE SECTORS 2020**

Version 1

Bucharest, 30 may 2021

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SECTION 1: BIOLOGICAL DATA

Text Box 1C: Sampling intensity for biological variables

General comment: This box fulfils paragraph 2-point (a)(i)(ii)(iii) of Chapter III, of the Annex of the Delegated Decision (EU) 2019/910 and Chapter I of the Implementing Decision (EU) 2019/909 on the multiannual Union programme; and Article 2, Article 4 paragraph 1 and Article 8 of the Implementing Decision (EU) 2016/1701 on the format of the WP. This box is applicable to the Annual Report.

Member State should provide by Region/RFMO/RFO/IO:

1. Evidence of data quality assurance

Quality evaluation can only be carried out if the information coming from Table 5A in the Work Plan is available. If this is not the case, Member State shall provide an overview by giving information on the methodology used to assure the quality of the data collected.

Information on the methodology used to assure the quality of the data collected:

1. <http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en> - under Materials and Methods section.
2. Biometric measurements, data checks & analysis
3. Descriptive statistics
4. ODV 5. Outliers Check values
6. L-W relationships
7. RoME software, developed with R language, RoME represents a common tool to perform data checks 8. BioIndex
9. Usage of appropriate exploratory statistical techniques to detect outliers and anomalous registers.

Romanian institutes use common standard protocols for processing of data agreed with Bulgaria institute.

According to the approved program, in 2020 the following biological parameters were collected: length, weight, age and sex ratio (table 1B), for the species: sprat (*Sprattus sprattus*); turbot (*Scophthalmus maeoticus/Psetta maxima maeotica*); horse mackerel (*Trachurus mediterraneus*); european anchovy (*Engraulis encrasicolus*); red mullet (*Mullus barbatus*); picked dogfish (*Squalus acanthias*); whiting (*Merlangius merlangus*); rapana (*Rapana venosa*); thornback ray (*Raja clavata*) and common stingray (*Dasyatis pastinaca*)(see AR comments in Table 1C). Information on the methodology used to assure the quality of the data collected:

2. Deviations from the Work Plan

There are no deviations from the planned methodology regarding sampling of the species.

No deviations from:

- sampling intensity,
- methods used for collecting data.
- methods used for estimating the parameters.

The sampling was performed by the institute's observers (NIRMD), on board the vessel, recording and collecting data for all fishing activities carried out (the data obtained reflect the entire voyage) or in the port (in the catch landing area). The sampling scheme is established to ensure both the quality of sampling and to ensure a minimum number of individuals by sampling for later use in the evaluation.

Length and weight: the length sampling scheme (biological variable related to fishing), focused on the species and metier, generally corresponds to the number of planned individuals, was within the allowed limits (sprat -103.92 %; European anchovy – 102.95 %; turbot - 140.33%, picked dogfish – 146.0%; horse mackerel – 139.87b%; red mullet – 121.4 %; Rapa whelk – 144.14 % and whiting – 135.60 %)(Table 1C); **Age and sex ratio:** the number of individuals analysed corresponds to the planned number, with small exceedances, but which were within the allowed limits (sprat -122.17 %, European anchovy – 111.53 %; horse mackerel – 134.4 %; red mullet – 123.20 %)(Table 1C). This did not lead to any financial changes in the contract.

According to the program in 2020, no under sampling (sexual maturity and fecundity) were planned.

The species Atlantic horse mackerel / *Trachurus trachurus* is not present on the Romanian coast of the Black Sea, so that is not included in the sampling program because is not present in the catches.

The number of people measured is between 90-150%, although sometimes it is higher than the planned minimum, because Romanian scientists have decided to investigate more fish in order to obtain a higher level of significance of biological parameters of the species. The oversampling did not lead to any financial burdens.

Methods used for collecting data

The length composition of the catch is available by stock and metier from the metier sampling (Table 1C). Samples for biological parameters were derived from unsorted catch, retained catch and at-sea surveys. For this purpose, the staff of the research institute (NIRMD) they were on board vessels, fishing points along the coast and in fishing ports and participated in sea surveys with demersal and pelagic trawling. The methodology used to define the numbers of individuals, that will be sampled is based on the consultation with the Romanian research institute and the Bulgarian research institutes. The total length was 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 was done when most of the liquid drained off and measurement precision was 0.1 gram. For small pelagic and demersal species, the representative sampling for size-at-age structure was collected and stratified by length groups. For a number of 3-5 samples for length frequency, one sample for age frequency was extracted; calculated by the stratified method, that is providing for each length-class of a constant number of age material (otoliths or scales) - about 10 individuals (if is possible, 5 females and 5 males). Age compositions of the catch (unsorted catches, landings) were derived by applying "Age-Length-Keys" to the length composition of the catch. Sex was defined macroscopically during dissection following three categories: male, female, and undetermined (impossible to determine). Age was 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 were read and the readings were carried out by at least two separate readers (http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_COLLECTION%20METHODOLOGIES.pdf)

Methods used for estimating the parameters

The data needed to calculate the parameters were obtained from specimens collected from a variety of sources, such as markets, surveys and sampling on board the vessel or in port when landing the catch. Biological sampling was carried out by specialists of the National Institute for Marine Research and Development "Grigore Antipa" Constanta (NIRMD) (http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_Material%20and%20methods%20for%20survey%20in%20the%20Romanian%20Black%20Sea%20area.pdf)

3. Actions to avoid deviations.

According to the scientists from the research institutes in Romania, the collection of more samples and the measurement of biological parameters of more individuals than the minimum planned in the work plan (when this is possible and does not cost additional funds) contribute to more reliable and detailed results to be used for stock assessments.

The main cause of the deviation is the lasting of the trips in these fisheries due to the decisions taken by vessels' owners which are independent of sampling planned, so that no specific measures are proposed for this deviation. Although the behaviour of the fleet is impossible to change, the Institutes involved in sampling will continue in improving coordination with the sectors involved: owners and administration authorities.

Deviations caused by the data collection and sampling by the scientific observers on board can be improved widely through a better training and monitoring of the observers' tasks. In addition, place experienced observers on board whenever possible will be tried to. Oversampled of length cannot be avoided due to sampling method (concurrent sampling based on the metiers, not on the species). However, in the species with under sampling, deviations could be avoided by increasing the number of individuals in each sampling/trip. However, this point depends on the availability of catches for these species, which have been the main drawbacks for the sampling in 2020.

SECTION 1: BIOLOGICAL DATA

Text Box 1D - Recreational fisheries

General comment: This box fulfils paragraph 2-point (a) (iv) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2, Article 3 and Article 4 paragraph 1 of the Implementing Decision (EU) 2016/1701 on the format of the WP. This box is applicable to the Annual Report. This box is intended to provide information on the design, implementation and analysis of all components of sampling schemes/ surveys that are listed in Table 1D.

1. Description of the target population

There are no relevant achievements due to the absence of the target species (Bluefin tuna and Eels) in the area, as per listed species in Table 1D. Romanian Black Sea recreational fisheries are totally insignificant in total catches due to the lack of valuable and attractive species. This type of fishing is performed mainly from the coast and is connecting only with the species from Gobies (*Neogobius melanostomus* / black spotted goby and *Mesogobius batrachecephalus* / flat-head goby), Mediterranean horse mackerel (*Trachurus mediterraneus ponticus*), bluefish (*Pomatomus saltatrix*) and sometimes for grey mullet (*Mugilidae*). In Romania there are fishermen using recreational fisheries mainly in the touristic season – summer time. Due to the absence of the listed species (Bluefin tuna and Eels) in the area, Romania has no obligation to carry out biological sampling.

Squalus acanthias, *Raja clavata* and *Dasyatis Pastinaca*, species present on the Romanian Black Sea coast, are not reported in recreational fishery, and appear only as by-catch in commercial fishery. The other species listed in Table 3 (Decision (EU) 2019/910) are not present in the Black Sea area (Table 1D), as highly migratory ICCAT species, i.e. *tonidae* spp.

The target population consist of fishermen with licence to carry on recreational fishing techniques: on shore and boat.

2. Type of survey

Depending on species the type of survey can be questionnaires (e-mail and, phone), census like in the case of gobies and horse mackerel which data collection is exhaustive. Regarding the other species the catch composition and the effort per day are collected exhaustively ("census") based on the statement of anglers.

3. Data Quality

Not applicable

4. Data Analysis and processing

Not applicable

SECTION 1: BIOLOGICAL DATA

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

General comment: This box fulfils paragraph 4 of Chapter II of the Annex of the Implementing Decision (EU) 2019/910 on the multiannual Union programme and Article 2 and Article 4 paragraph (3) point (a) of the Implementing Decision (EU) 2016/1701 on the format of the WP.

General comment: This box is applicable to the Annual Report. This box is intended to provide information on the results obtained from the implementation of the pilot study.

1. Aim of pilot study

The recreational fishery is a popular activity with great social value in Romania. The legal framework for the collection of catch data from the recreational fishery of the EU Member States is governed by Commission Implementing Decision 2017/1701, Commission Decision 2008/949/EU and Ministerial Decision no. 252/2019. Romania has the obligation to report data for eel, elasmobranchs and highly migratory species (ICCAT Convention). There are no relevant achievements due to the absence of the target species (Bluefin tuna and Eels) in the area, as per listed species in Table 1D.

In order to plan comprehensive and solid future actions relating to the monitoring of recreational fisheries, a pilot study has already begun and is currently being updated in order to estimate, as accurately as possible, a number of parameters relating to recreational fishermen and their catches in Romania.

The primary objectives of the pilot study are:

- a) to estimate the number of active recreational fishermen in Romania;
- b) to record their fishing practices and activity;
- c) to collect biological and quantitative data of their catches.

The study covers all types of recreational fisheries in Romania.

2. Duration of pilot study

The duration of the pilot study is two years and is implemented in two phases. During the first phase a was conducted to identify the number of recreational fishermen and their demographics. Initiation of the pilot study that began in early 2020 and will end in late 2021.

3. Methodology and expected outcomes of pilot study

Methodology: the choice of a survey method for recreational fishing depends on a number of factors, including the purpose of the study, the extent of the fishery, the sampling frame or frames available, the distribution or intensity of fishing effort and the types of fishing methods used by fishermen. Methodologies for recreational fisheries surveys are often complex and statistical projects rigorous. The main sources of data collection mentioned above are the following documents: *sheets and questionnaires sent by each fisherman online, regular field surveys, interviews with fishermen and fishing permits issued.*

- a. the questionnaire is the source of information on all the data needed to carry out an assessment. The content of the questionnaire is prepared by NIMRD "Grigore Antipa" specialists, in collaboration with NAFA inspectors, in strict compliance with all requirements regarding the complexity of recreational fishing data;
- b. Fishing permits and annual reporting sheets are an indication of the total number of fishermen;
- c. Periodic field surveys (interviews with fishermen in the field on catches by species, gear, number of fishing trips, number of fishermen, by sex, etc.).

Brief description of the results obtained (including deviations from planned and justifications as to why if this was not the case).

Recreational fishing at sea has a seasonal character, practically the activity starts from the end of March when the water temperature reaches values higher than 7°C, the first fish that appear in the catches are goby species and ends late of November, with the decrease temperatures. Catches made during March to May are

still relatively small, except for goby. As the water temperature rises above 12-13°C, from the second decade of May, begin the catches of horse mackerel with hand lines. Also in May, small catches begin to be recorded for mullet species caught with the remote rod and fishing line from the dikes, respectively inside the port. More representative catches in recreational fishing are obtained from the second half of September for goby, horse mackerel, red mullet and bluefish.

The fishing gear used are hand lines with hooks, such as:

- * hand lines with 2 hooks for goby fishing from the boat.
- * hand lines with 10 hooks for fishing horse mackerel, bluefish, Danube shad and Black Sea shad from the boat or from the dikes.
- * hand line with 2 hooks for horse mackerel fishing on the shore or dikes.
- * fishing line with 2 hooks for fishing goby, grey mullet, red mullet from dikes.
- * fishing rod for bluefish fishing with artificial baits on the shore or dikes.
- * fishing rod for garfish fishing with midge from dikes.

The main groups of fish that are the object of fishing: fam. *Gobiidae*, *Carangidae*, *Mugilidae*, *Belonidae*, *Pomatomidae*, *Mullidae*, *Clupeidae* and *Dasyatidae*. In Romania, most fishermen use recreational fishing for food as subsistence fishing. Target species are: knout goby (*Mesogobius batracephalus*); round goby (*Neogobius melanostomus*); horse mackerel (*Trachurus mediterraneus ponticus*); bluefish (*Pomatomus saltatrix*); gray mullet (*Mugil cephalus*); Danube shad (*Alosa immaculata*); garfish (*Belone belone euxini*); stingray (*Dasyatis pastinaca*); Black Sea shad (*Alosa tanaica*) and red mullet (*Mullus barbatus ponticus*).

Data from 2020 were collected with the support of NAFA inspectors, from fishermen, from the sources mentioned above. Additional data and information were obtained through periodic field surveys, interviews with fishermen conducted by the research staff of the institute. In both individual and group interviews, the role of the interviewer is to moderate the discussion and create a framework in which participants feel stimulated to participate in the discussion.

According to the database of the National Agency for recreational fishing, in 2020 a number of **28,279** fishing permits were issued in the Black Sea, belonging to people from all over the country. The main counties in which permits were issued were: Constanța (36.3%); Bucharest (19.5%); Prahova (5.6%); Galati (3.5%); Timis (2.8%); Ilfov (2.8%); Dolj (2.6%); Buzau (2.1%); Brăila (2.1%); Ialomita (1.7%); Mehedinti (1.7%); Hunedoara (1.3%); Gorj (1.3%), Giurgiu (1.0%); Dâmbovița (1.0%) and other counties below 1% (14.8%).

According to art. 17 (1), from the MADR Order no. 252/2019, the fishermen who obtained a recreational fishing permit, have the obligation to present to NAFA, the centralized situation of the catches made by its members until 28 of February of the current year, for catches made in the previous year. **Unfortunately, given the epidemiological situation created at national level by the virus SARS_COV-2, in order to reduce the exposure and transmission of respiratory viruses in 2020, although almost 30000 premises were released, recreational fishing activities was very low. Many license holders have not been able to practice this type of fishing. For this reason, only about 1100 registered reports could be taken over and analysed.**

Structure of fishing permits by sex

As can be seen in Figure 1 the number of people who opted for a recreational fishing permit was dominated by men by 93.1 %, out of the total number of permits, compared to that of women by only 6.9 %.

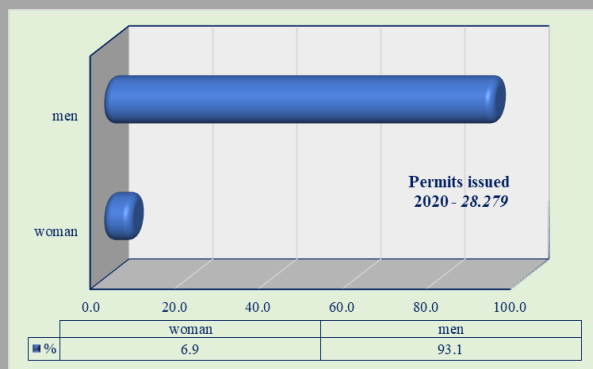


Fig. 1 Number of permits issued by ANPA, by sex in 2020

Structure of fishing permits, by age levels

Figure 2 shows that fishing permits issued were predominant for ages 40-64 (61.4%) respectively 25-39 years (22.4%) and 65-79 years (14.5%) (Fig. 2 and Fig. 3).

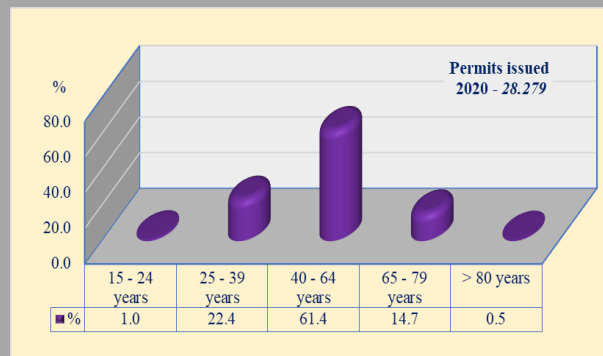


Fig. 2 Number of permits issued by ANPA, by age levels, in 2020

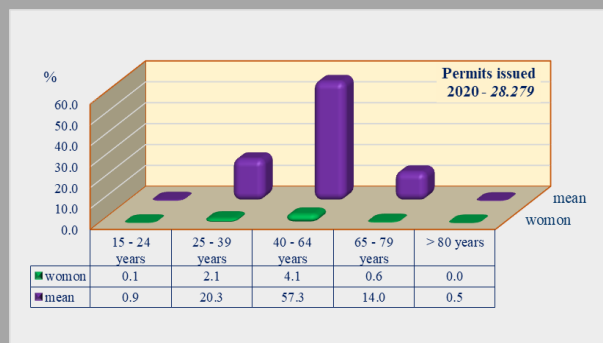


Fig. 3 Number of permits issued by ANPA, by age and sex, in 2020

In 2020, only 1049 reports received were processed and analysed, which achieved a number of **923** days trips / fishing days with a catch of **2,139.0 kg**. The species of fish species captured were: round goby - 39.80 %; horse mackerel - 25.77 %; Gray mullet - 19.91 %; bluefish - 4.24 %; Danube shad - 3.62 %, knout goby 2.33 %; stingray - 1.54 %; garfish - 1.07 %; red mullet - 0.34 %; whiting - 0.76 %; big-scale sand smelt - 0.25 %; sarda - 0.09 %; anchovy 0.09 % and other species – 018 %. The average productivity achieved was **2.04 kg** per fishing day and **12.73 kg** per fishing permit issued. Compared to those mentioned above, we extrapolated the data obtained, considering that of total permits issued, about 10% report activity and catches, respectively **2,139** reports, which would make a total catch in the Romanian area of Black Sea, about **21,400 kg**, in about 5000 - 6000 days of fishing (Fig. 4).

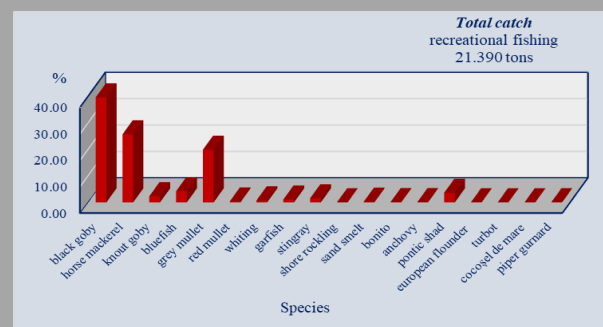


Fig. 4 The share of fish species caught in recreational fishing in the Black Sea in 2020

The quality of the data collected

After completing the questionnaires by each fisherman, they are taken over with the support of NAFA, by NIRMD "Grigore Antipa" specialists who, after a thorough verification of the data (cross-comparison of the data in the questionnaire with those from other sources of collection / information such as periodic surveys, interviews with fishermen in the field), are processing the data, in strict compliance with the correlation of data obtained from various sources. In the event of uncertainty regarding fishing data, the data providers are contacted for clarification or corrections if necessary. After a thorough verification, the data is centralized and processed according to the requirements of external users and uploaded on their platforms, in the

required formats, according to plans.

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

This first stage of data collection on recreational fisheries has achieved its initial objectives without major deviations, while identifying shortcomings and areas that require more effort to achieve greater results.

The lack of a register and / or fishing licenses, combined with the tightening of the legal framework for the acquisition of personal data, makes it difficult to identify amateur fishermen, thus restricting their cooperation with research institutes.

This is especially noticeable in the location of fishermen and results in very few records of this fishing method. Equally difficult is the reduction to the total number of tourists during the summer.

Efforts should be made to achieve a culture of collaboration between the fishing community and to increase the rate of their voluntary participation in such research during periodic sampling.

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

For the next period, the pilot study will continue with the aim to incorporate in the sampling frame a greater number of areas to be sampled in order to strengthen the representativeness of the sample and therefore the accuracy of the results, but also to advertise in a direct way the effort of monitoring and at the same time to strengthen the culture of participation in recreational fisheries community the country.

SECTION 1: BIOLOGICAL DATA

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

General comment: This box fulfils paragraph 2 points (b) and (c) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2 of the Implementing Decision (EU) 2016/1701 on the format of the WP.

General comment: This box is applicable to the Annual Report.

1. Method selected for collecting data.

Not applicable

2. Were the planned number achieved? Yes/ No

Not applicable.

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 **fresh** water. **The other species than these mentioned above, as per approved Romanian working program for 2020-2021, we are state the following: - sturgeons – commercial fishery is banned; - the alosa species spp., are included in Text Box 1F.**

SECTION 1: BIOLOGICAL DATA

Text box 1F: Incidental by-catch of birds, mammals, reptiles and fish

General Comment: This box fulfils paragraph 3-point (a) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910, on the multiannual Union programme; and Article 2 of the Implementing Decision (EU) 2016/1701 on the format of the WP. This box is applicable to the Annual Report. This box is applicable only for those sections where Member States have reported that they have been carrying out regular sampling. Results and deviations for Pilot studies should be reported under Pilot Study 2.

1. Results

In 2020 expeditions were made at sea on the board of commercial fishing vessels, as follows: **57** PSU sampling using pelagic trawler, **182** PSU from beam trawler, **84** PSU using pound nets and **24** PSU with gillnets, for the identification and monitoring of fish, mammals, birds, molluscs and crustaceans by-catches (Table 1F). Similar to the previous year, in 2020, on board observers did not record adequate data on marine mammals, birds and reptiles like by-catch in fishing gears. Only some fish species (bony and cartilaginous) and some invertebrates were recorded as by-catch, see Table 1 F.

The by-catches in the year 2020 were identified and monitored as follows:

Fishing pelagic trawl (SCT OTM 1-1): in 2020, 10 vessels practiced this type of fishing (1 vessel of 18-24 m, 8 vessels of 12-18 m and 1 boat of 6-12 m).

Fleet LOA (m)	Number of vessels	Total annual effort			Estimated annual effort (fishing days) by single vessel	Catch (kg)
		Day	number of fishing trips	hours		
6 – 12 m	1	35	191	191	35	3624
12 – 18 m	8	130	881	881	16	29041
18 – 24 m	1	9	72	72	9	1950
TOTAL	10	174	1144	1144	60	34615
Sampling						
Sampling trips*						
Minimum coverage (32.27 %)				57		
Optimal coverage (43.10.4-57.47 %)				75 - 100		

Thus, in pelagic trawling, a number of **21** observations were drawn up in commercial fishing and **36** sighting sheets from research survey. Although the target species in pelagic trawl fishing is sprat, in 2020 the main species identified species (estimated individuals as number): bluefish (*Pomatomus saltatrix* /-121.433), red mullet (*Mullus barbatus*/ 707.948), horse mackerel (*Trachurus mediterraneus*/ 329.789), european anchovy (*Engraulis encrasicolus*/524.127), round goby (*Neogobius melanostomus*/15.941), Caspian shad (*Alosa tanaica*/12.226), whiting (*Merlangius merlangus euxinus*/9.747), common stingray (*Dasyatis pastinaca*/463) and thornblack ray (*Raja clavata*/87). Very rarely, sporadic and very small numbers, species: asciniidae, flounder (*Platichthys flesus flesus*); greater weever (*Trachinus draco*), common sole (*Pegusa lascaris*), shore rockling (*Gaidropsarus mediterraneus*); stargazer (*Uranoscopus scaber*), black scorpionfish (*Scorpaena porcus*), brown meagre (*Sciaena umbra*), sea mouse (*Callionymus pusillus*) și crab (*Crangon spp*).

A total of 18 species have been identified, of which the following vulnerable species are included in the list of vulnerable species (according to Table 1D, EU Decision no. 910/2019): bluefish (58 exp.), red mullet (192 exp.), common stingray (3 exp.), thornback ray (1 exp.); Pontic shad (138 exp.), Caspian shad (690 exp), round goby (44 exp) and crabs (73 exp.).

Variables needed for estimation of total number of vulnerable specimens caught:

a. **the bycatch rate (T), per species**: bluefish - 2.76; red mullet - 9,14; common stingray - 0,143; thornback ray - 0,048; Pontic shad - 6.57; Caspian shad - 32.86; round goby - 2.09 and crabs - 3.48;

b. **the estimate of the individuals caught by the fleet was calculated** (I/174): bluefish - 480.24; red mullet - 1590.036; common stingray - 24.882; thornback - 8.352; Pontic shad - 1143.18; Caspian shad – 5717.64; round goby –363.66 and crabs - 605.52.

During the period analysed, the observers on board the vessels did not record any specimen from the group of marine mammals, birds or reptiles, caught in the pelagic trawl, and in the official statistics there are no catches

discharged into the sea. However, during the expeditions have been reported around the fishing gear, of dolphins the species: common dolphin (*Delphinus delphis ponticus*); marsuin (*Phocoena phocoena*) and rough-toothed dolphin (*Tursiops truncatus ponticus*) and also birds: great cormorant (*Phalacrocorax carbo*), Black-headed gull (*Larus ridibundu*) and Caspian gull (*Larus canhinans*).

Fishing of beam trawl (SCT TBB 2-1): the main fishing technique on the Romanian coast (about 92.22 % of the total fishing). In 2020, a number of vessels (6-12 m / 9 vessels; 12-18 m 21 vessels; 18-24 m / 1 vessel and > 24 m / 4 vessels) were activated in specialized fishing for Rapa whelk.

Fleet LOA (m)	Number of vessels	Total annual effort			Estimated annual effort (fishing days) by single vessel	Catch (kg)
		Day	number of fishing trips	hours		
6 – 12 m	9	279	1930	1948	31	431215
12 – 18 m	21	886	7404	7767	42	2036665
18 – 24 m	1	51	461	500	51	120295
> 24 m	4	253	2112	2112	63	715431
TOTAL	35	1,469	11,907	12,327	42	3303606
Sampling						
Sampling trips*						
Minimum coverage (1.5 %)			182			
Optimal coverage (1.75-6.3 %)			210 - 750			

In 2020, a number of 19 marine species were identified and estimated individuals as number: (509,948 specimens), respectively:

Fish species *Callionymus pussillus* (sea mouse/8); *Uranoscopus scaber* (stargazer/1); *Hippocampus hippocampus* (sea horse /10); *Scophthalmus maximus* (turbot/25); *Merlangius merlangus euxinus* (whiting/23); *Gobius niger* (black goby/6); *Neogobius melanostomus* (round goby /2); *Mullus barbatus* (red mullet/3); *Scorphaena porcus* (scorpionfish /4); *Nerophis ophidion* (straightnose pipefish/1); *Parablennius sanguinolentus* (Black Sea blenny/3);

Mollusca: *Mytilus galloprovincialis* (mussels/485.091); *Scapharca inaequivalvis* (inequivalve ark/198); *Chamelea gallina* (striped venus/7); *Mya arenaria* (sand gaper/22138), *Flexopecten glaber ponticus* (pecten/5);

Crustacea: *Liocarcinus navigator* (crabs/121); *Liocarcinus holsatus* (crabs/65);

Ascididae: and *Ascidella aspersa* (ascidie/2.237).

In 2020, a number of 182 sheets for bony and cartilaginous fish species were made, in which a total number of 19 species were identified, of which the following vulnerable species are included in the List of vulnerable species: turbot (25 ind.); sea horse (10 ind.); mussels (609 ind.); striped venus (7 ind.); whiting (100 ind.); black goby (6 ind.); round goby (2 ind.); red mullet (3 ind.) and crabs (186 ind.).

Variables needed for estimation of total number of vulnerable specimens caught (2020):

a. **the bycatch rate (T), per species:** turbot - 0,138; sea horse - 0.055; mussels - 3.347; striped venus - 0.039; whiting - 0,550, black goby - 0,33; round goby - 0.011, red mullet - 0,017 and crabs - 1,022;

b. **the estimate of the individuals caught by the fleet was calculated** (I/1,469): turbot - 202,722; sea horse - 80.795; mussels - 4916.743; striped venus - 57.291; whiting - 807.950; black goby - 484.770; round goby - 16.159, red mullet - 24.973 and crabs - 15001.318.

During the period analysed, the observers on board the vessels did not record any specimen from the group of marine mammals, birds or reptiles, caught in the pelagic trawl, and in the official statistics there are no catches discharged into the sea. However, in this period of time, have been reported the presence around the fishing gear, of dolphins, the species: common dolphin (*Delphinus delphis ponticus*); marsuin (*Phocoena phocoena*) and rough-toothed dolphin (*Tursiops truncatus ponticus*) and birds: great cormorant (*Phalacrocorax carbo*); pygmy cormorant (*Phalacrocorax pygmaeus*), eurasian coot (*Fulica atra*), Black-headed gull (*Larus ridibundu*) and Caspian gull (*Larus canhinans*).

Pound net fishing (SCT FPN 3.2): in 2020, they practiced this type of fishing, a number of 5 boats smaller than 6 m and 22 boats of 6-12 m.

Fleet LOA (m)	Number of vessels	Total annual effort		Estimated annual effort (fishing days) by single vessel	Catch (kg)
		day	hours		
< 6 m	5	27	31	5	2376
6 – 12 m	28	659	702	24	102571
TOTAL	33	688	733	5	104890
		Sampling			
		Sampling trips*			
Minimum coverage (12.25 %)		84			
Optimal coverage (16.5-20.5 %)		114 - 140			

In 2020, in the pound net fishing, a very large number of fish species (33 species) were monitored and identified, in addition to the target species (estimated individuals as number), respectively: sprat (*Sprattus sprattus*/1633000), European anchovy (*Engraulis encrasicolus*/10735300); horse mackerel (*Trachurus mediterraneus ponticus*/274026); Pontic shad (*Alosa immaculata*/4190); Caspian shad (*Alosa tanaica*/78925); garfish (*Belone bellone*/22040); Gray mullet (*Mugil chephalus*/2750); round goby (*Neogobius melanostomus* / 133165), big scale sand smelt (*Atherina pontica*/890375); bluefish (*Pomatomus saltatrix*/970), picked dogfish (*Squalus acanthias*/30), red mullet (*Mullus barbatus*/152200); whiting (*Merlangius merlangus*/357750); common sole (*Pegusa nasuta*/200); knout goby (*Mesogobius batracephalus*/5650) and turbot (*Scophthalmus maximus*/123). With which in small numbers or in the form of isolated specimens: kilka (*Clupeonella cultriventris*); black scorpionfish (*Scorpaena porcus*); sea horse (*Hippocampus guttulatus*); sea mouse (*Callionymus pusillus*); picarel (*Spicara smaris*); shore rockling (*Gaidropsarus mediterraneus*); flounder (*Platichthys flesus flesus*); sea needle (*Syngnathus* spp.); loach (*Noemacheilus barbatulus barbatulus*); ski drum (*Umbrina cirrosa*); greater weever (*Trachinus draco*); stargazer (*Uranoscopus scaber*); black goby (*Gobius niger*); weatherfish (*Ophidion rochei*); brown meagre (*Sciaena umbra*) and comber (*Serranus cabrilla*).

In 2020, a number of 84 fish species sheets were made, in which a number of 12 vulnerable species were identified (according to Table 1D, EU Decision no. 910/2019), respective: Caspian shad (15 exp.); Pontic shad (9 exp.); whiting (33 exp.); big scale sand smelt (801 exp); round goby (17 exp.); knout goby (4 exp.); red mullet (433 exp); garfish (7 exp.), sea horse (45 ind.).

Variables needed for estimation of total number of vulnerable specimens caught:

a. **the bycatch rate (T), per species:** Caspian shad - 0,179; Pontic shad - 0,108; whiting - 0.393; big scale sand smelt - 9.536; round goby - 0,203; knout goby - 0.048; garfish - 0.084; sea horse - 0.536;

b. **the estimate of the individuals caught by the fleet was calculated (I/686):** Caspian shad - 122.79; Pontic shad - 74.088; whiting - 269.598; big scale sand smelt - 6541.696; round goby - 139.258; knout goby - 32.928; garfish - 57.624; sea horse - 367.69;

Observers at the landing points located along the Romanian coast, during the analysed period, did not report any specimens from the group of marine mammals, birds or reptiles, caught in net pounds and in the official statistics there are no catches discharged into the sea. Regarding their presence in the area of the pound nets activity, were reported singular or flocked presences of dolphins (4-7 specimens), in constant motion in search of food, specimens of mammals approaching the fishing tool, belonging to the species: marsuin (*Phocoena phocoena*) and common dolphin (*Delphinus delphis ponticus*). Also, around the pound nets, the presence of specimens from different groups of birds was reported, in particular: great cormorant (*Phalacrocorax carbo*), pygmy cormorant (*Phalacrocorax pygmeus*) and Caspian gull (*Larus canhinans*). The behaviour of these species was highlighted by looking for food resources or a place to rest (aspect observed in migratory species).

Gill nets fishing (SCT GSN 4.2):

The monitoring of the complementary catches obtained in the gill nets fishery was carried out every two months in the fishing landing points located along the Romanian Black Sea coast. A first observation is that for the small boats (generally under 6 m), that are used for fishing, did not allow the access on board during fishing, of the observers, therefore, most of the data and information collected were based on interviews or fishermen's statements.

The target demersal species were: turbot, flat-head goby, round goby, thornback ray, common stingray, picked dogfish and pelagic species: Danube shad, Caspian shad, bluefish, gray mullet.

Fleet LOA (m)	Number of vessels	Total annual effort		Estimated annual effort (fishing days) by single vessel	Catch (kg)
		day	hours		
< 6 m	5	13	39	3	625
6 – 12 m	29	391	1567	18	50738
12 – 18 m	18	101	524	6	27397
18 – 24 m	1	5	36	5	2105
> 24 m	2	6	31	3	1528
TOTAL	55	345	2197	35	82393
		Sampling			
		Sampling trips*			
Minimum coverage (2.9 %)		15			
Optimal coverage (3.8-9.7 %)		20 - 50			

In 2020, a number of 15 observation sheets were prepared for fish species in which a number of 8 vulnerable species were identified (according to Table 1D, EU Decision no. 910/2019), respectively: common stingray (*Dasyatis pastinaca*), thornblack ray (*Raja clavata*), picked dogfish (*Squalus acanthias*). Pontic shad (*Alosa immaculata*), Caspian shad (*Alosa tanaica*), bluefish (*Pomatomus saltatrix*), Gray mullet (*Mugil chephalus*) and round goby (*Neogobius melanostomus*). In the fishing with fixed pelagic nets were manipulated: Danube shad (450 individuals), Caspian shad (303 ind.); Gray mullet (77 ind.), bluefish (258 ind.). And in the demersal ones: round goby (203 individuals); thornback ray (6 ind.); common stingray (11 ind.); whiting (158 ind.) and picked dogfish (3 ind.).

Variables needed for estimation of total number of vulnerable specimens caught:

a. the bycatch rate (T), per species: Danube shad - 30.00; Caspian shad - 20.20; bluefish – 5.13; round goby - 13.53; picked dogfish - 0.267; common stingray - 1.667; thornback ray - 1.534;

b. the estimate of the individuals caught by the fleet was calculated (I / 345): Danube shad - 10350.00; Caspian shad - 6969.00; grey mullet - 1769.85; round goby – 4667.85; picked dogfish - 92.115; common stingray – 575.115; thornback ray – 529.23.

The observations at the landing points located along the Romanian coast, during the analysed period, and the interviews with fishermen pointed out that no species from the group of marine mammals, birds or reptiles, was caught in gill nets and in the official statistics there are no catches and discharged into the sea. However, in the sampling of other metiers (pound net and set gillnets), some fish species of the Table 1D of the Decision 2019/910 have been recorded.

Fishing activities carried out with LHP_LHM / rods, rods, longlines and Misc / divers, are selective (no by-catch is obtained). At the same time, it uses small boats, which do not allow the presence of other people on board.

Follow-up of the study (by-catch):

- * Monitoring catches fleet segments, highlighted a major impact only fishing with beam trawl;
- * The bycatch rate in Rapa whelk beam trawl fishery is 0.13% from total catches on average in June, increases up to 0.26% total catches in July and diminishes to 0.02-0.07% in the autumn. The turbot bycatch rate is 0.15% total catches in the summer period, while in the autumn it is between 0-0.12% total catches per fishing day with an average level of 0.01% annual total catches.
- * Finding measures are to increase the selectivity of fishing gear. For beam trawl is necessary to increase the mesh size;
- * Obligation for fishermen to fill in the fishing logbook, if there are incidental by-catches of fishes, birds, mammals or reptiles occurred;
- * Continued monitoring of catches per fleet segment and to estimate the level of fishing and the impact of fishing activities on marine biological resources and marine ecosystems, that will be continued in the coming years.

2. Deviations from Work Plan

There were no deviations from what was planned in the WP

3. Data quality

The observers on board long liners have protocols for collecting data on incidental bycatch species when occurred. Specific training and forms are designed for recording bycatch. In addition, the onboard observer protocol instructs observers to report on the use of mitigation devices.

Questions to be addressed are listed below:

- Does the onboard observer protocol contain a check for rare specimens in the catch at opening of the codend? If YES is the observer instructed to indicate if the codend was NOT checked in a haul? - **YES**
- In gill nets - and hook-and-line fisheries: does the onboard observer protocol instruct the observer to indicate how much of the hauling process has been observed for (large) incidental bycatches which never came on board (because they fall out of the net)? In large catches: does the protocol instruct to check for rare specimens during sorting of the catch (i.e., at conveyor belt)? Is the observer instructed to indicate what percentage of the sorting or hauling process has been checked at “haul level”? - **YES**
- Does the onboard observer protocol instruct to report on the use of mitigation (i.e. Escape Devices or Acoustic Deterrent Devices)? - **YES**
- Does the sampling design and protocol follow the recommendations from relevant expert groups? Provide appropriate references. If there are no relevant expert groups, the design and protocol have to be explained in the text. - The sampling design and protocol uses recommendation in “*Monitoring discards in Mediterranean and Black Sea fisheries: methodology for data collection*”, Edited draft, VI. 2018, FAO, 76 pp and in “*Monitoring the incidental catch of vulnerable species in the Mediterranean and the Black Sea: methodology for data collection*, Draft (June, 2018)”, FAO, 101 pp.
- Are data quality issues taken into account? - **YES**
- How are data (and samples) stored - In xls. files and protocols.

SECTION 1: BIOLOGICAL DATA

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

General comment: This Box fulfils paragraph 3-point (c) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2 and Article 4 paragraph (3) point (b) of the Implementing Decision (EU) 2016/1701 on the format of the WP.

General comment: This box is applicable to the Annual Report. This box is intended to provide information on the results obtained from the implementation of the pilot study.

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) 2019/910. 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, including the species listed in Table 1D;
- b. Data to assist in the assessment of the impact of fisheries;
- c. data for estimating the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems

2. Duration of pilot study

Two years. Start in 2020, January 1st, and end on 31st December 2021.

3. Methodology and expected outcomes of pilot study

The methodology and techniques that were used for the collection, verification, processing and analysis of data and for the assessment of fish stocks are those generally accepted for the Black Sea basin and in accordance with international methodology. Data were collected in accordance with the GFCM instructions (*Monitoring the incidental catch of vulnerable species in the Mediterranean and the Black Sea: methodology for data collection*). The study is based on the data collected in 2020, to assess the effect of beam trawling on the juvenile stages of the turbot (*Scophthalmus maximus*, also called *Psetta maxima maeotica*) and picked dogfish (*Squalus acanthias*). Also, the study includes data about the species composition of the by-catch in rapa whelk fisheries: spatial distribution of the target species, abundance and length-weight structure. The study covers the following activities: sampling with beam trawl; determination of the qualitative and quantitative structure of the by-catch; determination of the absolute and standard length and individual weight of the turbot and picked dogfish, collected as by-catch; collection of data for gender and life stages.

The method used was that of area investigation using the beam trawl for the sampling procedure. Data collection was carried out on board vessels using standard fishing gear used - beam trawl. Biological data for the pilot project on evaluation of by-catch in the Rapa whelk fishery: geographic coordinates (start and end points), water depth (m), duration of trawling activities, mean trawling speed (Knt/h), total Rapa whelk catch/trawl, structure on species, species composition of by catch, absolute and standard length, individual weight of target species, determination of age (for turbot ≤ 45 cm); sex and maturity (for turbot ≤ 45 cm).

Laboratory analyses: the age of the species was analysed in the laboratory. Otolith samples were analysed with the use of a binocular microscope. The average, minimum and maximum length of the individuals were measured and based on this data the percentage distributions of the size classes was calculated.

Statistical methods: the percentage of the turbot that was discharged into the sea, in the fishing of Rapa whelk from the Romanian coast, was estimated and covered in two different ways: the average of daily trawls and the average obtained per trawl. Monthly averages of the length and weight of turbot were estimated. General statistics on catches of turbot, weight and length data were presented. The XLSTAT software was used to present the histogram of the structure of the length and weight of the turbot discharged into the sea, as well as the capture obtained for Rapa whelk. Statistics on histogram classes were presented, including lower- and upper-class limit, frequency, relative frequency and density.

Sampling plan: in the sector between Sulina - Mangalia, being carried out a number of 51 trawls in 10 fishing days, the distribution of the sampled stations being presented in Fig. I.2.1, between the isobaths of 15 - 26 m. The investigations regarding the Rapa welk fishing were carried out on board the research vessel "Steaua de Mare 1" (year of construction / 1981, ROU-P-040254 CT), belonging to the National Institute for Marine Development Research "Grigore Antipa" Constanța, having the following characteristics:

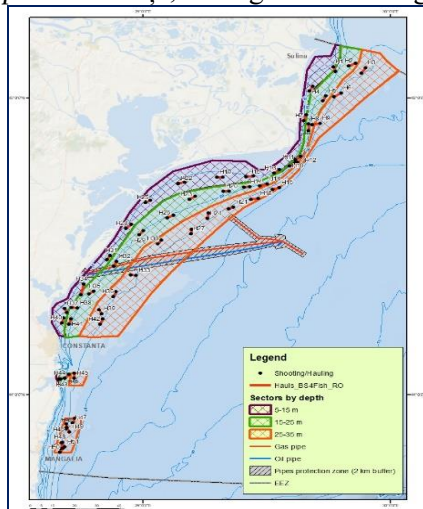


Fig. I.1.3 Distribution of sampling station, 2020

- Type	B-410;	- Maxim tonnage	134 t;
- Total length	25.71 m;	- Net tonnage	40 t;
- Maximum width	7.22 m;	- Speed	7 - 10 Nd;
- Maximum draft	2.91 m;	- Boarding staff	7 persons;
- Engine power	420 kw (570 HP);	- Researcher team	6 persons.

The research vessel Steaua de Mare 1, is equipped with:

- vertical acoustic research probe;
- mesh probe;
- winch probe;
- trawl winches;
- manoeuvring winches;
- wading / 500 m on the drum;
- pelagic and demersal spacing panels;
- pelagic and demersal trawl reinforcement elements.

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

During RCG Med & BS 2017 a list of important métiers for incidental catches were prepared and agreed. According National Work Plans approved for 2020, Romania must carry out the pilot study: *Pilot study for assessing incidental catches of vulnerable species from set nets (gillnets).*

Given the fact in net fishing, due to selective gears use the by-catches are very small and these have no major impact on the marine ecosystem and fish species resources. Based on this argument and the needs of end users, Romania continued to conduct pilot studies starting in 2017, on the assessment of by-catches in beam trawlers fishery because it is more relevant, as per total catches reproted.

5. Incorporation of results from pilot study into regular sampling by the MS

a. The current state of specialized fishing for Rapa welk, in the marine area of Romania

Harvesting the Rapa whelk (*Rapana venosa*), in Romanian Black Sea coast area, is done by three methods:

- ♦ manual harvesting, in the southern part of the Romanian Black Sea coast, between Constanța and Mangalia, between 5 - 25 m, on a surface of approximately 200 km²;
- ♦ traps / cages, in the southern area between Eforie Sud and Mangalia, between 5 - 12 m;
- ♦ beam trawl, legalized since July 2013, in the northern part of the coast, between Baia Mamaia and Sf. Gheorghe, between 17-30 m, a surface of approximately 1,400 km²;

The first two methods are environmentally friendly, allowing high selectivity of catches, protection of habitats and access to rocky places. The big disadvantage is the high operating costs, mainly due to the high load of divers and the price of cages. The use of beam trawls is a practical method that allows to increase the catches, but limited to uncoded areas.

The catch: specialized fishing for Rapa whelk has gained significant importance, starting with the second half of 2013, when trawling was legalized by MO no. 1696/2013. This led to an increase in the number of vessels with a length of more than 12 m, equipped with mixed fishing facilities / gear, using stationary gear (nets, cages, longlines) and towing-filtering tools (pelagic trawls and beam trawl). Since then, Rapa whelk catches have increased from one year to another, ranging between 1761 kg in 2009 to 9211247 kg in 2017 (Fig. 5.1).

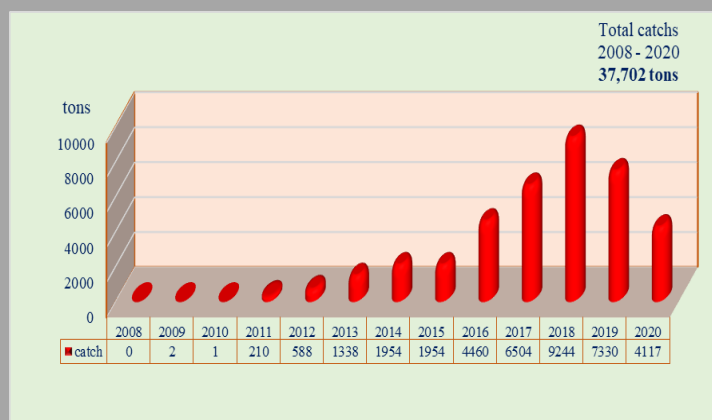


Fig. 5.1. Dynamics of Rapa whelk catch (kg) in the Romanian coast, during 2008 - 2020

b. Qualitative composition and distribution of by-catch

The main area of activity is between Constanța and Sf. Gheorghe, between the isobaths of 15 - 26 m. At the Romanian Black Sea coast, in specialized fishing for Rapa whelk were identified, a varied number of complementary species, which differs from one year to another. Thus, in 2020, 11 species of fish were reported, 4 species of molluscs, 2 species of crustacean and 1 species of ascidia (Table 5.1):

Tabel 5.1 List of by-catch species in *Rapana venosa* beam-trawl fishing, 2020

Species	number	weight (kg)
<i>Callionymus pussillus</i>	8	0.027
<i>Uranoscopus scaber</i>	1	0.007
<i>Hippocampus hippocampus</i>	10	0.06
<i>Scophthalmus maximus</i>	4	0.091
<i>Gobius niger</i>	6	0.041
<i>Neogobius melanostomus</i>	2	0.015
<i>Mullus barbatus</i>	3	0.025
<i>Scorphaena porcus</i>	4	0.331
<i>Nerophis ophidion</i>	1	0.006
<i>Parablennius sanguinolentus</i>	3	0.016
<i>Scophthalmus maximus</i>	25	33.141
<i>Squalus acanthias</i>	5	17.37
<i>Dasyatis pastinaca</i>	4	16.40
<i>Mytilus galloprovincialis</i>	-	485.091
<i>Scapharca inaequivalvis</i>	-	0.992
<i>Mya arenaria</i>	-	22.138
<i>Chamelea gallina</i>	7	0.019
<i>Flexopecten glaber</i>	5	0.052
<i>Liocarcinus navigator</i>	121	1.052
<i>Liocarcinus holsatus</i>	65	0.186
<i>Ascidella aspersa</i>	-	2.237

Regarding the distribution of by-catch species, they were distributed over the entire investigated area; from the group of gobies, the most common, was the goby species, *Gobius niger*, *Neogobius melanostomus* and *Scorphaena porcus* (Fig. 5.2). Also, other frequently identified species were along with *Callionymus pussillus*, sea horse (*Hippocampus hippocampus*) and sea needle (*Nerophis opidion*) (Fig. 5.3).

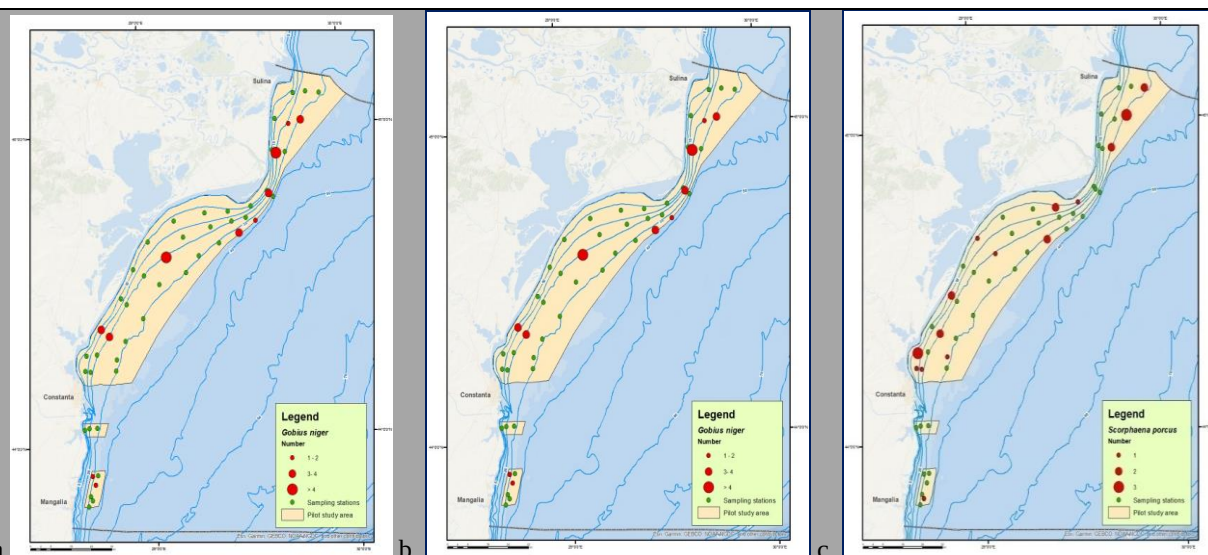


Fig. 5.2 Distribution of by-catch species *Gobius niger* (a), *Neogobius melanostomus* (b) and *Scorphaena porcus* (c) in *Rapana venosa* beam-trawl fishing, 2020

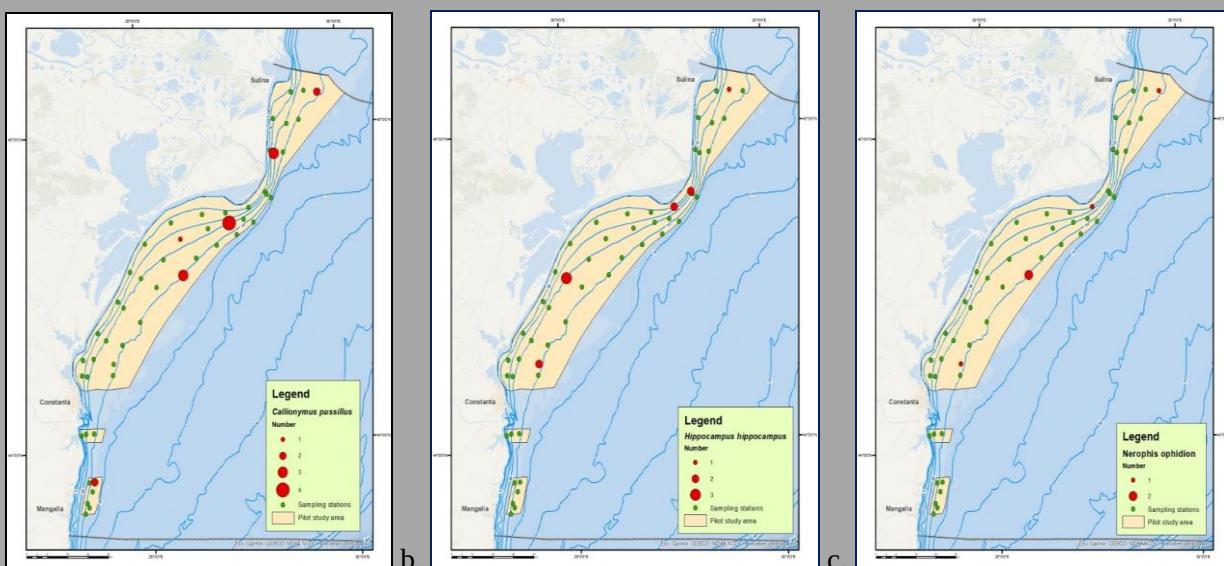


Fig. 5.3 Distribution of by-catch species *Callionymus pussillus* (a), *Hippocampus hippocampus* (b) and *Nerophis opidion* (c), in *Rapana venosa* beam-trawl fishing, 2020

At the same time, other species have been identified, in isolated specimens, such as: common stingray (*Dasyatis pastinaca*) and dog fish (*Squalus acanthias*), (Fig. 5.4).

Spatial dynamics of turbot by-catches, total weight, percentage distribution

In 2020, significant catches per trawl were estimated at no more than 1-2 exp. / day of fishing. The specimens were found along the coast, the northern area, between Periboina and Sf. Gheorghe and the sector between Chituc-Edighiol (Fig. 5.5).

The percentage ratio of bycatch was 0.1107%, as an average of the data per day of trawling, with a maximum daily quota of 0.0219% (Table 5.2).

Table 5.2 Average weight of turbot (kg / trawl) and percentage of total catch obtained in specialized fishing for Rapa whelk on the Romanian coast, during 2020

Nr. crt.	Total catch Rapa whelk	Turbot catches (kg)	Turbot (ind./trawl)	Average weight of turbot	% from total Rapa whelk
TOTAL 2020	770.189	9.438	25	0.377	1.226

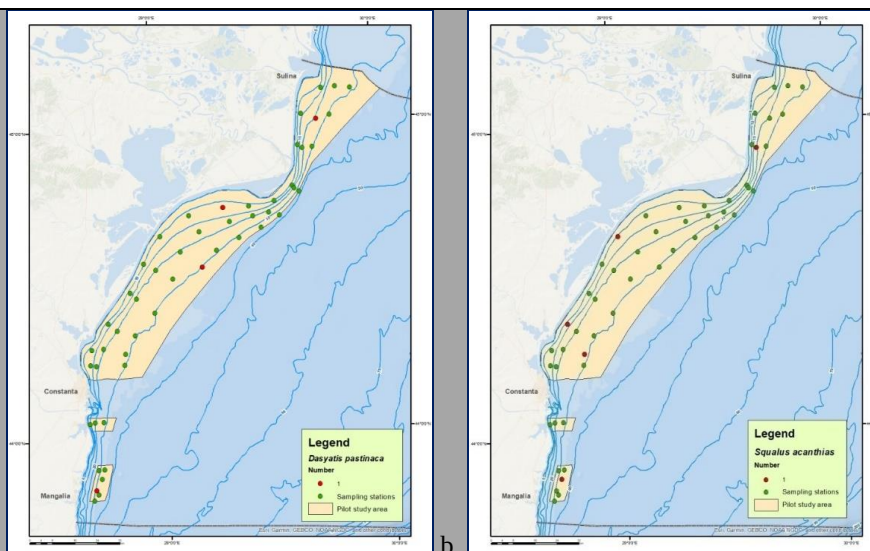


Fig. 5.4 Distribution of by-catch species *Dasyatis pastinaca* (a) and *Squalus acanthias* (b), in *Rapana venosa* beam-trawl fishing, 2020

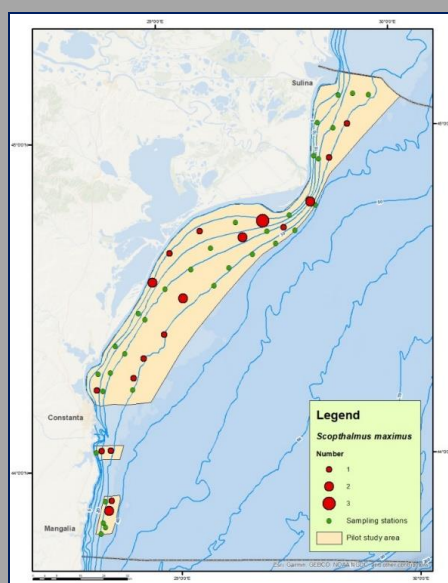


Fig. 5.5 Turbot abundance (ind./trawl), in *Rapana venosa* beam-trawl fishing, 2020

Thus, in 2020, the turbot individuals (25 specimens) were analysed, being observed the length classes between 10 - 44 cm and the weight classes between 13.0 - 1,400 g predominated (Fig. 5.6, Table 5.3 and Table 5.4). Juvenile specimens were also identified. In terms of weight, the dominant weight classes were 1.147 - 1.470 kg (35.48%), followed by classes 0.75-1.217 kg (29.83%) and 1.217-2.30 (34.68%).

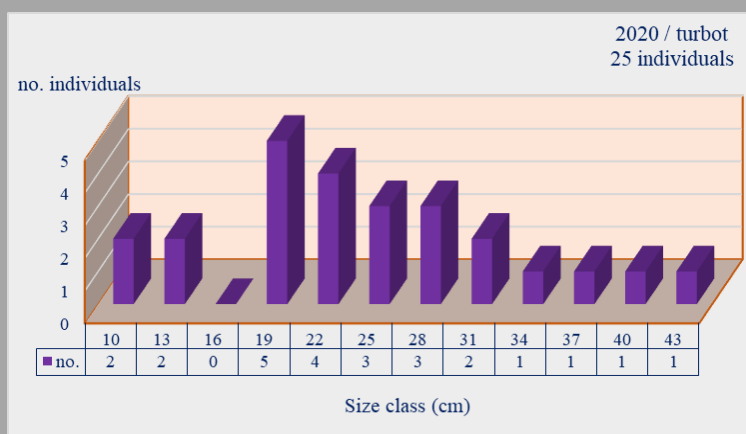


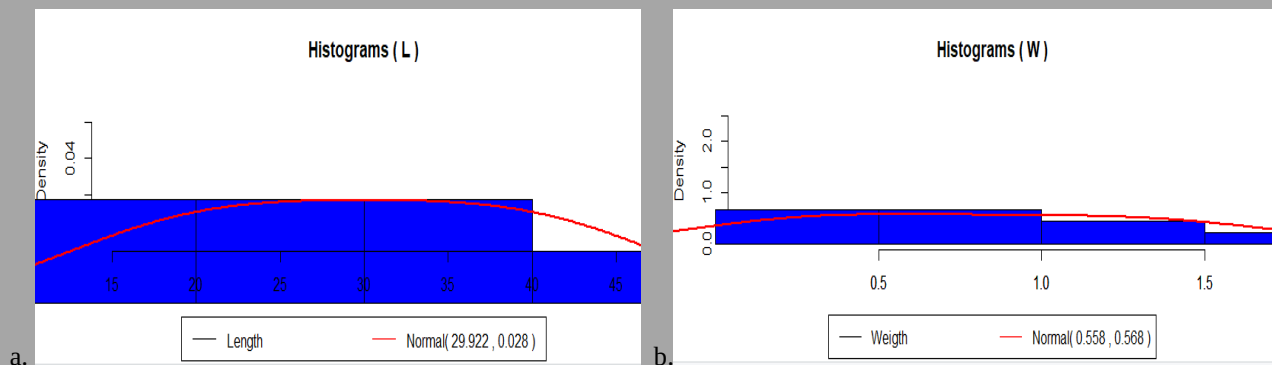
Fig. 5.6 Structure by length classes turbot (number of individuals) like by-catch in Rapa whelk, beam-trawl fishing, 2020

Table 5.3 Statistical data for the structure of turbot length classes (cm), in 2020

Lower bound	Upper bound	2020		
		Frequency	Relative frequency	Density
10.00	14.99	4	0.2	0.032064128
15.00	19.99	2	0.1	0.016032064
20.00	24.99	7	0.3	0.056112224
25.00	29.99	4	0.2	0.032064128
30.00	34.99	4	0.2	0.032064128
35.00	39.99	2	0.1	0.016032064
40.00	44.99	2	0.1	0.016032064

Table 5.4 Statistical data for the structure of turbot weight classes (g), in 2020

Lower bound	Upper bound	2020		
		Frequency	Relative frequency	Density
0.000	0.099	6	0.2	2.424242424
0.100	0.199	7	0.3	2.828282828
0.200	0.399	2	0.1	0.40201005
0.400	0.599	2	0.1	0.40201005
0.600	0.799	4	0.2	0.804020101
0.800	0.999	2	0.1	0.40201005
1.000	1.199	1	0.0	0.201005025
1.200	1.399	0	0.0	0
1.400	1.599	1	0.0	0.201005025

**Fig. 5.7** Histograms on turbot length (a) and weight (b) classes in Rapa whelk beam-trawl fishing, 2020**Total catch of *Rapana venosa* and % of turbot species as by catch**

In 2020, the total weight of Rapa whelk catches was 770.189 kg and the average weight of catches was 15.10 kg / haul, ranging from 0.0–107.291 kg / haul. The dominant group (70.59%) weighs 0.0-8.89 kg / trawl, followed by the weight group 10.0-19.99 kg / trawl (9.8%), while the low catches are 30.00 - 39.99 kg / haul and 40.0 - 49.99 kg / haul, and were recorded with 1.96% each, of the total catch (Table 5.5).

Table 5.5 Statistical data on the distribution of Rapa whelk (kg / trawl) by weight classes

Lower bound	Upper bound	Frequency	Relative frequency	Density
0.000	9.999	36	0	0
10.000	19.999	5	0.03621	0.00044
20.000	29.000	3	0.01934	0.00016
30.000	39.000	1	0.02981	0.00037
40.000	49.999	1	0.05365	0.00053
50.000	59.999	2	0.06706	0.00060
60.000	69.999	0	0.0	0.0
70.000	79.999	0	0.0	0.0
80.000	89.999	0	0.0	0.0
90.000	99.999	2	0.11326	0.00144
100.000	109.999	1	0.14456	0.00162

Regarding the biometrics aspects, the analysed Rapa whelk individuals were distributed by weight and length classes. Thus, in 2020, the Rapa specimens analysed had a spectrum of lengths between 3.5 cm and 10.0 cm, dominating the length classes between 5.5 - 7.0 cm and the weight classes between 13.0 - 2,400 g (Fig. 5.8). Regarding the distribution by sex, 47.43% females and 52.57% males were identified.

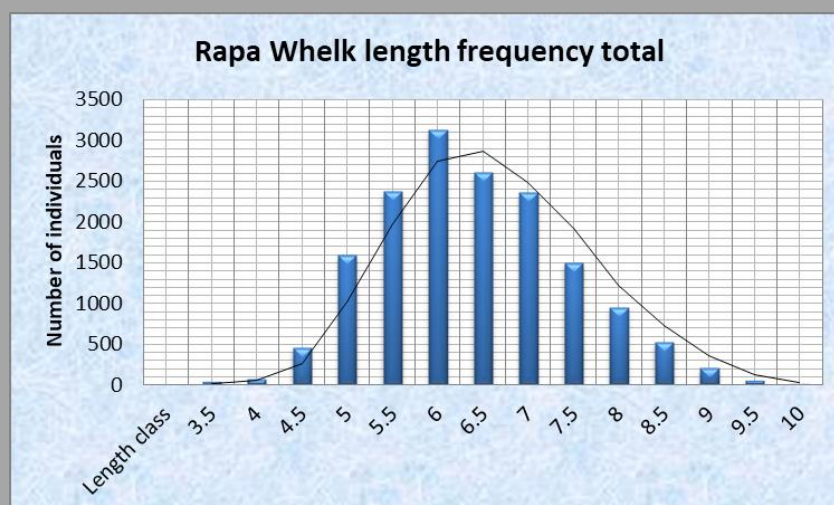


Fig. 5.8 Structure on length classes of Rapa whelk (no. individuals), in 2020

Table I.1.6 Statistical data for the structure of Rapa whelk length classes (cm), in 2020

Lower bound	Upper bound	Frequency	Relative frequency	Density
4.0	4.9	37	0.07749	0.003
5.0	5.9	270	0.09389	0.009
6.0	6.9	1614	0.11327	0.013
7.0	7.9	1551	0.14759	0.015
8.0	8.9	379	0.16990	0.017
9.0	9.9	70	0.26230	0.029

Table I.1.7 Statistical data for the structure of Rapa whelk weight classes (g), in 2020

Lower bound	Upper bound	Frequency	Relative frequency	Density
15.00	25.00	37	0.07749	0.003
50.00	59.00	270	0.09389	0.009
60.00	70.00	1614	0.11326	0.011
71.00	80.00	1551	0.14755	0.015
81.00	90.00	379	0.16990	0.017
91.00	92.00	70	0.26229	0.030

Analysing the histograms, it is observed that the groups with a weight between 55 and 90 g and with a length between 6 and 10 cm, predominated (Fig. 5.9).

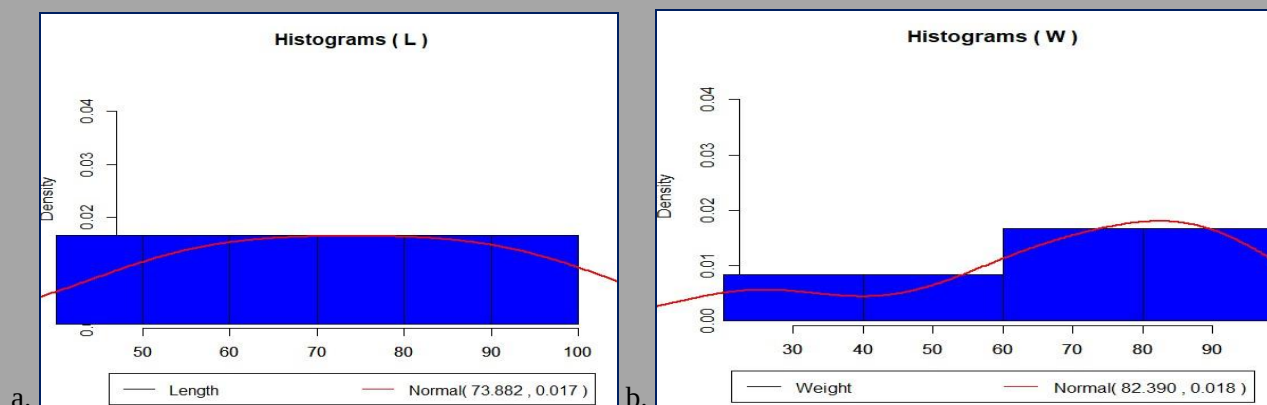


Fig. 5.9 Histograms of distribution by length (cm) and weight (g) classes for Rapa whelk, in 2020

Below, in Fig. 5.10 is shown the percentage of catches of turbot obtained in specialized fishing for Rapa whelk, with beam trawl (% of catches of Rapa), in 2020, where it is observed that the highest percentage is found along the northern coast, in the perimeter of Cape Midia - Periboina and where the catches are low, but the juvenile turbot, can appear more often as being discharged back into the sea.

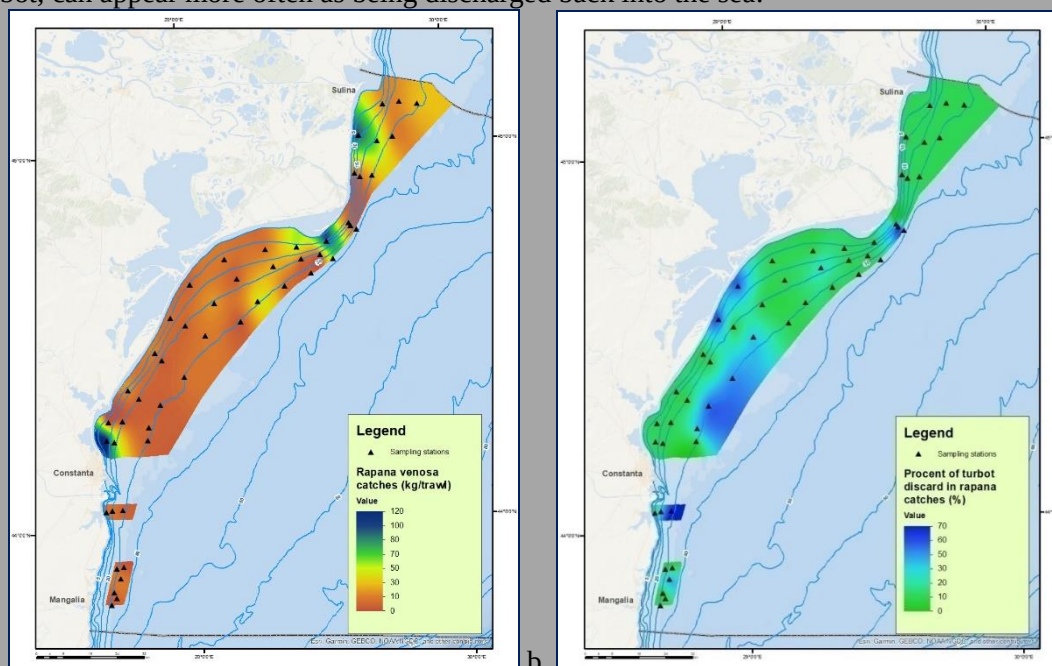


Fig. 5.10 Rapa whelk total catch (kg/haul) and turbot % discard from beam trawl, in 2020

CONCLUSIONS

- ◆ the pilot study was carried out in 2020, being performed a number of 51 beam trawls;
- ◆ common species like by catch are: mussels, crab, sea horse, sea needle, goby, whiting and turbot. Rare fish species were: red mullet, black scorpionfish, tub gurnard, common sole, stargazer. These were found mainly in two sectors: Gulf of Mamaia - Corbu and Peritesca - Sulina;
- ◆ in the by-catches from 2020, a number of 509948 specimens were identified, belonging to 22 species: *Callionymus pussillus*, *Uranoscopus scaber*, *Hippocampus hippocampus*, *Scophthalmus maximus*, *Platichthys flesus*, *Merlangius merlangus euxinus*, *Gobius niger*, *Neogobius melanostomus*, *Mullus barbatus*, *Trachinus draco*, *Scorphaena porcus*, *Solea vulgaris*, *Nerophis ophidion*, *Parablennius sanguinolentus*; *Mytilus galloprovincialis*, *Chamelea gallina*, *Scapharca inaequivalvis*, *Mya arenaria*, *Flexopecten glaber ponticus*; *Liocarcinus navigator*, *Liocarcinus holsatus* and *Asciidiella aspersa*;
- ◆ a total number of 25 turbot specimens were identified, having a total weight of 9.438 kg; The most significant catches of turbot 1-3 ind./day of fishing were observed in the area of Sf. Gheorghe - Gura Portita and 1-2 ind/day Tuzla - Mangalia sector;
- ◆ the average weight of by-catches of turbot, in 2020, ranged between 0.377 kg / day, with a maximum of 1,40 kg / day and a minimum of 0 kg / day. The percentage ratio of bycatch is 0.0219 %, as an average of the data per day of trawling, with a maximum daily quota of 0.111%;
- ◆ the average lengths of the turbot individuals, per months, ranged between 10.0 - 44.0 cm, with weights between 0.13 and 1.40 kg. Juvenile forms are predominant, the only mature specimen, weighing 1.40 kg and a length of 44.0 cm. The most significant percentage parts of the total abundance have two size groups, 37.5 - 44.0 cm (28.0%) and 34.0-37.0 cm (14.7%);
- ◆ the total weight of the Rapa catches was 770.189 kg. The average weight was 15.10 kg / haul, ranging from 0.0–107.291 kg / haul. The dominant group (70.59%) weighs 0.0-8.89 kg / trawl, followed by the weight group 10.0-19.99 kg / trawl (9.8%), while the low catches are 30.00 - 39.99 kg / trawl and 40.0 - 49.99 kg / trawl, were recorded with 1.96% each, of the total catch;
- ◆ the percentage ratio between by-catches of turbot had an average value of 0.0219 %, as an average of data per day of trawling, with a maximum daily quota of 0.111%.
- ◆ obligation for fishermen to write in the fishing logbook / board, if there are incidental by-catches of fishes, birds, mammals or reptiles occur;
- ◆ continued monitoring of catches to estimate the level of fishing and the impact of fishing activities on marine biological resources and marine ecosystems.

SECTION 1: BIOLOGICAL DATA

Text Box 1G: List of research surveys at sea

General comment: This box fulfils Chapter I of the Annex of the Implementing Decision (EU) 2019/909, on the list of mandatory surveys and thresholds, of the multiannual Union programme; and Article 2 and Article 7 paragraph (3) of the Decision (EU) 2016/1701 on the format of the WP. It is intended to specify which research surveys at sea set out in the multiannual Union programme will be carried out. Member States shall specify whether the research survey is included in Chapter I of the Annex of the implementing decision of the multiannual Union programme or whether it is an additional survey.

General comment: This box is applicable to the Annual Report. This box should provide complementary information on the performance of the surveys, the results and their main use.

1. Objectives of the survey

In 2020, at the Romanian Black Sea coastline, four priority surveys for turbot and sprat were held. Main objectives:

- * estimates of abundance (by number and biomass) of the main demersal and pelagic species of commercial interest distributed at a depth between 10 m and 100 m;
- * description of the demographic structure of commercial species, along with spatial distribution patterns;
- * detailed length distribution and biological sampling of the catch for each target species, recording length, weight, sex, and the collection of otoliths and gonads. For other species only length and length-weight sampling were performed;
- * Observation of the oceanographic conditions on the Bank. The collection of oceanographic data (temperature and salinity) was carried out mainly through the CTD profiling;
- * assessing the environmental impact of fishing.

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

The Romanian National Program for 2020 included four surveys (Fig. 1G.1):

- 2 bottom trawl surveys in the Black Sea (spring and autumn);
- 2 mid-water trawl surveys in the Black Sea (spring and autumn).

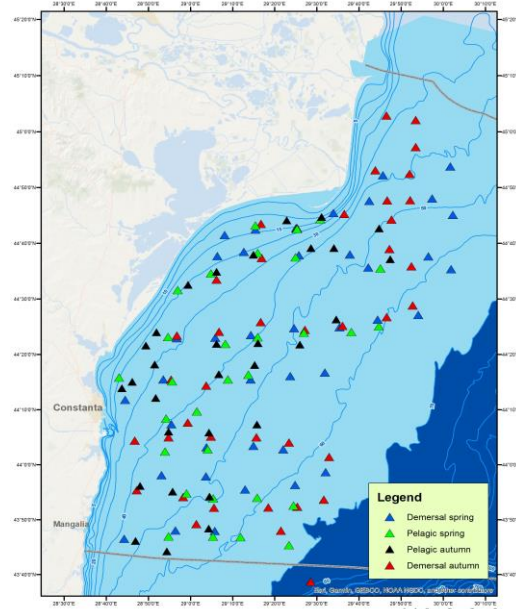


Fig. 1G.1 Planned distribution stations bottom /pelagic trawl, in spring / autumn season, in 2020

The methodology and techniques that were used for the collection, verification, processing and analysis of data and for the assessment of fish stocks are generally accepted for the Black Sea basin and in accordance with international methodology (http://www.rmri.ro/Home/Downloads/Publications/Other/NAFA_Material%20and%20methods%20for%20survey%20in%20the%20Romanian%20Black%20Sea%20area.pdf). For estimating the sprat crowd's biomass, the holistic method of probe trawling was used and the pelagic trawl was used for sampling. Stratified random sampling based on 60 minutes bottom trawl hauls during day light, getting abundance indices stratified by haul. Sampling for abundance indices covers

the depths between 10 and 75 m and is stratified random, the hauls are allocated in 3 strata determined by combining 3 depth strata (10-30 m, 31-50 m and 51-75m) and five geographical sectors. Haul's allocation is proportional to the area of each stratum.

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

The main obligations under the Collaboration Agreement concluded between NAFA Romania and NAFA Bulgaria on 25 March 2015 (Table 7C: Bi- and multilateral agreements):

a. *Surveys at sea: In the covered period (2015-2020), each country conducts annual research surveys in territorial waters and exclusive economic zones (EEZs) with demersal and pelagic trawl, using the common methodology adopted by the other EU Member States (MEDIAS and MEDITS);*

b. *The two Parties shall conduct pelagic and demersal expeditions in the territorial waters of the countries concerned and, in order to facilitate the harmonization of the methodologies used, shall ensure the presence of researchers/observers from the research institutes of the Parties on board of the Contracting Parties' research vessels, as appropriate.*

The National Institute for Marine Research and Development "Grigore Antipa" Constanta was responsible for carrying out expeditions in Romanian waters. The Bulgarian side sent observers who participated in the expeditions at sea.

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

Pursuant to the Collaboration Agreement concluded between NAFA Romania and NAFA Bulgaria on 25 March 2015 (Table 7C: Bi- and multilateral agreements), the parties are committed to providing financial resources for scientific surveys and work meetings. Each party will cover their own surveys costs for their own research vessels in national waters and the cost of the research team's participation on board the other vessels during surveys.

5. Explain where thresholds apply

No thresholds will be applied, as specified in Chapter V of Implementing Implementation (EU) 2019/910

6. Graphical representation (map) showing the positions (locations) of the realized samples.

SPRING SEASON

Bottom trawl surveys: in 2020, the calculated biomasses for the main demersal fish species at the Romanian coast were: turbot (3,240.57 t t/ Fig. 1G.2, 1G3, 1G4, 1G5, 1G6, 1G7, 1G8 and 1G9); picked dogfish (3,907.13 t/ Fig. 1G.10, 1G11, 1G12 and 1G13) and whiting (4,985.4 t / Fig. 1G14). In 2020, mainly, the biomass of turbot agglomerations was higher by 17.91% and of picked dogfish agglomerations by 46.06%, compared to the previous year. For whiting biomass, the value was close to previous years.

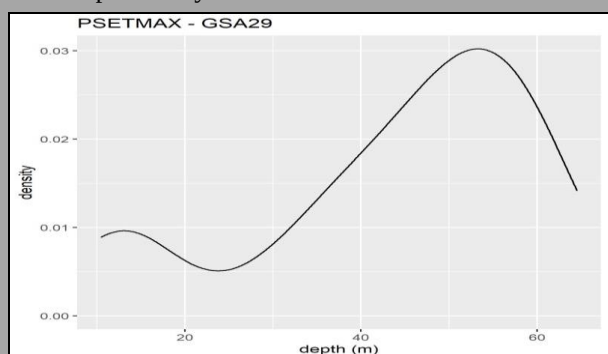


Fig. 1G.2 Density of turbot specimens as a function of depth (m), in spring season, in 2020

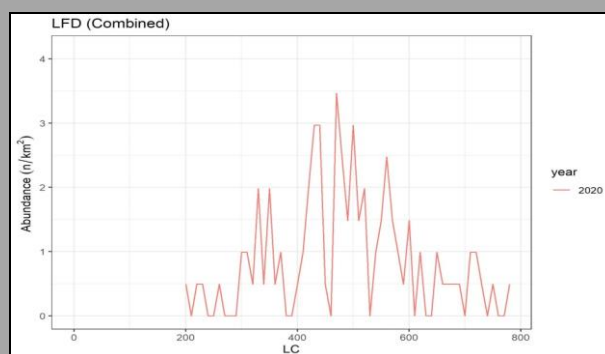
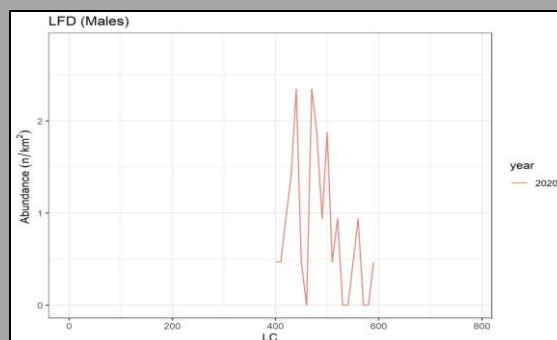
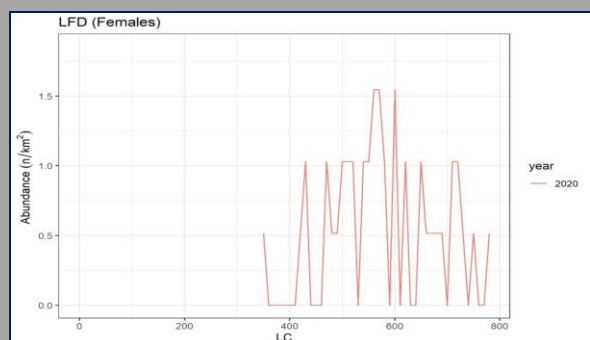


Fig. 1G.3 Length frequency distribution of combined turbot in spring season, in 2020



a.

b.

Fig. 1G.4 Length frequency distribution of female's (a) and male's (b) turbot, in spring season, in 2020

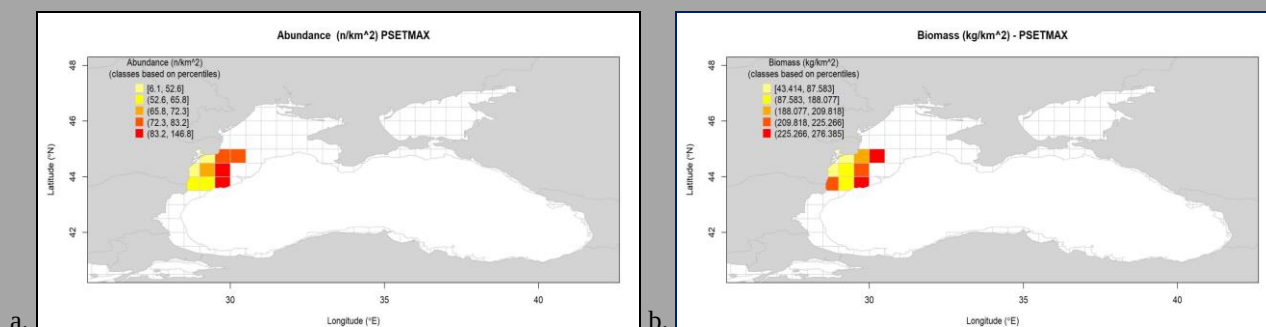


Fig. 1G.5 Spatial distribution of abundance (a; n/Km^2) and biomass (b; kg/Km^2) indices in the turbot, in spring season in 2020

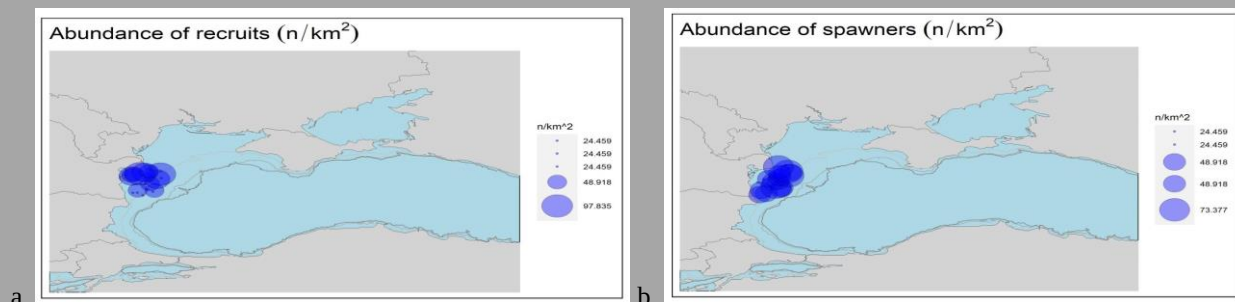


Fig. 1G.6 Abundance of recruits (a; n/Km^2) and spawners (b; n/Km^2), in spring season in 2020

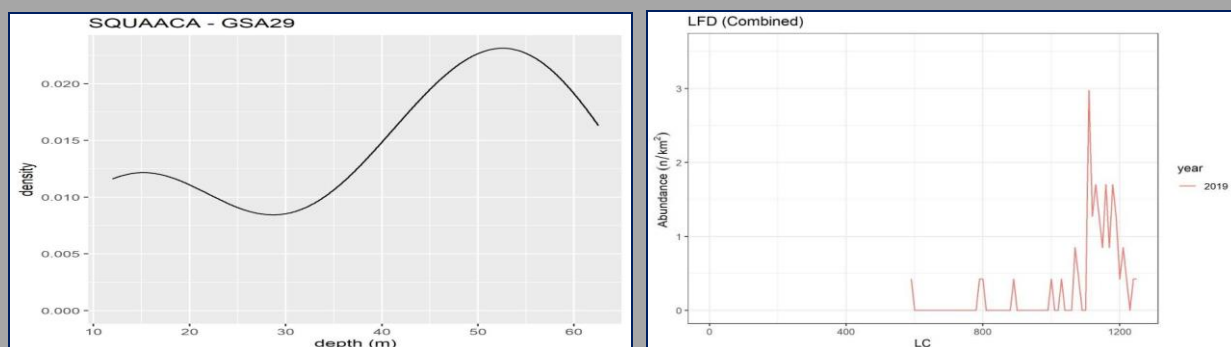


Fig. 1G.7 Density of picked dogfish specimens as a function of depth (m), in spring season, in 2020

Fig. 1G.8 Length frequency distribution of combined picked dogfish, in spring season, in 2020

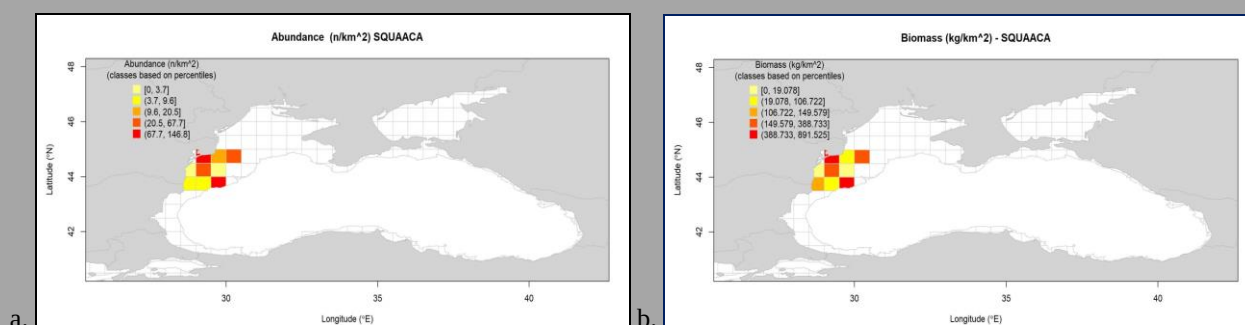


Fig. 1G.9 Spatial distribution of abundance (a) and biomass (b) indices in the picked dogfish species, in spring season 2020

Pelagic trawl surveys: in 2020, the calculated biomasses for the main demersal fish species at the Romanian coast were: sprat (58,559.64 t / Fig. 1G.14), whiting (9,893.14 t / Fig. 1G.15) and jellyfish (10,199.87 t / Fig. 1G.16). In the spring season of 2020, agglomerations biomass of sprat was lower by about 47.56% compared with the previous year. Due to the very small catches and the small number of specimens of picked dogfish caught, both in the spring season, the evaluation of the species in pelagic trawls was not performed.

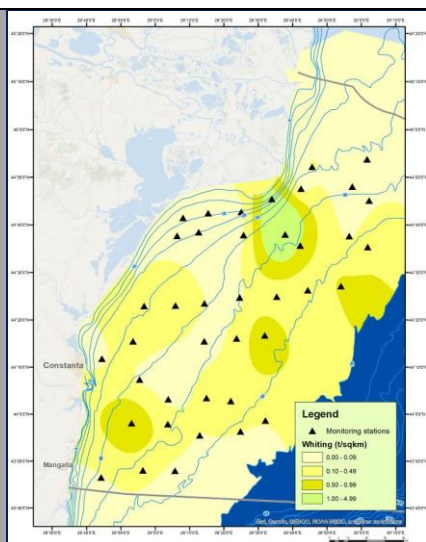


Fig. 1G.10 Distribution of whiting agglomerations in the spring, demersal trawl survey, in 2020

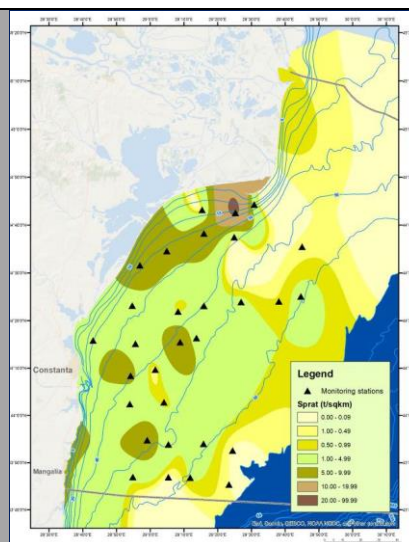
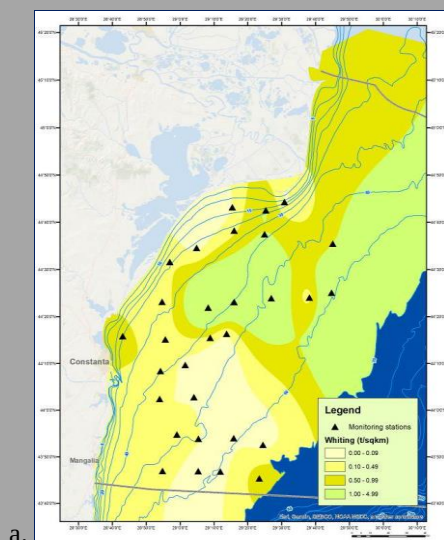
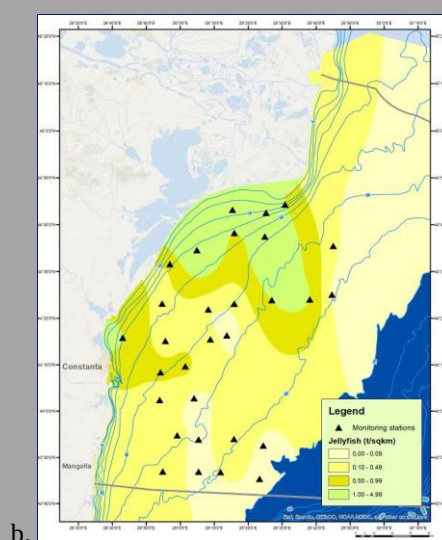


Fig. 1G.11 Distribution of sprat agglomerations in the spring season, pelagic trawl survey, in 2020



a.



b.

Fig. 1G.12 Distribution of whiting (a) and jellyfish (b) agglomerations in the spring, pelagic trawl survey, in 2020

AUTUMN SEASON

Bottom trawl surveys: in 2020, the calculated biomasses for the main demersal fish species at the Romanian coast were: turbot (3,588.42 t / Fig. 1G.13, 1G.14, 1G.15, 1G.16 and 1G.17) and whiting (10,714.21 t / Fig. 1G.18a). The biomass of turbot agglomerations was higher by 44.38% and of whiting agglomerations by 69.83 %, compared to the previous year. For whiting biomass, the value was close to previous years.

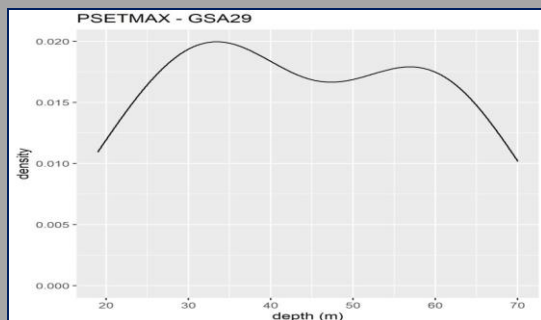


Fig. 1G.13 Density of turbot specimens as a function of depth (m), in autumn season, in 2020

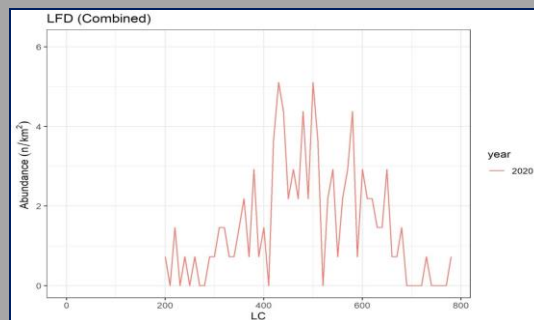


Fig. 1G.14 Length frequency distribution of combined turbot in autumn season, in 2020

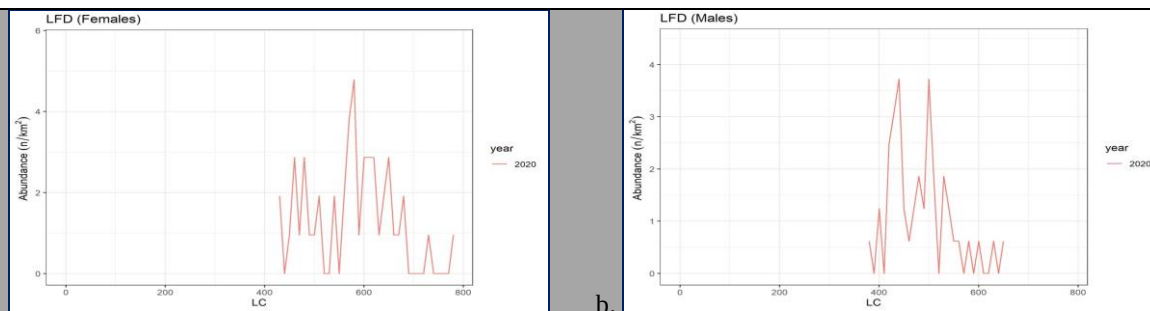


Fig. 1G.15 Length frequency distribution of female's (a) and male's (b) turbot in autumn season, in 2020

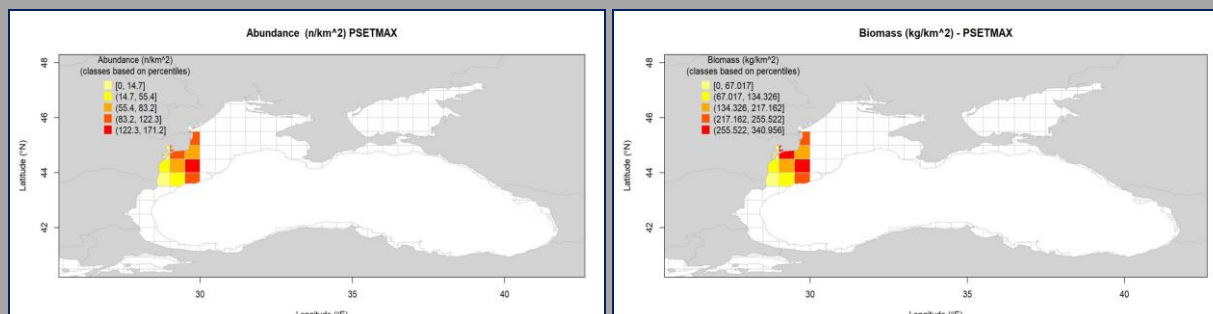


Fig. 1G.16 Spatial distribution of abundance (a) and biomass (b) indices in the turbot species, in autumn season 2020

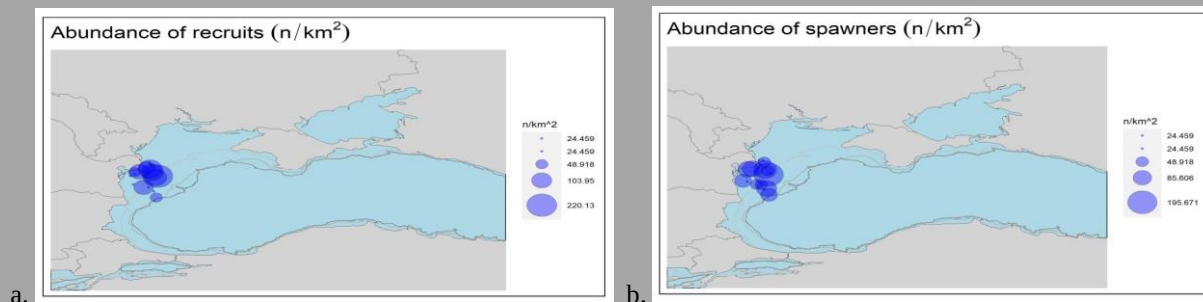


Fig. 1G.17 Abundance of recruits (a; n/Km^2) and spawners (b; n/Km^2), in autumn season in 2020

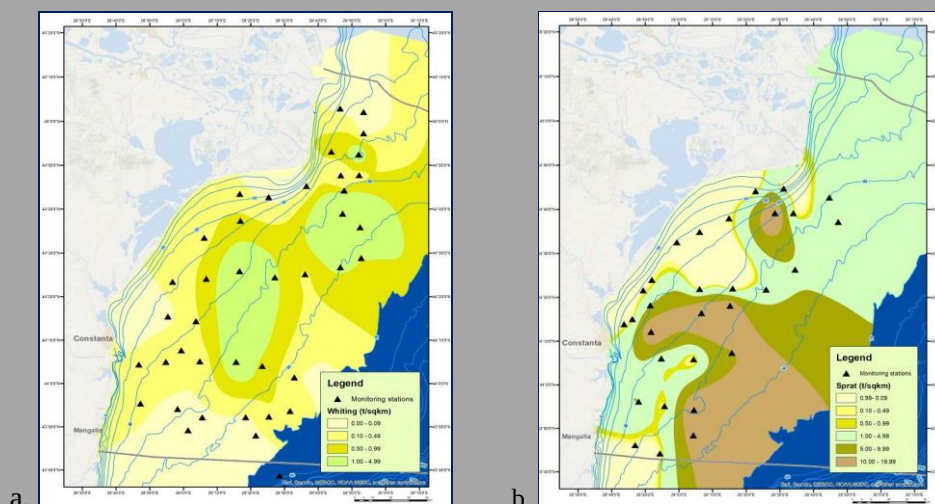


Fig. 1G.18 Distribution of whiting (a) agglomerations in the autumn season, demersal trawl survey and sprat (b) agglomerations in the autumn season, pelagic trawl survey, in 2020

Pelagic trawl surveys: in 2020, the calculated biomasses for the main pelagic fish species at the Romanian coast were: sprat (92,398.55 t / Fig. 1G.18b), whiting (3,765.59 t / Fig. 1G.19a) and jellyfish (54,838.30 t / Fig. 19b). In the autumn season of 2020, agglomerations biomass of sprat was lower by about 29.57 % compared with the previous year. Due to the very small catches and the small number of specimens of picked dogfish caught, both in the autumn season, the evaluation of the species in pelagic trawls was not performed.

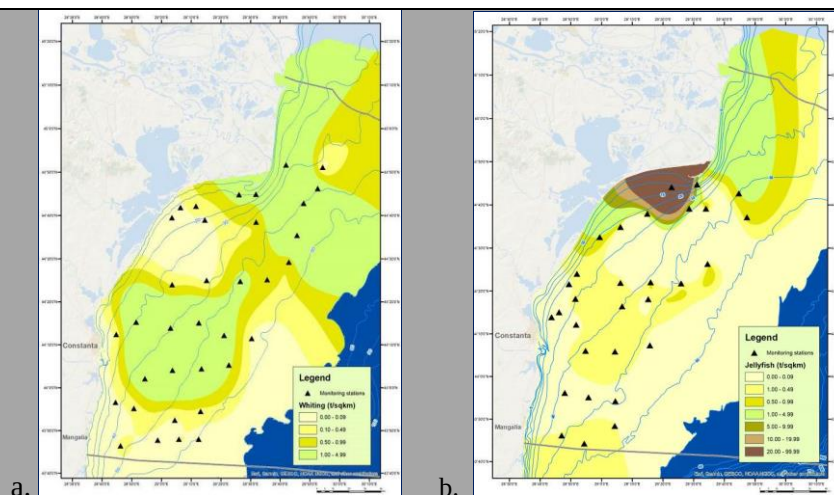


Fig. 1G.19 Distribution of whiting (a) and jellyfish (b) agglomerations in the autumn season, pelagic trawl survey, in 2020

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

The surveys with Romanian demersal and pelagic trawls are coordinated with Bulgaria. Romanian representatives attended, were represented at the MEDIAS: <http://www.medias-project.eu/medias/website/> meeting; DG-Mare – JRC (<https://datacollection.jrc.ec.europa.eu/dcf>) and GFCM.

8. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators).

SPRING SEASON

Demersal Survey

Assessment of turbot agglomerations in spring season, demersal trawl survey, in Romanian area.
turbot / May 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	1990	4350	6450	12790
Variation of the catches (t/Km ²)	0.040–0.173	0.036–0.489	0.020–0.379	0.020–0.489
Average catch (t/ Km ²)	0.069	0.151	0.215	0.145
Biomass of the fishing agglomerations (t)	169.99	749.63	1594.91	2514.53
Biomass extrapolated the Romanian shelf (t)				3,240.57

Biomass (tons) and abundance (thousands of individuals) of turbot

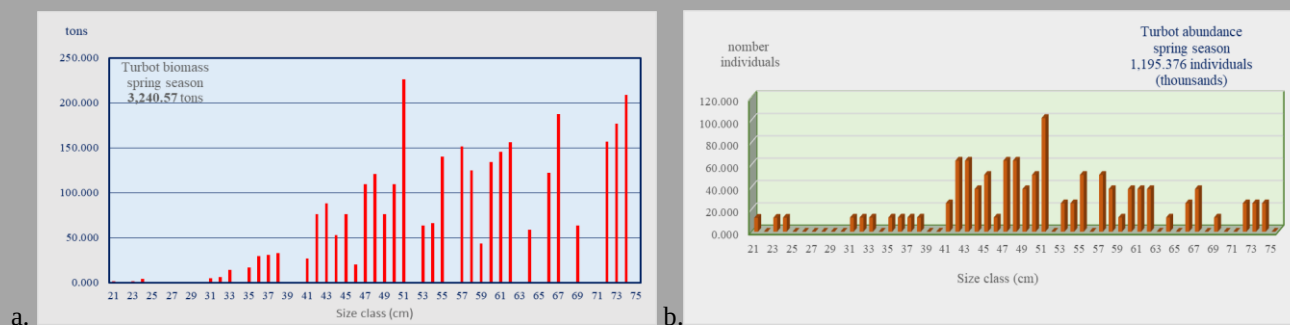


Fig. 1G.20 Structure by lengths of biomass (a) and abundance (b) of turbot during spring survey

Structure of biomass and abundance by age distribution

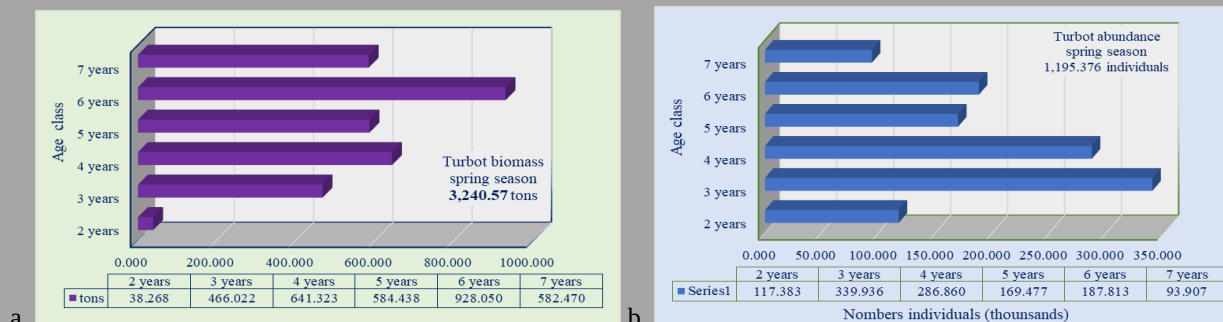
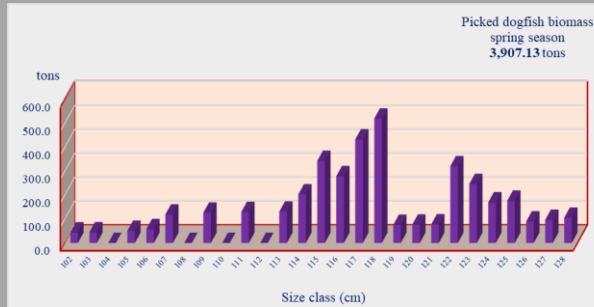


Fig. 1G.21 Structure by ages of biomass (a) and abundance (b) of turbot during spring survey

Assessment of piked dogfish agglomerations in the demersal trawl expedition, in the spring season of 2020
Picked dogfish / May 2020

Depth range (m)	0–30 m	30–50 m	50-70 m	Total
Investigated area (Km ²)	1990	4350	6450	12790
Variation of the catches (t/Km ²)	0.00 – 0.993	0.00-0.536	0.00-0.891	0.00-0.993
Average catch (t/ Km ²)	0.431	0.112	0.152	0.232
Biomass of the fishing agglomerations (t)	1058.29	557.14	1132.10	2743.53
Biomass extrapolated the Romanian shelf (t)				3,907.13

Biomass (tons) and abundance (thousands of individuals) of picked dogfish



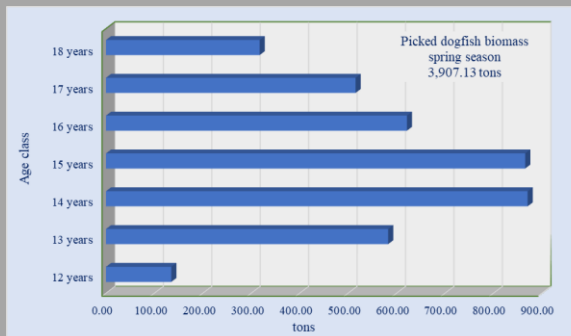
a.



b.

Fig. 1G.22 Structure by lengths of biomass (a) and abundance (b) of picked dogfish during spring demersal survey

Structure of biomass and abundance by age distribution



a.



b.

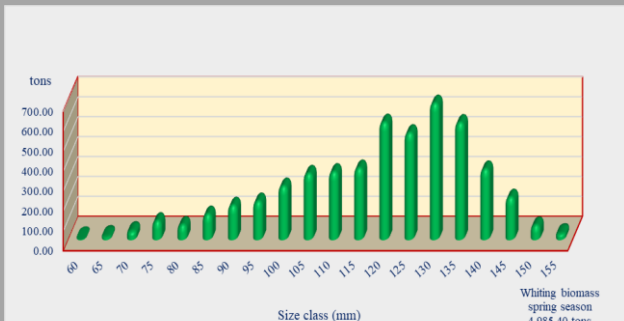
Fig. 1G.23 Structure by ages of biomass (a) and abundance (b) of picked dogfish during spring survey

Evaluation of whiting agglomerations in the demersal trawl expedition, in the spring season of 2020

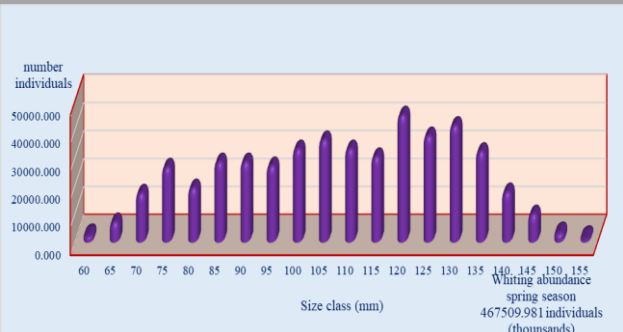
Whiting / May 2020

Depth range (m)	0–30 m	30–50 m	50-70 m	Total
Investigated area (Km ²)	1990	4350	6450	12790
Variation of the catches (t/Km ²)	0.010-1.190	0.012-2.054	0.068-0.909	0.010-2.054
Average catch (t/ Km ²)	0.191	0.263	0.271	0.242
Biomass of the fishing agglomerations (t)	470.07	1298.71	2009.01	3777.79
Biomass extrapolated the Romanian shelf (t)				4,985.40

Biomass (tons) and abundance (thousands of individuals) of whiting



a.



b.

Fig. 1G.24 Structure by lengths of biomass (a) and abundance (b) of whiting during spring demersal survey

Structure of biomass and abundance by age distribution

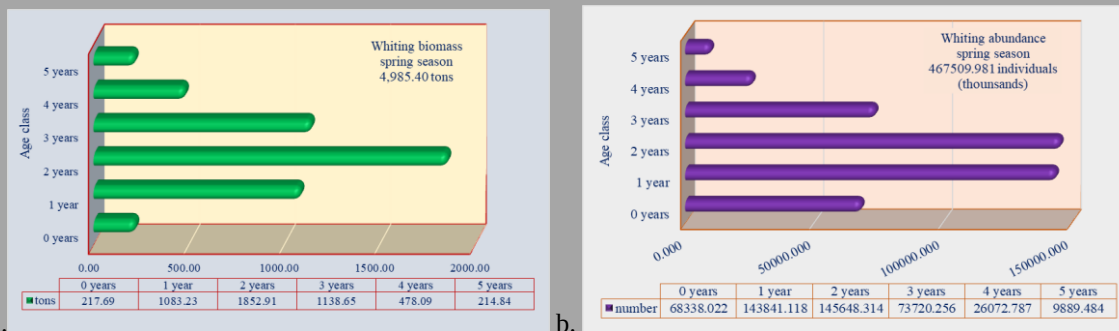


Fig. 1G.25 Structure by ages of biomass (a) and abundance (b) of whiting during spring demersal survey

Pelagic survey

Evaluation of sprat agglomerations in the pelagic trawl expedition, in the spring season of 2020

Sprat / June 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2.020	3.560	5.454	11.034
Variation of the catches (t/Km ²)	0.839-6.395	0.239-8.713	0.099-6.235	0.099-8.713
Average catch (t/ Km ²)	3.515	4.256	1.764	3.178
Biomass of the fishing agglomerations (t)	8622.92	20999.52	13074.57	42697.01
Biomass extrapolated the Romanian shelf (t)				58,559.64

Biomass (tons) and abundance (thousands of individuals) of sprat

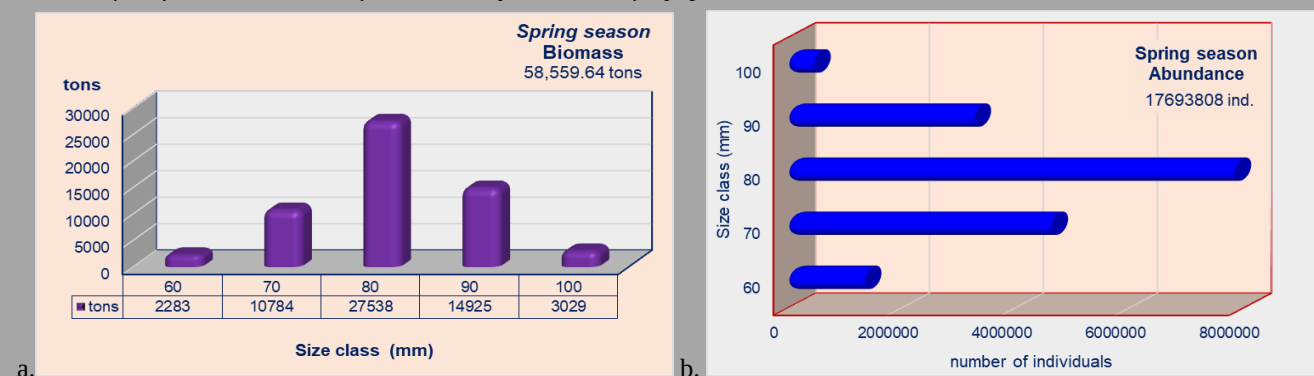


Fig. 1G.26 Structure by lengths of biomass (a) and abundance (b) of sprat during spring pelagic survey

Structure of biomass and abundance by age distribution

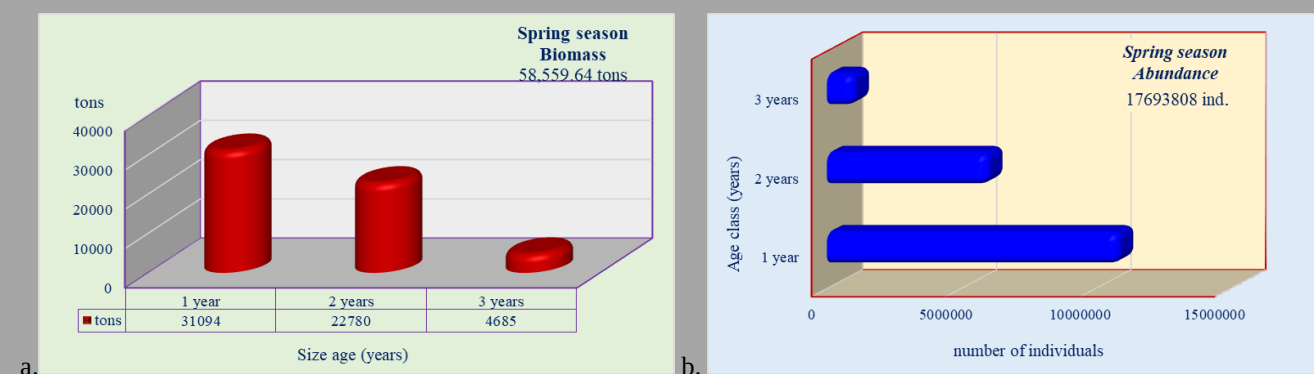


Fig. 1G.27 Structure by ages of biomass (a) and abundance (b) of sprat during spring survey

Evaluation of whiting agglomerations in the pelagic trawl expedition, in the spring season of 2020

Whiting / June 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2.020	3.560	5.454	11.034
Variation of the catches (t/Km ²)	0.139-2.398	0.019-2.398	0.019-0.999	0.00-3.847
Average catch (t/ Km ²)	0.892	0.443	0.362	0.940
Biomass of the fishing agglomerations (t)	2189.78	2190.09	2686.84	7066.71
Biomass extrapolated the Romanian shelf (t)				9,893.14

Biomass (tons) and abundance (thousands of individuals) of whiting

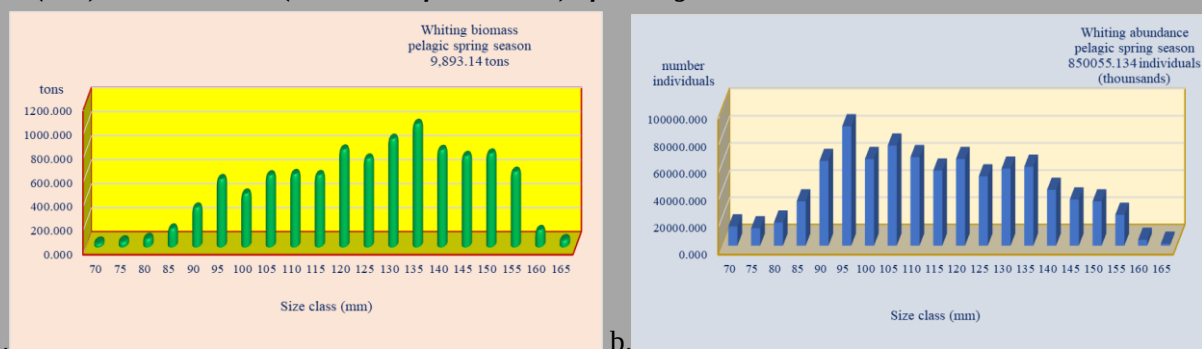


Fig. 1G.28 Structure by lengths of biomass (a) and abundance (b) of whiting during spring pelagic survey

Structure of biomass and abundance by age distribution

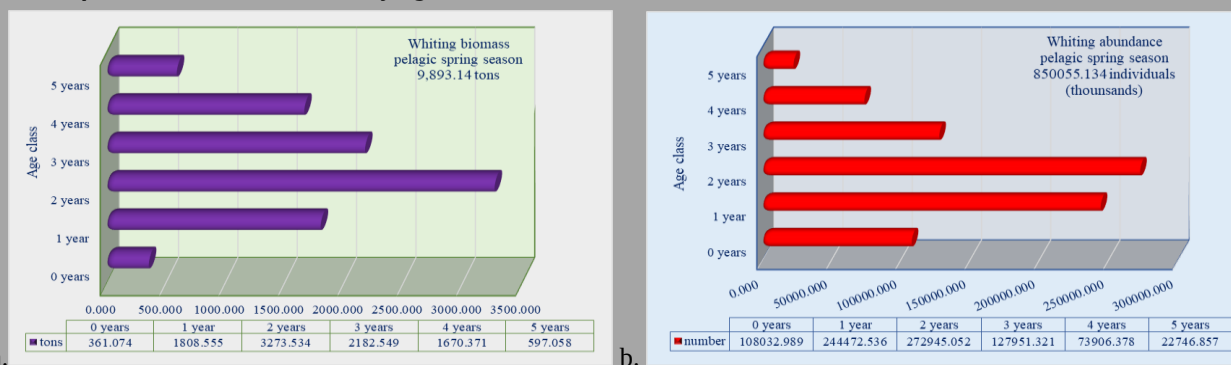


Fig. 1G.29 Structure by ages of biomass (a) and abundance (b) of whiting during spring survey

Evaluation of jellyfish agglomerations in the pelagic trawl expedition, in the spring season of 2020

Jellyfish / June 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2.020	3.560	5.454	11.034
Variation of the catches (t/Km ²)	0.139–1.998	0.199–3.997	0.099–0.599	0.099–3.997
Average catch (t/ Km ²)	0.541	0.913	0.214	0.556
Biomass of the fishing agglomerations (t)	1329.12	4506.93	1586.71	7422.76
Biomass extrapolated the Romanian shelf (t)				10, 199.87

AUTUMN SEASON

Demersal survey

Evaluation of turbot agglomerations in the demersal trawl expedition, in the autumn season of 2020

Turbot / November 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2560	4280	5990	12830
Variation of the catches (t/Km ²)	0,003–0.519	0.151–0.420	0.097–0.864	0.003–0.864
Average catch (t/ Km ²)	0.213	0.130	0.204	0.182
Biomass of the fishing agglomerations (t)	523.38	641.75	1512.20	2677.33
Biomass extrapolated the Romanian shelf (t)				3,588.42

Biomass (tons) and abundance (thousands of individuals) of turbot

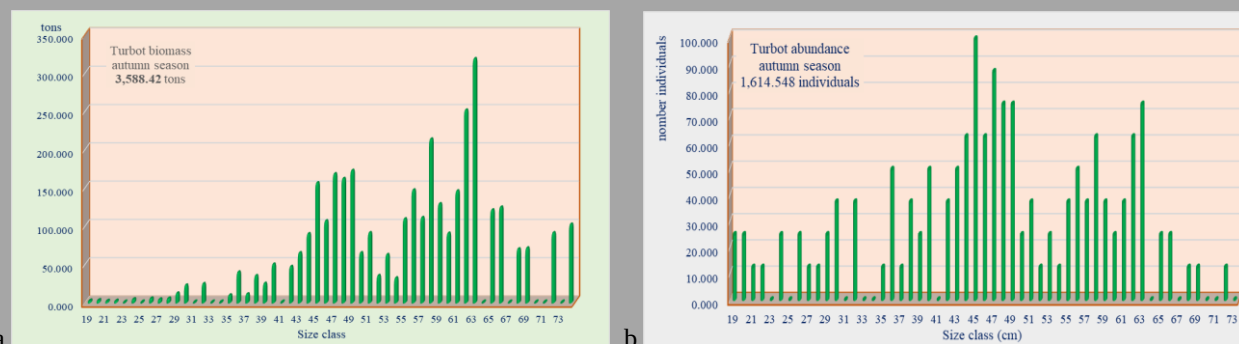


Fig. 1G.30 Structure by lengths of biomass (a) and abundance (b) of turbot during autumn survey

Structure of biomass and abundance by age distribution

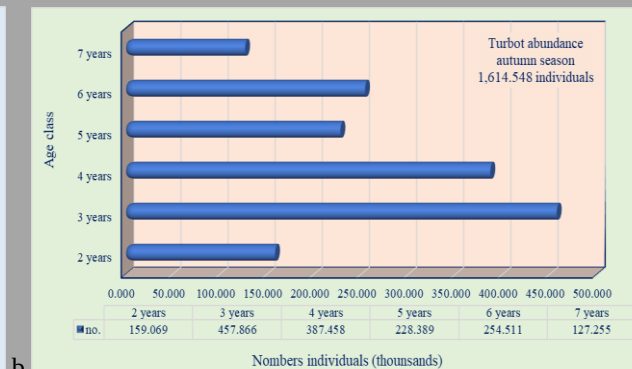
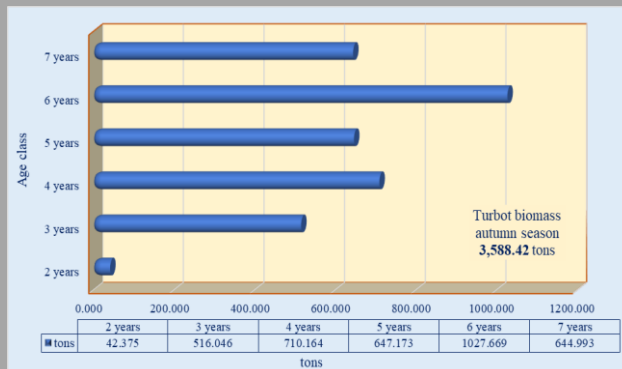


Fig. 1G.31 Structure by ages of biomass (a) and abundance (b) of turbot during autumn survey

Evaluation of whiting agglomerations in the demersal trawl expedition, in the autumn season of 2020

Whiting / November 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2560	4280	5990	12830
Variation of the catches (t/Km ²)	0.062-0.643	0.01-1.556	0.003-3.113	0.003-3.113
Average catch (t/ Km ²)	0.219	0.379	0.805	0.468
Biomass of the fishing agglomerations (t)	538.19	1869.96	5970.40	8378.55
Biomass extrapolated the Romanian shelf (t)				10,714.21

Biomass (tons) and abundance (thousands of individuals) of whiting

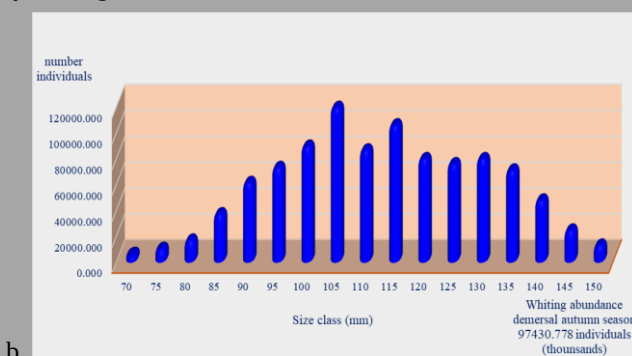
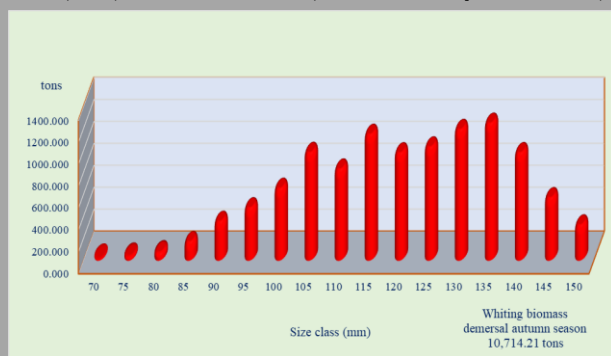


Fig. 1G.32 Structure by lengths of biomass (a) and abundance (b) of whiting during autumn survey

Structure of biomass and abundance by age distribution

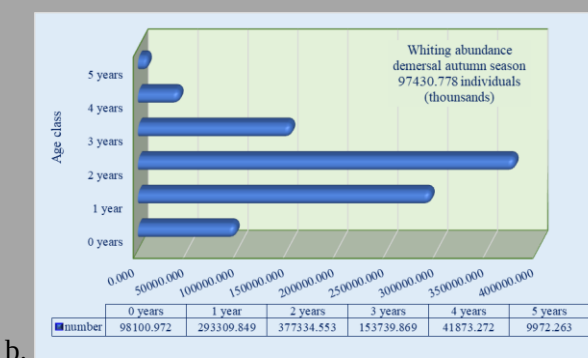
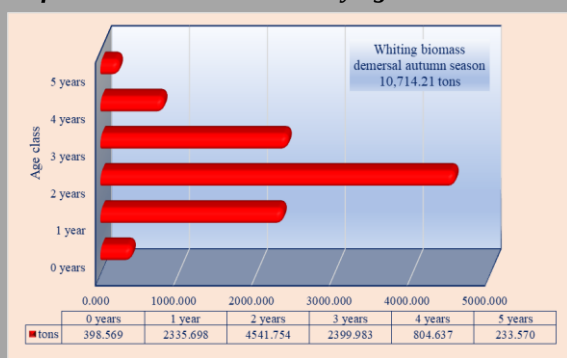


Fig. 1G.33 Structure by ages of biomass (a) and abundance (b) of whiting during autumn survey

Pelagic survey

Evaluation of sprat agglomerations in the pelagic trawl expedition, in the spring season of 2020

Sprat / October 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2.030	3.350	5.900	11.280
Variation of the catches (t/Km ²)	0.000	0.199-14.289	0.079-15.988	0.00-15.988
Average catch (t/ Km ²)	0.000	6.252	5.638	3.963
Biomass of the fishing agglomerations (t)	0.000	30842.02	41778.90	72620.92
Biomass extrapolated the Romanian shelf (t)				92,398.55

Biomass (tons) and abundance (thousands of individuals) of sprat

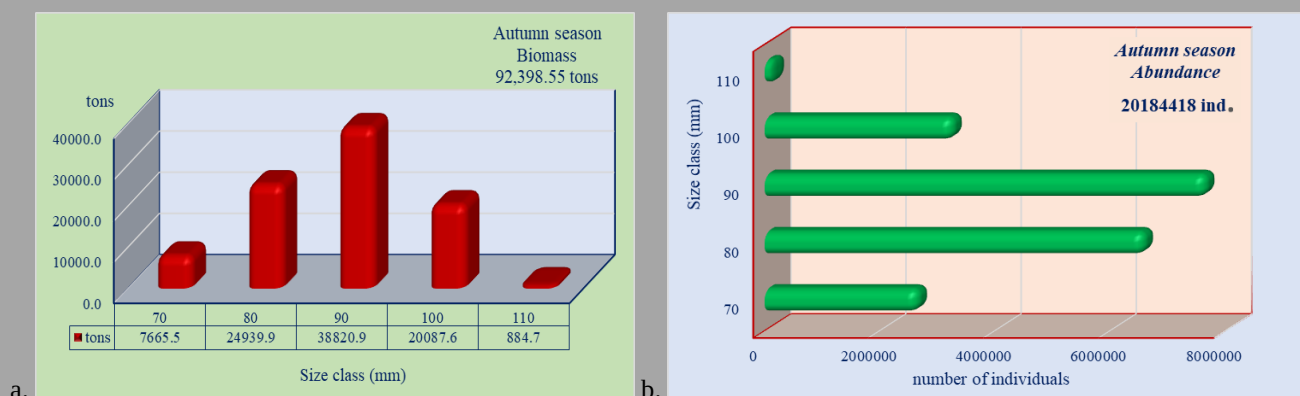


Fig. 1G.34 Structure by lengths of biomass (a) and abundance (b) of sprat during autumn pelagic survey

Structure of biomass and abundance by age distribution

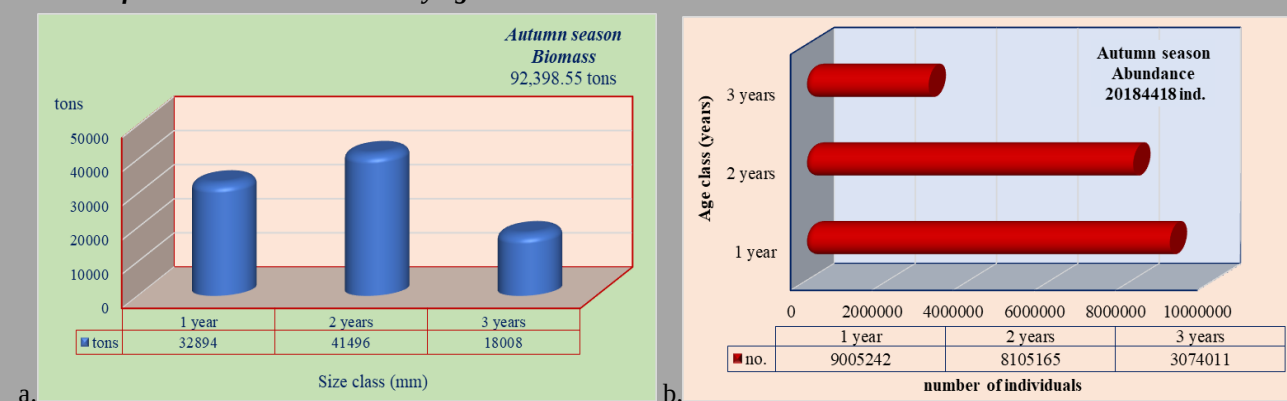


Fig. 1G.35 Structure by ages of biomass (a) and abundance (b) of turbot during autumn pelagic survey

Evaluation of whiting agglomerations in the pelagic trawl expedition, in the autumn season of 2020

Whiting / October 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2030	3350	5900	11280
Variation of the catches (t/Km ²)	0.00	0.019-0.499	0.099-0.599	0.00-0.599
Average catch (t/ Km ²)	0.00	0.143	0.310	0.151
Biomass of the fishing agglomerations (t)	0.00	706.55	2303.68	3010.23
Biomass extrapolated the Romanian shelf (t)				3,765.59

Biomass (tons) and abundance (thousands of individuals) of whiting

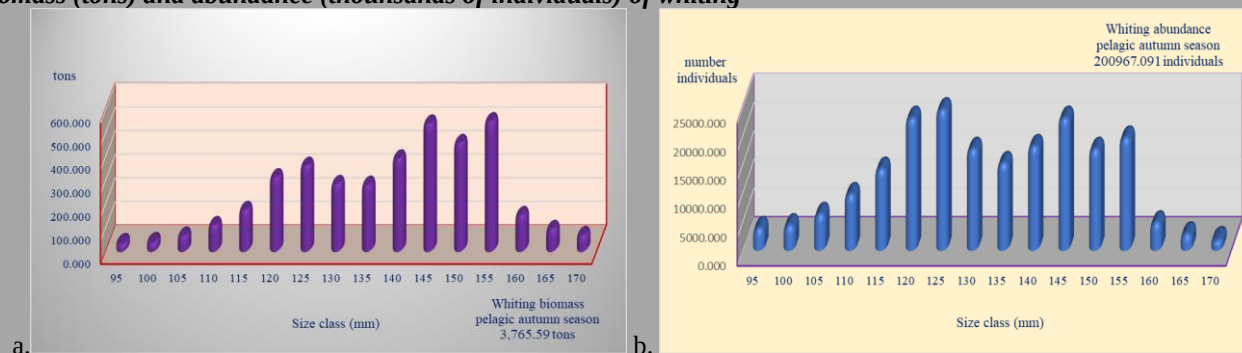


Fig. 1G.36 Structure by lengths of biomass (a) and abundance (b) of whiting during autumn pelagic survey

Evaluation of jellyfish agglomerations in the pelagic trawl expedition, in the autumn season of 2020

Jellyfish / October 2020

Depth range (m)	0–30 m	30–50 m	50–70 m	Total
Investigated area (Km ²)	2030	3350	5900	11280
Variation of the catches (t/Km ²)	0.300-99.928	0.199-1.398	0.099-0.999	0.099-99.928
Average catch (t/ Km ²)	12.235	0.311	0.266	4.270
Biomass of the fishing agglomerations (t)	30014.10	1536.35	1974.58	33525.04
Biomass extrapolated the Romanian shelf (t)				54,838.30

Structure of biomass and abundance by age distribution

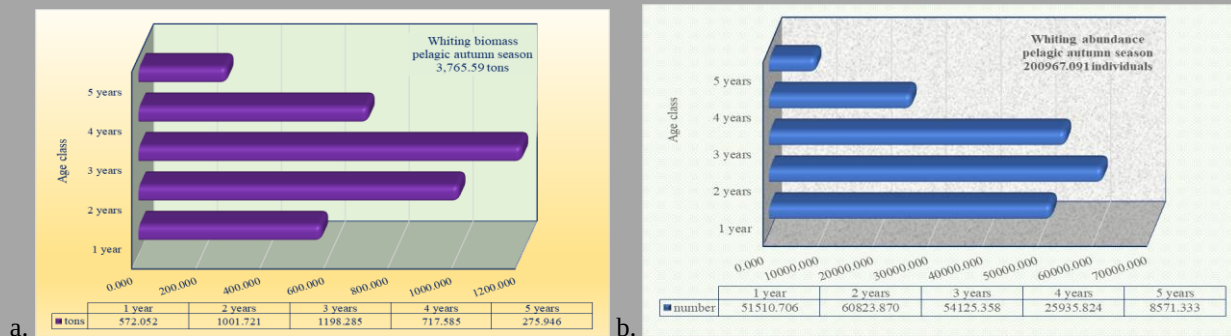
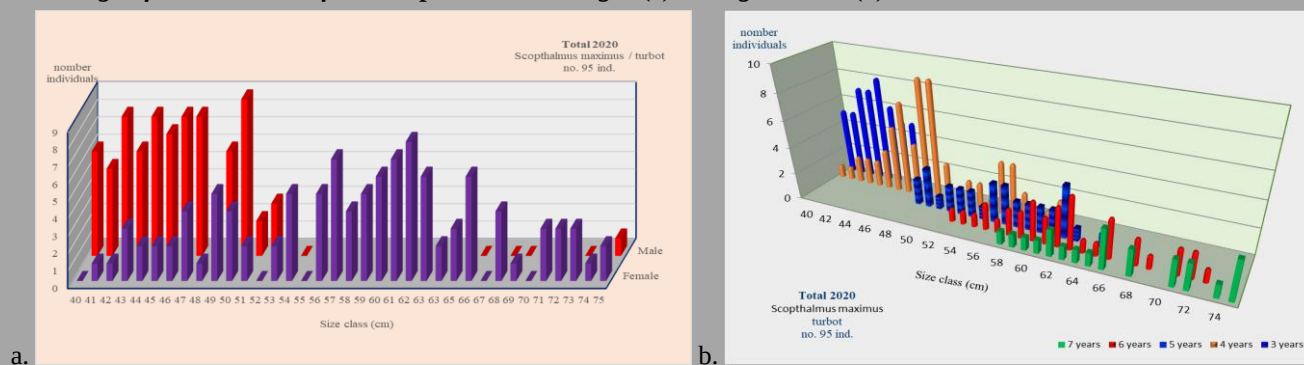


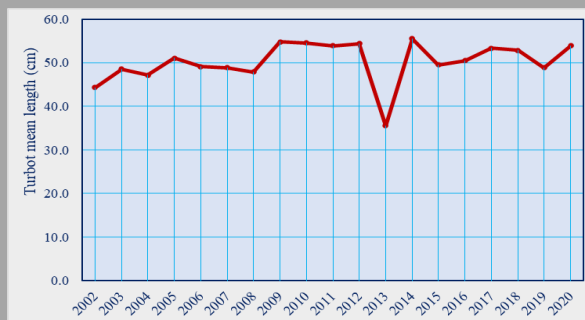
Fig. 1G.35 Structure by ages of biomass (a) and abundance (b) of whiting during autumn pelagic survey

Environmental indicators

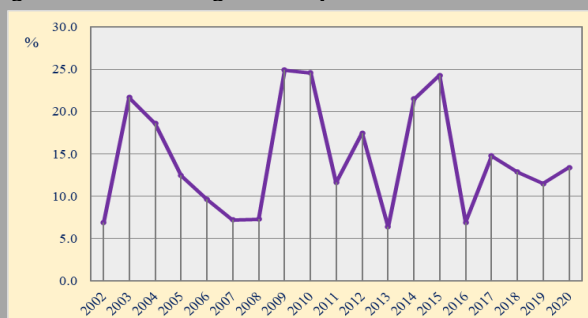
Percentage of total number of turbot specimens on length (a) and age classes (b)



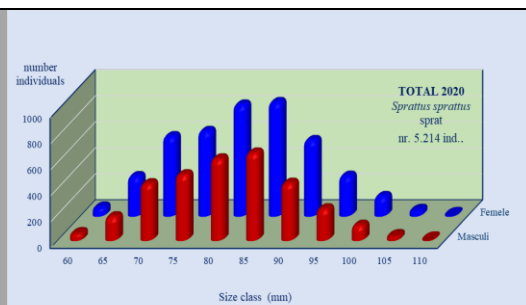
The average length of turbot in the period 2002 – 2020



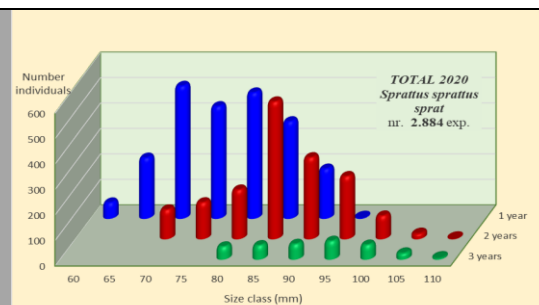
Percentage of sprat specimens larger than the average size at first sexual maturation 2000-2020



Percentage of total number of sprat specimens on length (a) and age classes (b)

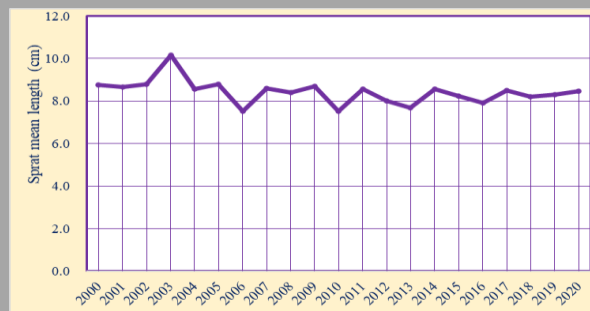


a.

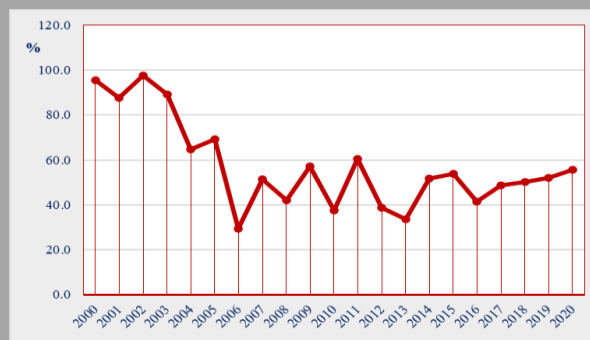


b.

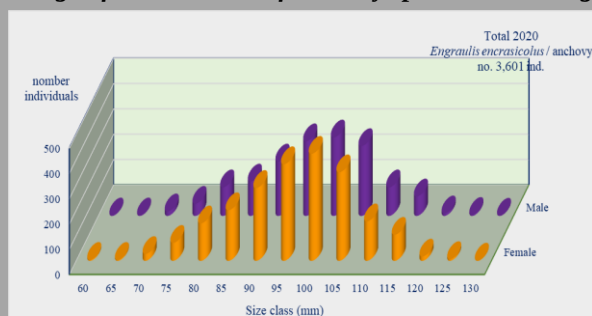
The average length of sprat in the period 2001 – 2020



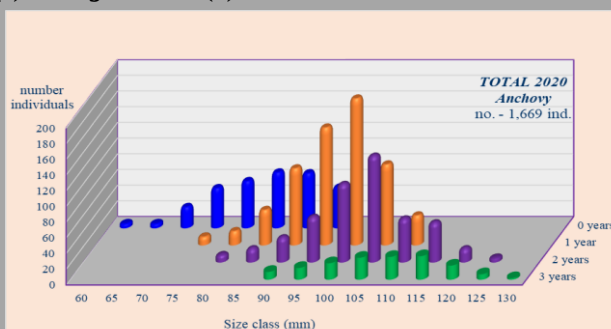
Percentage of sprat specimens larger than the average size at first sexual maturation 2000-2020



Percentage of total number of anchovy specimens on length (a) and age classes (b)

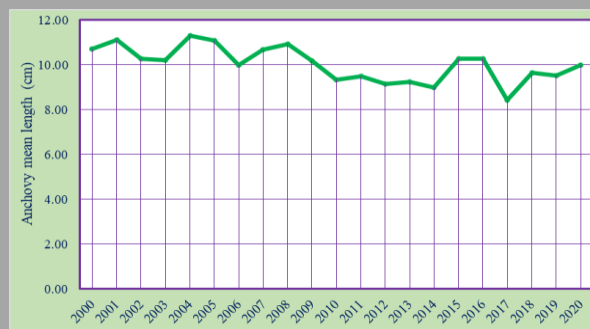


a.

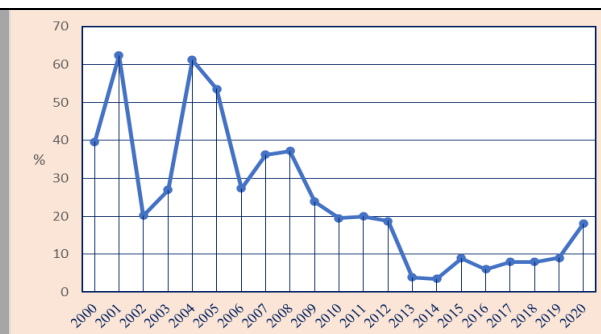


b.

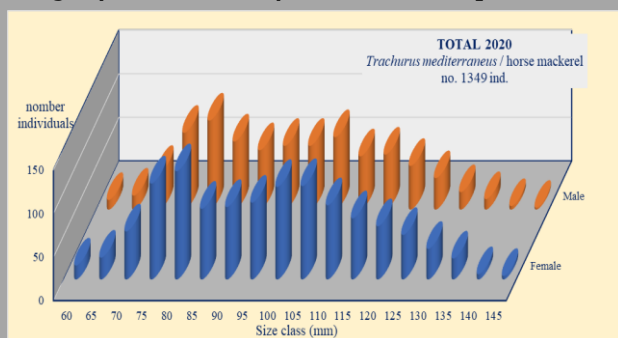
The average length of anchovy in the period 20020 – 2020



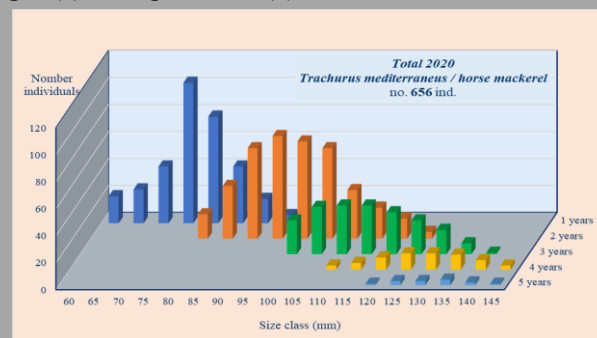
Percentage of anchovy specimens larger than the average size at first sexual maturation 2000-2020



Percentage of total number of horse mackerel specimens on length (a) and age classes (b)

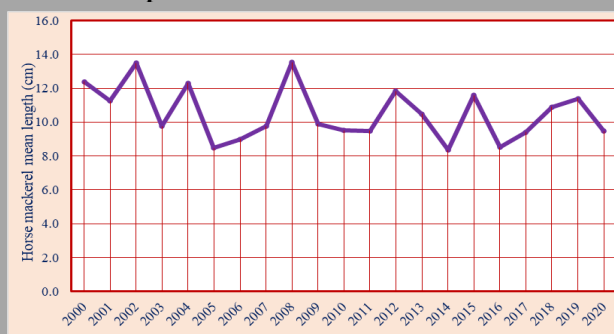


a.

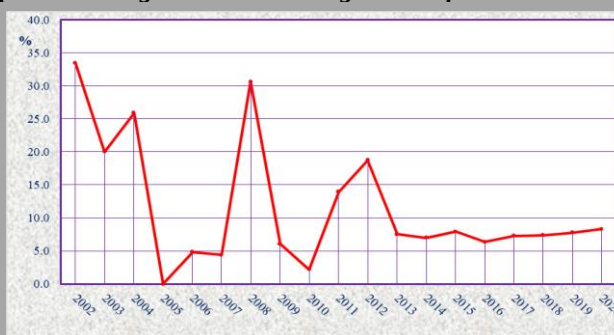


b.

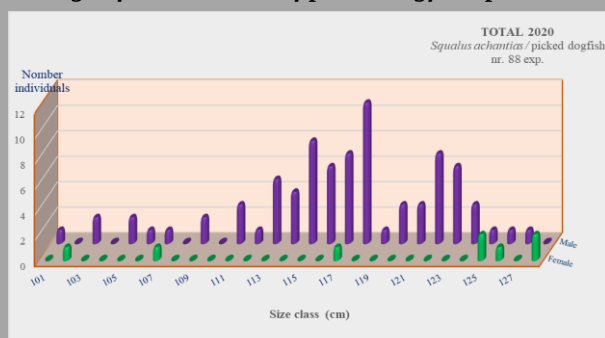
The average length of horse mackerel in the period 2000 – 2020



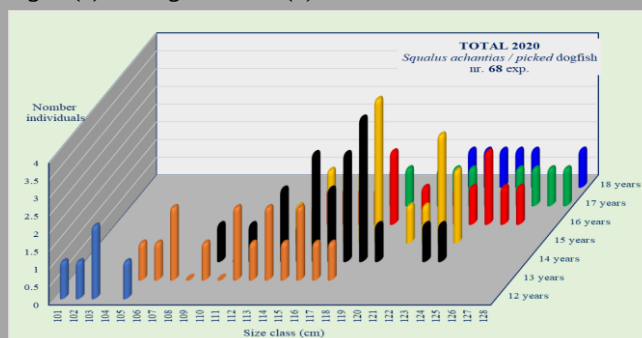
Percentage of horse mackerel specimens larger than the average size at first sexual maturation 2002-2020



Percentage of total number of picked dogfish specimens on length (a) and age classes (b)

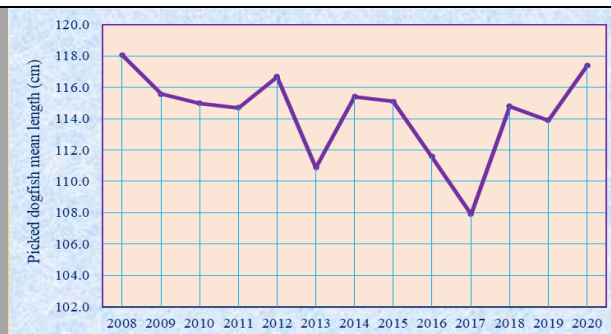


a.

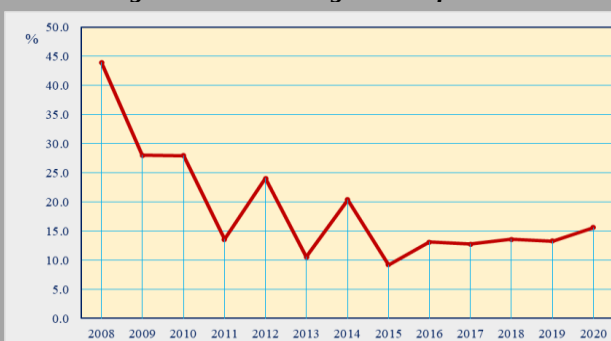


b.

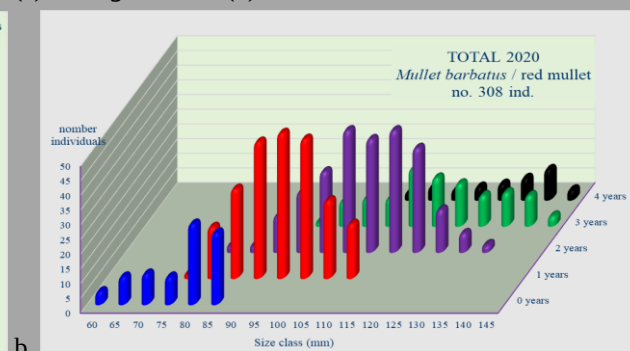
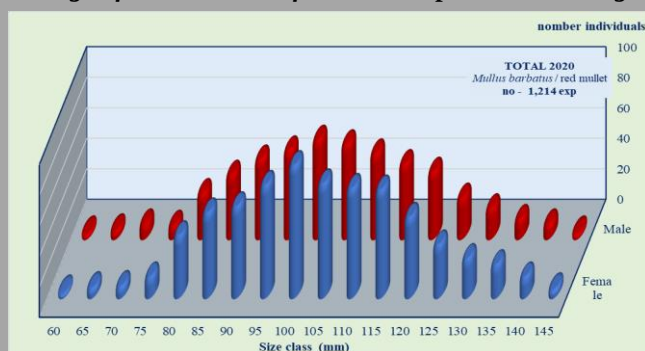
The average length of picked dogfish in the period 2008 – 2020



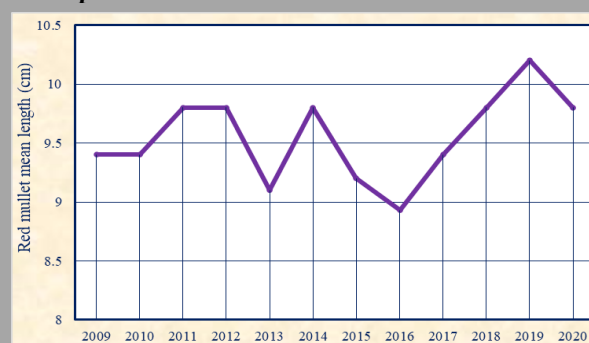
Percentage of picked dogfish specimens larger than the average size at first sexual maturation 2000-2020



Percentage of total number of red mullet specimens on length (a) and age classes (b)



The average length of red mullet in the period 2009 – 2020



Percentage of red mullet specimens larger than the average size at first sexual maturation 2013 - 2020



9. Extended comments (Tables 1G and 1H)

If the Member State has extended AR Comments, these can be placed under this section. If this is the case, a reference to this text box should be provided in the corresponding tables.

During the surveys at sea and at the fishing points along the Romanian Black Sea coast, in accordance with the activities provided in the National Program, information on incidental by-catch of birds, mammals, reptiles and fish were collected. Species striped red mullet / *Mullus surmuletus*, not present in Romanian area. Also, data on the presence of mammals in the area of the stationary and the active fishing gears and the presence of marine litter, both on land and at sea, were collected. All the collected data have been reported to the international bodies to which Romania has adhered or participated as a partner in the ongoing international projects. Thus, mammalian data were reported annually to ACCOBAMS (<http://www.accobams.org/>) and data on marine litter were uploaded to the EMOD-NET platform (<https://www.emodnet-chemistry.eu/>).

SECTION 2: FISHING ACTIVITY DATA

Text Box 2A: Fishing activity variables data collection strategy

General comment: This box fulfils paragraph 4 of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2, Article 4 paragraph (2) point (b) and Article 5 paragraph (2) of the Implementing Decision (EU) 2016/1701 on the format of the WP. 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.

General comment: This box is applicable to the Annual Report. This box should provide information on the implementation of the data collection of fishing activity variables of Member States.

All variables that were collected for this section can be found in Table 4 of the EU Multiannual Program and their reporting was made in accordance with the level of requirements set out in Tables 2A, 5B and 5C.

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

The verification of capacity and effort accuracy was facilitated by the possibility of cross-validation of capacity and effort data that are recorded in the fishing log, fleet register, license, VMS, with the questionnaire completed by each economic agent in accordance with the provisions of the source and the results of the activities carried out. Verification of the accuracy of data on landing situations was favoured by the possibility of validating the data sheets with sales notes and shipping notes. The cross-validation of the different data sources is carried out in a first stage by NAFA and subsequently by NIMRD, as NIMRD proceeds to the data centralization and processing step by group of variables and variables.

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

Data corresponding to the landing variable (total landings by species, total landings by species and prices of each species) were obtained by the exhaustive method, which provides coverage of 100% of the population and maximum quality. The collection of data was done monthly from all economic agents, from the following sources: fishing logs, sales notes and transport completed by each economic agent. All these data have been checked by NAFA's fishing inspectors and later transmitted to NIMRD, where, after a preliminary re-verification, the grouping of each variable of the fishing techniques has been transferred to the data processing step by group of variables and variables, namely mentioning vessel type on length classes and metiers.

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

The average price estimate for each commercial species was based on the 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)

Data corresponding to the capacity, effort, landing value and price per species variables were extracted simultaneously from sources such as: fishing logs, fishing fleet register, fishing licenses, sales notes and questionnaires, using the exhaustive method. The collection of data was done monthly from all economic agents, from the above-mentioned documents, by fisheries inspectors who regularly check landing points and first-sale centres. The data collected and verified by NAFA inspectors were sent to NIMRD together with all the data sources collected monthly, and the latter, after a preliminary verification, switched to data processing. This method provided 100% coverage of the highest quality population. Capacity data was available in the fleet register and fishing licenses, where the following information was found: vessel length, gross tonnage, maximum engine power and age of the vessel.

5. Deviations from Work Plan methodology used to cross-validate the different sources of data

No thresholds will be applied, as specified in Chapter V of Implementing Decision (EU) 2019/910

6. Deviations from Work Plan methodology used to estimate the value of landings.

There are no deviations from the methodology used to estimate the value of landings.

7. Deviations from Work Plan methodology used to estimate the average price.

There are no deviations from the methodology used to estimate the average price.

8. Deviations from Work Plan methodology used to plan collection of the complementary data.

There are no deviations from Work Plan methodology used to plan collection of the complementary data.

SECTION 3: ECONOMIC AND SOCIAL DATA

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

General comment: This box fulfils paragraph 5 points (a) and (b) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2, Article 4 paragraphs (1), (2) and (5) and Article 5 paragraph (2) of the Implementing Decision (EU) 2016/1701 on the format of the WP. It is intended to specify data to be collected under Tables 5(A) and 6 of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box should provide information on the implementation of the fleet socio-economic data collection of Member States.

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

The variables collected for this section are listed in Table 5A of the multiannual program of the EU. The reported data were collected according to the level of the requirements set out in Tables 3, 5B and 5C of the EU-MAP. The main sources of economic and social data collection are based on the following documents: the questionnaires, fishing log-books at the Black Sea and coastal fishing log-books. Those correspond to the national fleet register, sale notes and transport notes. a. The questionnaires are the source of for economic and social data as requested in table 5 A of EU-MAP. b. The logbook is the document in which, besides data on fishing effort and catches, are included data requested in table 5A of EU-MAP. c. The fleet register is a document that contains information for technical characteristics of all fishing vessels, as per data requested in table 5A of EU-MAP. d. Sale notes contain data requested in table 5A of EU-MAP.

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

The main economic and social data holders were the economic operators involved in fishing on the Romanian Black Sea coast. By orders issued by the Ministry of Agriculture and Rural Development, economic operators have the obligation to fill in these data in the Black Sea fishing logbooks and coastal areas, sales notes, transport notes and questionnaire. All these documents, with the exception of the questionnaire, are taken over from each economic operator on a monthly basis by NAFA inspectors who, after prior checking, forward them to the research staff of NIMRD "*Grigore Antipa*" together with the data sources mentioned above. The research staffs of NIMRD after re-checking the data with the data from the collection basic sources/documents goes to the next stage of processing and then transmit them in the format requested by the end users.

Documents such as fishing logs, landing declarations in ports / landing points of fishing areas are made available to NAFA inspectors by the captains / deputies of the vessels. The collection of data at landing sites, nominated by NAFA, along the Black Sea coast, is carried out by NAFA staff. For fisheries data compliance, inspectors confront fishing logs with sales notes and shipping notes. If these data are not correlated, the necessary corrections are made.

The elaboration of the content of the Questionnaire was carried out by the research staff of NIMRD, in collaboration with NAFA staff, with strict observance of all the economic and social data requirements required by the Decision (EU) 910/2019. After completing the final form of the questionnaire, it was distributed by the NAFA inspectors to each economic agent who had the task of filling in all available data, depending on the complexity of the activities carried out, after the balance sheet was drawn up. In addition, NAFA inspectors sent these questionnaires to NIMRD research team, which checked the data, respectively contacted NAFA inspectors and economic operators when there were some inconsistencies to correct them.

In 2020, there were 175 vessels out of which 131 active and 44 inactive.

Depending on the fishing techniques used in classes of length and area of activity, active vessels were grouped into 5 groups as follows:

- AREA37PMPVL2440 of which 4 ships were 24-40 m long;
- AREA37PMPVL1824 of which 1 ship were 18-24 m;
- AREA37PMPVL1218 of which 21 ships were 12-18 m;
- AREA37PMPVL0612 of which 25 vessels of 06-12 m;
- AREA37PGVL0612 of which 68 ships from 06-12 m;
- AREA37PGVL0006 of which 12 vessels from 00 to 06 m.

PMP fishing vessels have used both active and passive fishing gear (TBB, OTM and GNS) for 24-40m and 12-18m vessels respectively [TBB, GNS, FPN, LHP, SB, MISC (mowing diving)] for ships of 06 to 12 m. PG fishing vessels have only used passive fishing gear (GNS, FPN, FPO, LHP) and insignificant MISC (collecting molluscs with divers).

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

The method of data collection that has been applied is randomized. In accordance with the obligations relating to different data to be reported to other EC bodies, Eurostat (the annual methodological report on data collection and management statistics on national fisheries and aquaculture) applied the exhaustive method covering 100% of the active vessels registered in FRF for all segments of the fleet.

The following procedures / means were used:

1. NAFA staff: NAFA headquarters: 3 persons were involved in the centralization and compilation of data, respectively recording data in the formats requested for transmission to the relevant national and international bodies; the regional NAFA branch in Constanta, responsible for the activities in their area of competence helping the scientists of NIMRD to collect data from fishermen, as inspectors, technical and economic and social data from operators in the field. NIMRD scientific teams processing data are cross checking, complying, registering data in data base of the programs, to be used for transmissions to end users, in formats requested.
2. Technical equipment: computers, laptops, e-mail – facilitating the links between central offices and regional NAFA affiliates, and NIMRD. All data collected, used by scientists, are/is the basis for the fisheries work, of vary purposes inside the work frame of data collection.

4. Description of methodologies used for estimation procedures

The calculation of all the groups of economic variables and social variables and implicitly variables was carried out in accordance with the instructions in Table 5A of the Union Multiannual Program (Decision (EU) 2019/910) and was based on the figures obtained from the questionnaire and other sources mentioned above to the owners of the fishing units, subsequently taken over / verified by NAFA/NIMRD inspectors and forwarded to the research staff from NIMRD in the field of fishery statistics for whole process of compilation as above described.

It should be noted that data was collected from all economic operators. In this case, the data collection method was exhaustive, i.e. the resulting evaluation was made by census.

In accordance with national law for vessels over 12 m, the captain had the obligation to fill in with the Black Sea fishing log data for each fishing operation, including no. fishing days and state at sea, no. fishing hours and state at sea, type of gear used, no. tools, no. fishermen, fishing area, working depth, fishing location coordinates and species catches, live weight and sales prices (the last three dates have been recorded in sales notes).

The same data requirements as above for boats over 12 m have the owners of boats below 12 m.

All this information is made available to the local NAFA branch office staff weekly / monthly by licensed operators / license holders and contains data on: catch per species / fishing effort / fishing capacities and average selling price, all these data are required for informing the national authorities responsible in the field, respectively international.

For collecting data on all of the above-mentioned activities, there were no other regulatory legislative documents issued by other national authorities, including national statistics, other than those issued by the Ministry of Agriculture. All data recorded in the Black Sea and coastal fishing logbooks have been verified, according to the national legislation and internal procedures methodology of NAFA.

The fishing vessels in Romania have only been active in a single superregional / region, in accordance with Table 5C of the Union's multiannual program [Decision (EU) 2019/910] - the Mediterranean and the Black Sea, the sub-region of the Black Sea.

5. Description of methodologies used on data quality

The method described for data collection using the legal documents required by national legislation and the local activity of NAFA staff provided a 100% accuracy for all fishing vessels, due the small no of vessels. In order to collect data, the records of the above-mentioned documents were used. This information was transmitted by all active vessels to the regional NAFA subsidiary, where they were taken over by the designated personnel to process the legal documents in accordance with our national regulations.

Weekly, for regional fishing activities, staff in regional branches centralized data on: total production, sales of raw materials, final destination of own products, total value of each produced catch.

Data reliability / control checking by comparing data with other sources, as a statistical rule, was done by cross-checking the documents requested at the branch level by the local inspector and the person specialized in centralizing the data. The second stage was carried out in the NIMRD - the data were rechecked by research staff (a cross-check of all data provided by economic operators, N.A.F.A. and the Ministry of Finance) was carried out before they were processed for transmission to end users respectively uploaded to the centralized database - PNCD * Romania.

The methodology used cannot be publicly accessed because the site NAFA is not yet operational. The program database is stored separately on a secured server in NIMRD.

The contract for the implementation of NAFA's integrated database is currently in the process of being installed. The

database will include the manual of methodologies currently developed and used for data collection and verification. No thresholds will be applied, as specified in Chapter V of Implementing Implementation (EU) 2019/910

6. Deviations from Work Plan methodology for selection of data source

There are no deviations from the methodology used to select the data source.

7. Deviations from Work Plan methodology to choose type of data collection

There are no deviations from Work Plan methodology to choose type of data collection.

8. Deviations from Work Plan methodology regarding sampling frame and allocation scheme

There are no deviations from the Work Plan methodology regarding sampling frame and allocation scheme.

9. Deviations from Work Plan methodology used for estimation procedures

The economic and social data collected from fishing units are included in Table 3A. There are no deviations from Work Plan methodology used for estimation procedures.

10. Quality assurance

10.1. Sound methodology

The collection of fishing data complies with the methodologies agreed within the group of experts. Methodologies are documented and not made public.

10.2. Accuracy and reliability

The response rate and sampling rate are provided in Table 3A - "Segmentation of population for the collection of economic and social data for fishing" (as required by EU Decisions 2019/910 and 2016/1701).

The response rate is expressed as a percentage.

Validation and evaluation of raw data, intermediate and final results was carried out in a first step by cross checking both by NAFA and by NIMRD (the gross delete) and data recorded in all the documents provided by the economic operators.

In the second stage, the staff specialized in the centralization of the data from NAFA and NIMRD carried out a re-verification of centralizations in case documents were found that were not sent in time or in which minor modifications and subsequent amendments were made by certain economic operators. In the last stage, NIMRD research staff, following a reassessment of the integrity and accuracy of data from centralized situations, switched to data processing, as well as a regular check of the interim and final results respectively

10.3 Accessibility and clarity

Are methodological documents available publicly?

YES

Are the data stored in databases?

YES

Where can one find methodological documents and other documents?

The web page is under construction.

The program database is stored separately on a secured server of National Institute for Marine Research and Development *Grigore Antipa* Romania (NIMRD) – <http://cdp.rmri.ro/pncd/index.html>

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

General comment: This box fulfils paragraph 5-point (b) and paragraph 6-point (b) of Chapter III of the Annex Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2 and Article 4 paragraph (3) point (c) of the Implementing Decision (EU) 2016/1701 on the format of the WP. It is intended to specify data to be collected under Table 6 of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box is intended to provide information on the results obtained from the implementation of the pilot study (including deviations from planned and justifications as to why if this was not the case).

1. Aim of pilot study

The purpose of the pilot study is to assess the social situation existing in the fisheries sector. The overall objective of the study was to analyse social circumstances based on the following main indicators: the structure of the workforce divided by gender, age, level of education, nationality and professional status, full-time equivalent (FTE) by gender and national level.

Social indicators are instruments that measure social performance in order to understand the knowledge of the social phenomena and processes quantitative and qualitative, making it possible to compare in time with reference to the concept of quality.

Specific objectives of the study focused on assessing the level of social progress in fishing activities, quantitative and qualitative contribution to programs, sustainable management of natural resources and quality of life.

The final stage of the study was to analyse and interpret the collected data, to test the effectiveness of the research tools and protocols, and to estimate the statistical parameters for further analysis.

The main participants in the survey were the fishing organizations operating in the Romanian Black Sea sector, NIMRD Constanta, in collaboration with the National Agency for Fisheries and Aquaculture.

2. Duration of pilot study

The study will be conducted annually between 2020 and 2021 and the final report will be available in early 2022.

3. Methodology and expected outcomes of pilot study

a. For fisheries

The pilot study was based, as mentioned above, on quantitative and qualitative methods. The qualitative method consisted of involving the focus group / round table with experts and professional organizations who set the content of the questionnaire. The quantitative method focused on the distribution and collection of the completed questionnaire with all the required data, respectively the correlation of the data with the information obtained during the interviews carried out by the NAPA inspectors and the NIMRD survey personnel, with the fishermen during the expeditions made at sea and in the coastal zone.

Thus, the methodology approached included an analysis of primary research, followed by questionnaires, individual interviews and focus groups. In this way, both the official sources of data and the opinions of the fishermen were consulted in order to determine the complex image of the social context for the fishermen's communities operating in the field, in the Romanian Black Sea sector.

The main social data holders were, of course, economic operators directly involved in fishing activities in the Black Sea coastal and marine areas. By orders issued by the Ministry of Agriculture and Rural Development, economic operators had the obligation to complete the social data in questionnaires in accordance with the requirements of Decision (EU) 910/2019.

The elaboration of the content of the questionnaire was carried out by the research staff of NIMRD "*Grigore Antipa*" in collaboration with NAFA staff, with strict observance of all the requirements regarding the complexity of the social indicators stipulated in the Decision (EU) 910/2019. After completing the final questionnaire form, it was distributed by NAFA inspectors to each economic agent who had the task of completing all the available data, depending on the complexity of the activities carried out after the balance sheet was drawn up.

After completing the questionnaires with the requested data, they were also taken over from each economic operator by the NAFA inspectors, who, after a preliminary verification, sent them to the research staff of NIMRD "*Grigore Antipa*". The research staff of NIMRD, after checking and comparison of the data from the questionnaire with those from other sources of collection / information [coastal and marine fishing logs, interviews with fishermen on the ground (fishing points or in the fishing zones)], it went to the next stage of processing, namely the transmission of the processed data to the end users in the format requested by them.

Researchers involved in discussions with fishermen and representatives of key organizations did not influence their responses. Respondents were encouraged to respond and participate in as many discussion topics as possible, but the

researchers' influence was minimal. They did not express their views on the issues addressed and directed the discussion only to ensure the best possible coverage of the topics and to get answers from as many participants as possible. In both individual and group interviews, the role of the interviewer is to moderate the discussion and create a framework where participants feel stimulated to participate in the discussion.

The limits of the study relate to the extent to which respondents have reached all the key points, especially those considered sensitive. While face-to-face discussions (both group and individual) have the advantage of capturing the free speech of respondents, stimulating interaction among participants, surprise motives, stories, and a broader view of the subject. At the same time, face-to-face discussions can inhibit certain respondents, at least for the start, and in the case of group focus, there is a risk of stronger voices taking control over the discussion. All these limitations can be overcome with the help of discussion moderators who can help responders engage in discussion, better organize their speech, overcome the fear of expressing diverging views from other participants, and not feel pressure to express desirable opinions.

In 2020, out of the 175 authorized vessels, only **131** vessels were fishing, the remaining **44** were inactive. Depending on the fishing techniques used in the length classes and areas of activity, active vessels in both years were grouped into 5 class segments as follows: VL2440PMP, VL1824PMP, VL0612PMP, VL0612PG and VL0006PG.

Fishing vessels grouped on PMP techniques used both active and passive fishing gear (TBB, OTM, GNS, SB and MISC). Such activities were provided by almost all categories of vessels (VL 2440, VL1824, VL1218 and VL0612) except for the VL0006 segment.

PG based fishing vessels were those in the VL0612 and VL0006 class segments, the main tools used were: GNS, FPN, LHP and LLS.

b. For aquaculture and processing

Pilot study for the aquaculture and processing sector were based on qualitative and quantitative methods. The study contains data on employment levels by education and nationality, was conducted according to the following steps:

1. The form of the questionnaire was established in accordance with Table 6 of the Union's multiannual program, following consultations with aquaculture specialists, the specialists of the Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture Galati (IRDAEFA), NAFA agents and processing organizations.
2. For the aquaculture sector, sample size for pilot study 3 was determined, depending on the human resource segmentation by gender, age, level of education, nationality, professional status. Sample size and participating units in study - processing sector, were established, taking into consideration the seniority of the unit in the fish processing sector and its continuity, as well as the promptitude of the unit in the data reporting process, the involvement of the persons with sufficient knowledge in the field for each segment (segment 1-10 employees, segment 11-50 employees, segment 51-250 employees, segment ≥ 251 employees). For each segment it was selected a unit with CAEN code 10.20 - reworking and conservation of fish, crustaceans and molluscs, in order to carry out the pilot study.
3. The collection of social data was done by completing the interview questionnaire with the role of obtaining coherent and comparable information on the social variables to be collected subsequently the pilot study. Sample size and participating units in pilot study processing sector, were established, taking into consideration the seniority of the unit in the fish processing sector and its continuity, as well as the promptitude of the unit in the data reporting process, the involvement of the persons with sufficient knowledge in the field for each segment (segment 1-10 employees, segment 11-50 employees, segment 51- 250 employees, segment ≥ 251 employees). For each segment it was selected a unit with CAEN code 10.20 - reworking and conservation of fish, crustaceans and molluscs, in order to carry out the pilot study.

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

a. for fisheries

The results of the pilot study will be materialized in a database on the social structure of fishing personnel such as quantitative and qualitative contribution broken down by sex, age, nationality, level of education, level of training, implicitly, structure of the days and hours worked.

In order to determine an overview of fishermen's communities fishing in the Romanian Black Sea sector and to ensure the overall objectives of the study, the data was initially collected from official sources, which were subsequently supplemented from the social analysis of these. Finally, the overall picture is complex, starting from the general analysis of communities and identifying social issues.

The data and information collected will highlight the level of social progress and will provide the opportunity to take appropriate social policy measures to improve the social conditions for fishing communities by linking and optimizing existing reports among the main social indicators.

We can say that the pilot study has facilitated the assessment of the existing social situation in the fisheries sector. the

purpose of the pilot study was to assess the social circumstances based on the main indicators: the structure of the workforce divided by gender, age, level of education, nationality and professional status, unpaid labour by gender, equivalent to full-time (FTE) by gender and national level, as it follows:

The analysis of the social situation of the personnel who carried out fishing activities in the coastal and marine areas of the Romanian Black Sea sector in 2020

a. The structure of the personnel who worked in 2020 in the marine fishery sector, by the state of employment

In 2020, a total of **131** ships were active and the number of staff engaged in marine fishing activities was **388** males. The average number of people employed per ship was 3 persons / ship.

The structure of the active vessels on segments of length classes and fishing techniques was as follows: 4 PMP vessels 24-40 m, 1 PMP vessel 18-24 m, 21 PMP vessels 12-18 m, 93 ships 06-12 m (of which 68 PG and 25 PMP), 12 vessels 00-06 m PG (Fig. 3.1), and the situation with the total number of fishermen by sex recorded on each segment of fishing vessel and fishing technique is shown in Fig. 3.2.

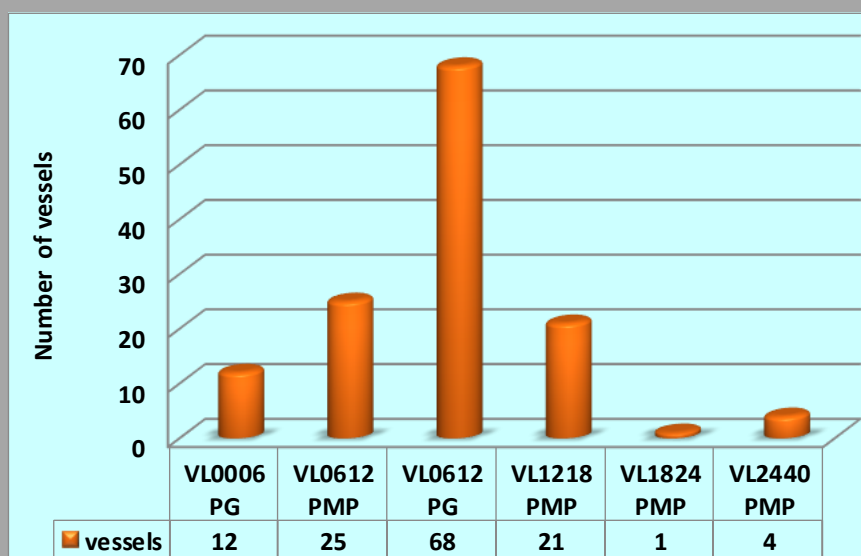


Fig. 3.1 The situation of active vessels, structured by length classes and fishing techniques in 2020

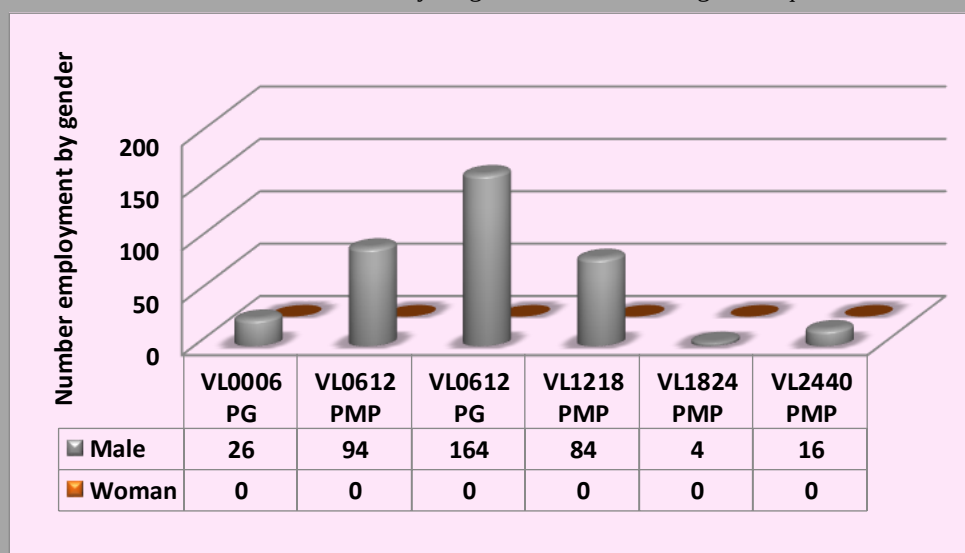


Fig. 3.2 The employment situation by sex in 2020

The employment situation on ship segments, fishing techniques and employee status is shown in Fig. 3.3. As you can see, the staff employed as an employee was numerically dominant. The number of landlords ranged from 1 to 3 to the VL2440PMP, VL1824PMP and VL0006PG segments and 5 to 10 to the VL1218PMP, VL0612PMP and VL0612PG segment while the other segments of the vessels did not have fishermen on such a statute. Percentage of persons with ownership status accounted for 7% and the employee employed 93% of the total number of **388** occupiers. In general, shipowners participate with the crew in fishing activities and have the status of an employee.

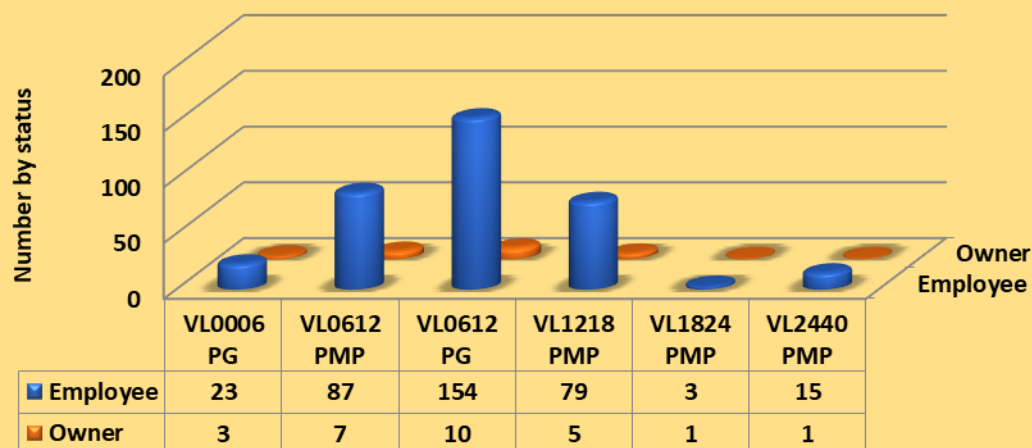


Fig. 3.3 The situation of active personnel on vessel segments and fishing techniques with employee and owner status

Employment structure by age

Figure 3.4 shows that all segments of the ship predominated between the ages of 25-39 years and 40-64 years respectively, because these fishing activities by their complexity require fishermen with knowledge / experience in the field, generally the most many young people up to the age of 24, after completing high school studies, are moving to other areas of activity, perspective and more substantial salaries.

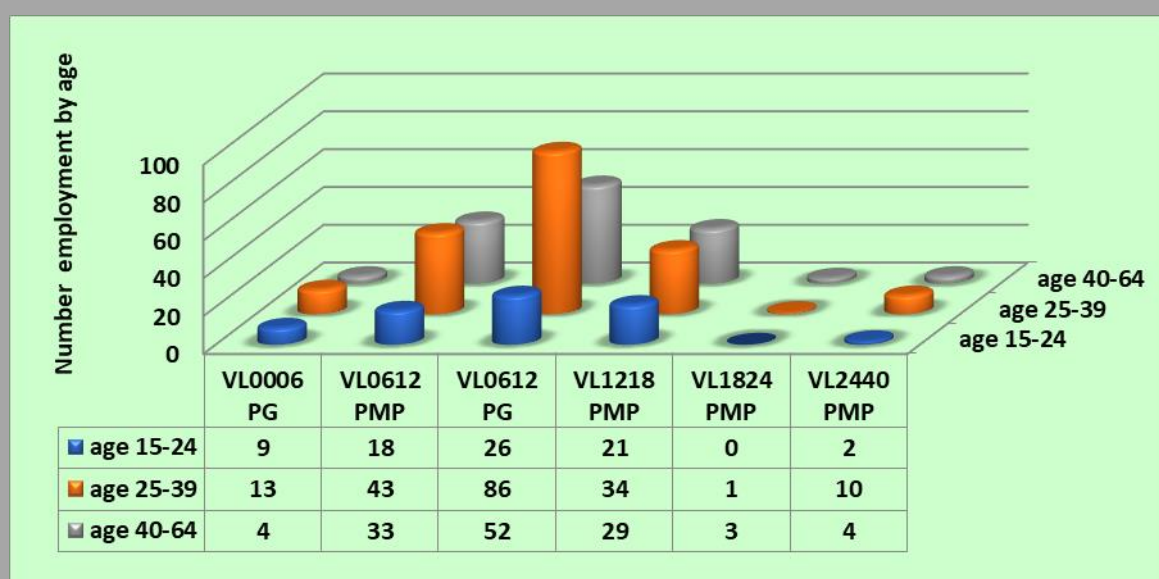


Fig. 3.4 The employment situation at age levels in 2020

Structure of employment by educational level.

As can also be seen from Fig. 3.5, in most ship segments, the educational level of the employees is low to medium, especially in the segments VL0612PG, where the low educational level is predominant (predominantly staff with a compulsory national level at which they have acquired general knowledge). Qualification and obtaining an attestation for the fishermen's profession can be done within specialized institutions for the professional training of staff who wish to work in this field. In fact, due to the lack of institutions with such qualifications, the training of the personnel wishing to carry out fishing activities (fishing operations, installation of tools, clothing / repairs, etc.) takes place directly at the workplace under the guidance and supervision of the staff qualified on board vessels, who has experience in successfully carrying out fishing activities.

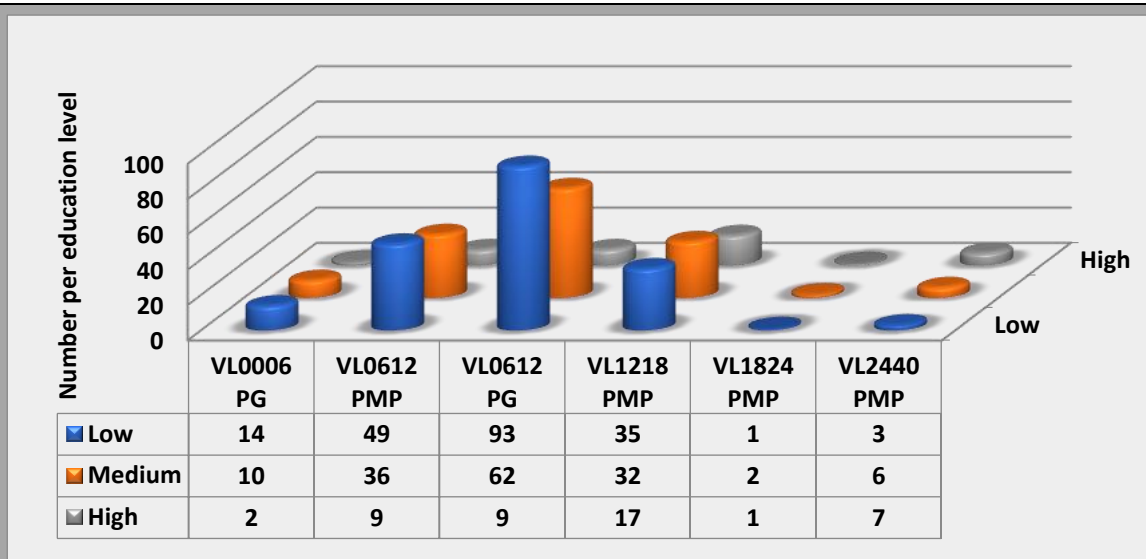


Fig. 3.5 The employment situation by educational level in 2020

Since fishing activities are seasonal in nature, with more special working conditions, young people tend to focus on other areas of activity that can provide them with a high financial support (eg economics and engineering, medicine, electronics and automatization, etc.).

In order to have a higher number of middle and or higher-qualified individuals in the fisheries sector, specialized training institutions should be promoted in the fisheries sector, but financial support must be ensured.

Structure of employment by nationality

In 2020, the total number of personnel engaged in fishing activities reached **388**. As can be seen in Fig. 3.6, most of the employees were of Romanian nationality (94%), while those of other nationalities such as Bulgarian and Turkish were representative, with 2% and 4% respectively. Persons of other nationalities found themselves employed on segments of vessels using PMP fishing techniques (eg: VL2440PMP, VL1218PMP and VL0612PMP).

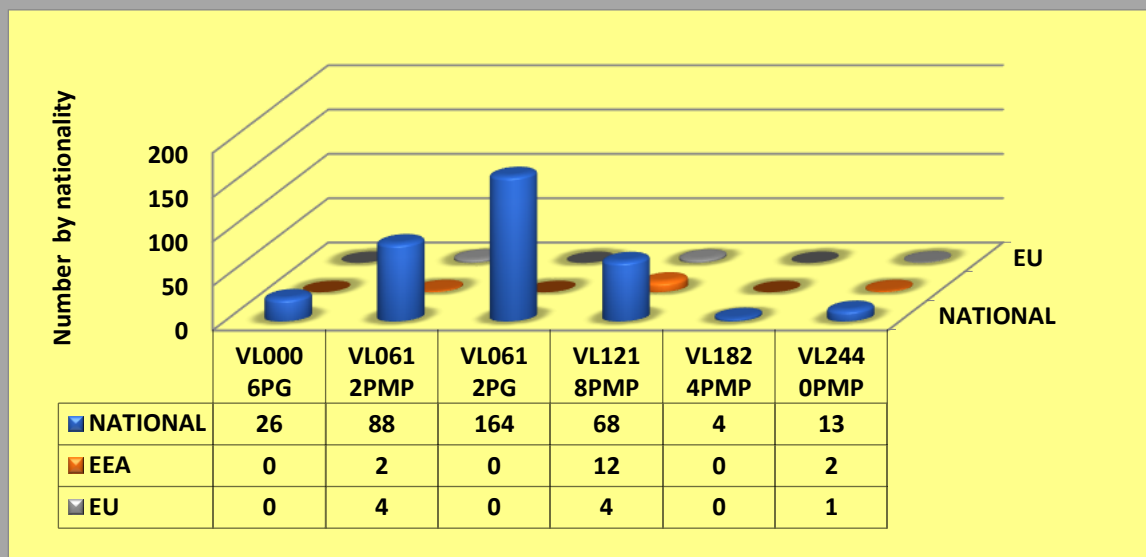


Fig. 3.6 The employment situation by nationality in 2020

Structure of unpaid labour by gender

As it can be seen in Fig.3.7, the number of staff who opted in 2020 for the unpaid work option varied from one ship segment to another. Most options for this variant were registered in the length class VL0612 where, by the way, the employed staff was dominant (67% of the total number of employees). In conclusion, it can be said that the major option of the employed staff was for the salary payment option.

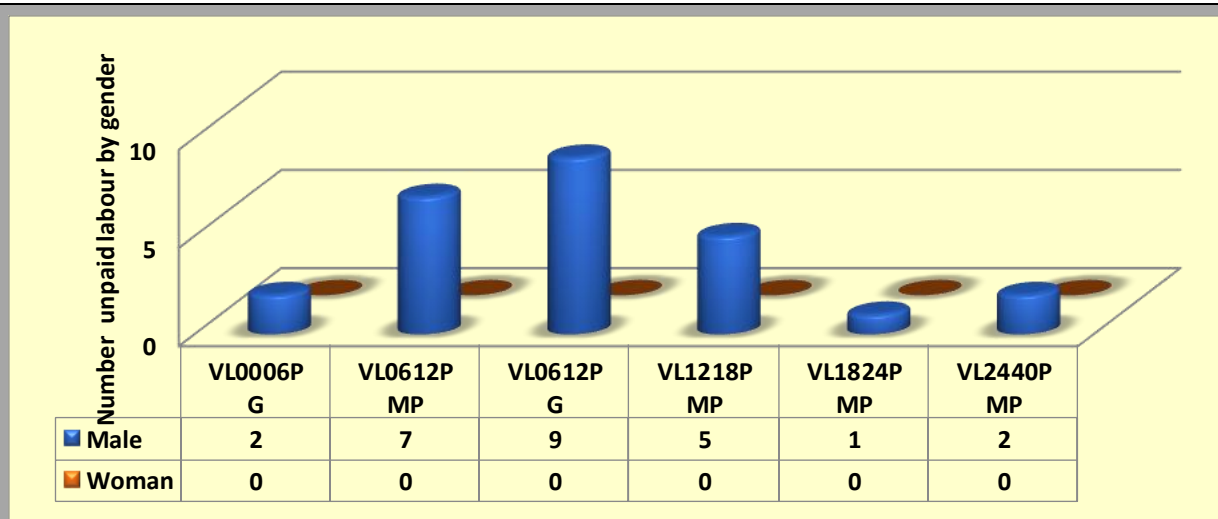


Fig.3.7 Structure of unpaid labour by gender in 2020

Structure of FTE National

The values of FTE National were presented, in 2020, at a low level (fig. 3.8), compared to previous years, with large differences from one segment of the vessel / fishing technique to another. The main cause of an objective nature was the pandemic year which reduced the activity (fishing days) due to the decrease in orders, mainly of molluscs (*Rapana venosa* and *Mitylus galloprovincialis*), requested by restaurants, processing factories and export requirements. Thus, compared to 2019, the demand on the rapana whelk market was 40% lower in 2020 and by mussels by 26%.

We also remind you that the number of fishing days is also affected by:

- * Unfavourable hydro-climatic conditions (*small number of days favourable to fishing activities and implicitly to fishing hours*);
- * Aged fishing fleet (*51% of the total number of vessels in the Fleet Register are 100% depreciated, which is why technical and functional problems often occur in the fishing process*);
- * The fishing activity is of a seasonal nature, the number of trips at sea being dependent On the presence of migratory fish species at different times of the year with great variations from one year to another.

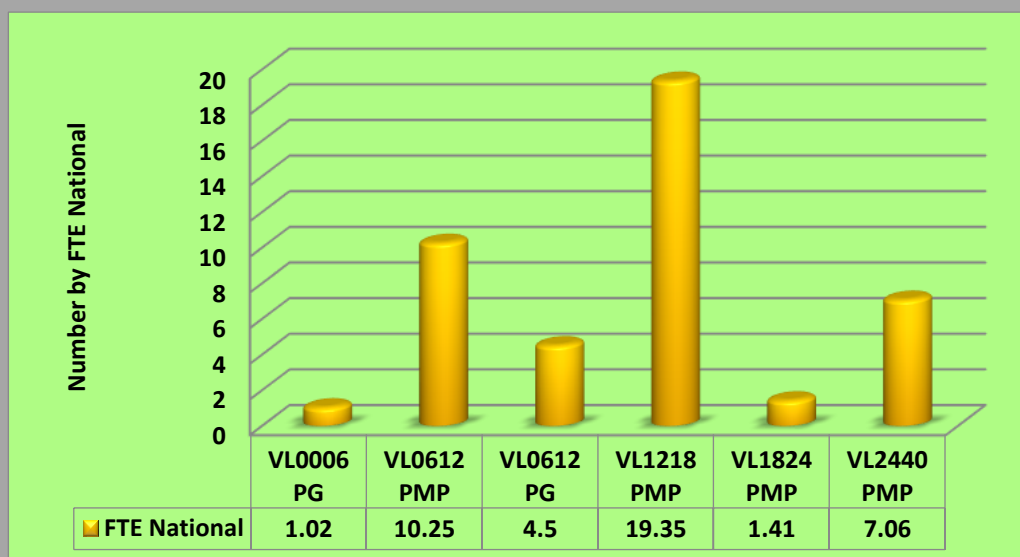


Fig.3.8 Structure of FTE National in 2020

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

Social indicators are instruments that measure social performance in order to understand the knowledge of the social phenomena and processes quantitative and qualitative, making it possible to compare in time with reference to the concept of quality. Every year, Romania, within the Annual Report, shall provide data on the situation of all social indicators identified in the marine fishing activity, as required in Table 6 of the multiannual Union Programme (Decision EU 910/2019).

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

General comment: This box fulfils paragraph 6 points (a) and (b) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of the Implementing Decision (EU) 2016/1701 on the format of the WP. It is intended to specify data to be collected under Tables 6 and 7 of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box should provide information on the implementation of the socio-economic data collection for aquaculture of Member States.

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

Questionnaires were sent to 532 units from aquaculture and a response was received from 470 units from aquaculture. Analysis of the aquaculture unit based on the technology shows that 58% are on growing farms, 40% are combined units and only 2% are hatcheries and nurseries.

The questionnaire was structured into three sections, as follows:

- Section I - Data unit identification;
- Section II - Technical data unit;
- Section III - Economic data (economic variables under table 7 of Decision 2019/910 EU).

The interview was accomplished to complete and verify the precision of the data entered in the questionnaire.

It also had the role of clarifying the lack of data entered in the questionnaire due to non-response or value "0".

The questionnaires were distributed at the level of all economic agents assigned to the NAFA regional branches, which carried out aquaculture activity in 2020.

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

The data collected were economic, social and technological. Specific for the aquaculture sector are: applied species and technologies. The questionnaire was structured into three sections, as follows:

- Section I - Data unit identification;
- Section II - Technical data unit, related to: surface, category unit (*hatchery and/or 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 Decision 2019/910 EU).

Data were collected from 470 respondents, of which:

- * nurseries -14;
- * on-growing farms - 248;
- * combined units - 222.

Further analysis of targeted segmentation units there of responding by:

- the main productions species, resulting in that:
 - 29% of respondents report that the main species trout (*Oncorhynchus mykiss*, *Salvelinus fontinalis*, *Salmo trutta*);
 - 68% of the respondents reported as the main species, cyprinids (*Cyprinus carpio*, *Ctenopharyngodon idella*, *Hypophthalmichthys nobilis*, *Hypophthalmichthys molitrix*, *Carassius auratus gibelio*) polyculture with other species grown in freshwater (prey species);
 - 3% of the respondents reported as the main other freshwater species, sturgeon and African catfish, European perch (*Acipenser ruthenus*, *Acipenser baeri*, *Huso huso*, *Acipenser gueldenstaedti*, *Acipenser stellatus* or Bester, *Clarias gariepinus*, *Perca fluviatilis*).
- technologies applied, resulting in that: 2% are hatchery and nurseries, on growing farms 58% and 40% are classified as farms were combined.

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

The method of data collection was exhaustive namely the census questionnaires. Questionnaires were sent to all officially registered farms in 2017.

The questionnaires are collected by the specialists of the Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture Galati or through the inspectors of the National Agency for Fisheries and Aquaculture

Bucharest.

The collected data are centralized, processed and reported by the specialists of the Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture Galati to the National Agency for Fisheries and Aquaculture Bucharest.

4. Description of methodologies used for estimation procedures

The estimation of some variables was necessary during data validation (e.g. livestock costs with quantity; feed costs with quantity etc). The methodology involved setting a unit price per unit, collected from other farms with the same characteristics and then estimating the missing variable. The questionnaires cover all the economic variables listed in Table 7 in accordance with Decision (UE) 2019/910. The processed data are included in Table 3B: *Segmentation of population for the collection of economic and social variables for aquaculture*. (Decision 2016/1701/EU)

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. (Decision EU 2019/910). The quality of the data has been assessed according to the Guidance for the submission and evaluation of Annual Reports under Regulation (EU) 2017/1004, Commission Implementing Decision (EU) 2016/1701, Commission Implementing Decision (EU) 2019/910, Commission Implementing Decision (EU) 2018/1283 (Version for Annual Reports 2017-2019).

Data quality was calculated using the recommended formula: the number of respondents who provided census data / total population of the framework population. Response rate is reported as percentage (%).

The response rate values for economic indicators are shown in table 3B: *Segmentation of the population for the collection of economic and social variables for aquaculture* (Decision 2016/1701/EU). The response rate varied between 88.19%-89.47%.

6. Deviations from Work Plan methodology for selection of data source

There are no deviations from the methodology, of the plan work to collect aquaculture data 2017-2019, used to select the data source.

7. Deviations from Work Plan methodology to choose type of data collection

Data collection was performed by regions and based on the number of employees for each unit. There are no deviations in the work plan regarding the sample framework and the allocation scheme.

8. Deviations from Work Plan methodology regarding sampling frame and allocation scheme

Data collection was performed by region and function of the crop species and the breeding system.

Data collection was performed by regions and based on the number of employees for each unit. There are no deviations in the work plan regarding the sample framework and the allocation scheme.

9. Deviations from Work Plan methodology used for estimation procedures

Data collection was performed by region and function of the crop species and the breeding system. The economic and social data collected from the aquaculture units, included in table 3B: *Segmentation of the population for the collection of economic and social variables for aquaculture*, which are not reported by the units, are estimated as the corresponding data average for the respondent processing units from the respective employee segment, according to the methodology <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf and <http://www.rmri.ro/Home/Publications.Other/ANPA.html?lang=en>

10. Quality assurance

10.1 Sound methodology

Data collection from the aquaculture follows the established methodologies by a group of experts. The methodologies are documented and made public by accessing the link <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf and <http://www.rmri.ro/Home/Publications.Other/ANPA.html?lang=en>

10.2. Accuracy and reliability

The rate of response and the sampling rate achieved, are presented in table 3B: *Segmentation of the population for the collection of economic and social variables for aquaculture*. (Decision UE 2016/1701). Data quality was calculated

using the recommended formula: the number of respondents who provided data in response to the census/ total population of the framework. The rate of response is presented as percentage %.

Data quality was evaluated using the guidelines of the Guide for the Annual Reports Submission of the Data Collection National Programs. The methodologies are documented and made public by accessing the link

<https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf>

and

http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf

and

<http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>

The quality of the data has been assessed using the recommended for Guidance for the submission and evaluation of Annual Reports under Regulation (EU) 2017/1004, Commission Implementing Decision (EU) 2016/1701, Commission Implementing Decision (EU) 2019/910, Commission Implementing Decision (EU) 2018/1283 (Version for Annual Reports 2017-2019).

10.3. Accessibility and Clarity

YES.

The methodologies are documented and made public by accessing the link

<https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf>

and

http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf

and

<http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>

Are methodological documents publicly available?

YES

Are data stored in databases?

YES

Where can methodological and other documentation be found?

The program database is stored separately on a secured server of National Institute for Marine Research and Development *Grigore Antipa* Romania (NIMRD) - <http://cdp.rmri.ro/pncd/index.html>

SECTION 3: ECONOMIC AND SOCIAL DATA

Pilot Study 4: Environmental data on aquaculture

General comment: This box fulfils paragraph 6-point (c) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2 and Article 4 paragraph (3) point (d) of the Implementing Decision (EU) 2016/1701 on the format of the WP. It is intended to specify data to be collected under Table 8 of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box is intended to provide information on the results obtained from the implementation of the pilot study (including deviations from planned and justifications as to why if this was not the case).

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 the Romanian aquaculture sector and the mortalities registered in aquaculture units.

2. Duration of pilot study

The pilot study was conducted in the course of the year 2018. It was initiated in 2017, by elaborating the questionnaire, based on which the environmental data on aquaculture was collected.

In the course of the year 2020, environmental data on aquaculture was collected, centralised, analysed and included in the present Annual Report, within data collection in the fisheries and aquaculture sectors programme. Subsequent to this report, the environmental variables will be collected biannual, starting with the year 2019, according to Commission Implementing Decision (EU) 2019/910.

3. Methodology and expected outcomes of pilot study

The Pilot study was elaborated based on quantitative and qualitative methods.

The qualitative method involves the interviews conducted in order to establish the form of questionnaire.

The quantitative method is represented by sample determination, distribution and collection of the questionnaires.

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

The main participants in the research are the aquaculture units, the Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture Galati (IRDAEFA), the Research and Development Station for Fisheries Nucet (RDSFC Nucet), the National Agency for Fisheries and Aquaculture (NAFA).

Pilot study 4 includes data regarding administrated substances and treatments in Romanian aquaculture units and it was performed as it follows:

1. Elaboration of the questionnaire structure, according to Table 8 of the multi-annual Union programme, following a work group session with NAFA agents, in cooperation with researchers from IRDAEFA Galati and RDSFC Nucet.
2. Sample size and the number of aquaculture units taken into study, was established by considering specific criteria such as sector segmentation and development regions.
3. Data collection was conducted according to the general data protection regulation (EU 2016/679) and by content writing the questionnaire, accompanied with punctual interviews, with the purpose of obtaining coherent and comparable information, regarding the environmental variables that are to be collected subsequent to the pilot study.

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

* In case of on growing cyprinid aquaculture units, the administrated substances with prophylactic purposes were sodium chloride and calcium oxide. Therefore, as a general conclusion, it can be stated that in case of cyprinid pond aquaculture, the utilisation of substances and treatments is mainly applied with prophylactic purpose, due to low disease chances, generated by low fish stocking density and high-water volume.

* Fertilizers for the stimulation of natural food are also administered in cyprinid establishments with soil ponds.

* In case of salmonid nursery and hatchery, the administrated substances, with curative purposes, were antibiotics (oxytetracycline, floron), sodium chloride. In case of on growing salmonid aquaculture units, the administred substances and treatments consisted of peracetic acid, with curative purposes.

Preventive treatments for the prevention of fish diseases

Species	Year	Type of chemical substance administered	The amount of substance administered (grams)	Period of administration (from m/d/y to m/d/y)	Purpose
Autochthonous cyprinids and cyprinids of South East Asia	all ages	Calcium chloride	200,000 g / ha	spring	prevention
Autochthonous cyprinids and cyprinids of South East Asia	First year summer fish	oxytetracycline	10,000	spring	prevention
Autochthonous cyprinids and cyprinids of South East Asia	First year summer fish	sodium chloride	1,000,000	spring	prevention
Autochthonous cyprinids and cyprinids of South East Asia	First year summer fish	vitamin B complex	25,000	spring	prevention and immunity
Rainbow trout	1-2 years old	floreidon	3 g/m ³	spring-summer	prevention
Rainbow trout	1-2 years old	flumechin	3 g/kg per fish	spring-summer	prevention
Rainbow trout	1-2 years old	chloramine T	10-15 g/m ³	spring-summer	prevention
Rainbow trout	all ages	Peridox	20 g/m ³	spring-summer	prevention
Rainbow trout	all ages	sodium chloride	3000 g/100 l	spring-summer	prevention
Rainbow trout	all ages	Parales 0,75 %	10 ml/m ³	spring-summer	prevention

Disinfection treatments and actions to prevent diseases in the pond/Growth space/ Equipments

The type of pond/Growth space/Equipments	Type of chemical substance administered	The amount of substance administered (grams)	Period of administration (from m/d/y to m/d/y)	Purpose
Rearing ponds	Calcium oxide	200.000 / ha	Spring	Prevention
Concrete ponds	Chloride of Lime	100 g / m ²	All year round	Disinfection
Hatching stations for trout farms	Chloramine T	10.000 g	Before and after incubation	Disinfection
Concrete ponds / Hatching stations for trout farms / Recirculating aquaculture systems (RAS)	detox	25.000 g	All year round	Disinfection
Concrete ponds	Sodium chloride	15000 g	Spring - Autumn	Prevention

Amendments and fertilizers administered

Amendment / fertilizer administered	Amount of Amendment / Fertilizer administered (kg)	Period of administration (from m/d/y to m/d/y)	Purpose
Calcium hydroxide	4,112	spring-summer	Disinfection and amelioration
Manure	100,000	spring-summer	Natural food stimulation and improvement

Curative treatments: Treatment for diseases manifested in the fish unit

Disease	The species for which the treatment was applied	Age	Type of drug administered	Amount administered (grams)	Period of administration (from m/d/y to m/d/y)
Gill necrosis	Trout	1-2 years old	Chloramine T	10-15 g/m ³	spring autumn
Columnaris disease	Trout	5 months	Floron	0,1 g s.a. /kg	summer
Red mouth disease	Trout	spawn	floron/floredan	40g/100 kg fish/zi	10 days
Myxobacteria	Trout	spawn	oxytetracycline	4-6 g/100 kg fish	10 days
Furunculosis	Trout	All ages	florfenicol	2 g/100 kg	7 days
Fibrous hepatitis, Haemorrhagic enteritis	Sturgeons	2 years old	doxyrom 10%	2 g/10 kg lean body mass	summer
Yersinioza	Trout	1-2 years old	Floron, premix	10,000-20,000	spring autumn
Saprolegnia/ Columnarius	Trout	All ages	florfedidem	According to the veterinarian's instructions	7 days
	Trout	All ages	trimazin	According to the veterinarian's instructions	8 days
Branhiomycosis	Cyprinids	All ages	Copper sulphate	3000 g/ha	summer

Mortality caused by diseases recorded in aquaculture units

Mortalities %	Species	Age
1	Rainbow trout	First year summer fish
1	Rainbow trout	Second year summer fish
1-10	Brook trout	Second year summer fish
1	Carp	1 year old
30	Crap	Second year summer fish
3	Sanger	Third year summer fish
95	Russian sturgeon	First year summer fish
90	Beluga	First year summer fish
5	Wels catfish	1 year old
2	Sterlet	1-2 years old

In conclusion, it can be stated that in the case of salmon units, the application of treatments and substances is performed for curative purposes, due to the high storage densities of fish biomass, which generates a high risk of disease among the fish population.

The mortality reports within the salmonid units were lower compared (1-31%) with the mortality reports within the cyprinid units (1-45%), and in the sturgeons' units there are mortifies between 2-95%.

This fact is explained by the different fish stocking density practiced for each specific rearing system.

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

Romania will report aquaculture environmental data, biannual, starting with the data collection from 2018, from all respondent units.

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

General comment: This box fulfils footnote 6 of paragraph 1.1(d) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme; and Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of the Implementing Decision (EU) 2016/1701 on the format of the WP. It is intended to specify data to be collected under Table 10 of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box should provide information on the implementation of the socio-economic data collection for aquaculture of Member States.

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

Identification of the units having as object of activity (main and secondary activity) - Processing and conservation of fish, crustaceans and molluscs, classified according to EUROSTAT with NACE code 1020, was realized by consulting the Processing Units Registry (PUR) elaborated by National Agency for Fisheries and Aquaculture Bucharest, the reports and records from National Agency for Fiscal Administration (NAFA) and the Trade Registry.

Annually, the list of fish processing companies is updated by cross-checking various sources that have information about the companies involved in fish processing activity. We refer to the National Sanitary Veterinary and Food Safety Authority for fish and fishery products processing units (ANSVSA) institution that issues veterinary and sanitary operating authorizations for processing activity and without which the processing units cannot carry out their activity. The collection of technical, economic and social data from economic agents was done by questionnaire and interview by phone.

In 2020, according to the Processing Units Registry, elaborated by NAFA Bucharest, the reports and records from the National Agency for Fiscal Administration and the Trade Registry, as well as the sanitary and veterinary authorizations issued by the National Sanitary Veterinary and Food Safety Authority on fish and fishery products processing units, a number of 53 companies were identified that carried out fish processing activity.

Not all companies process fish as their main activity.

From the total population a number of 18 companies carries out this activity as main and a number of 35 companies carries out this activity as a secondary.

In 2020, technical and economic data were collected from 43 processing units, as follows:

- * 18 respondents represented processing units with main activity according to NACE 1020;
- * 19 respondents had processing activity as secondary activity (without supermarkets/ hypermarkets);
- * 6 respondents had processing activity as secondary activity represented by supermarkets/ hypermarkets;

The distribution of processing units that responded, on the 8 development regions of Romania is presented in table 1.

Table 1 – Processing units from Romania distributed by development regions from which data was collected

Region	Number of respondent processing units	
	Main activity	Secondary activity
N-E	3	5
S-E	4	11
S	3	4
S-V	0	1
V	1	0
N-V	1	2
Centre	2	1
Bucharest -Ilfov	4	1
TOTAL	18	25

The 18 processing units with main activity according to NACE 1020, were classified, in conformity with UE recommendations found in table 3C: *Population segments for collection of economic and social data for the processing industry*, according to the number of employees, in 4 segments of units: companies with 10 or less employees, companies with 11-49 employees, companies with 50-249 employees and companies with 250 or more employees, and the situation of the processing sector is presented as follows:

- * companies ≤ 10 employees: 3 unit;
- * companies 11-49 employees: 10 units;
- * companies 50-249 employees: 4 units;
- * companies ≥ 251 employees: 1 unit.

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

The questionnaires are collected by specialists of the Galati Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture or through inspectors of the National Agency for Fisheries and Aquaculture Bucharest.

The purpose of the interview is to clarify, validate and verify the data reported in questionnaires.

The collected data is centralized, processed and reported by specialists of the Galati Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture, to the National Agency for Fisheries and Aquaculture Bucharest.

The questionnaires cover all economic variables listed in table no. 11 which can be found in the Commission Implementing Decision (EU) 2019/910. The processed data is included in table 3C: *Population segments for collection of economic and social data for the processing industry*.

Data collection was realized by regions and by number of employees for each company.

The questionnaires are structured in three sections:

- * Section I – Unit identification data (company name, NACE code, ownership, unit address, contact person).

- * Section II – Processing unit activity data (raw materials, assortments, types, quantity, value, if they were marketed in the country or exported).

- * Section III – Economic data (revenue, expenses, number of employees, financial statements) and social data according to table 11 - Commission Implementing Decision (EU) 2019/910.

Regular and direct contact with processing companies has improved the trust of processors and therefore increased the willingness of companies to cooperate and provide the requested data.

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

Questionnaires were distributed to all fish processing units. The data collecting method was realized exhaustively through the census method in order to centralize and analyse the data. The census method is used because of the small number of processing units that functioned during 2020 and for a more correct and accurate knowledge of the Processing and conservation of fish, crustaceans and mollusc's sector.

Data collection was performed with NACE 1020 code – main activity and secondary activity.

From the units with NACE 1020 code – main activity, was collected data concerning:

- * raw material used;
- * assortments obtained from processing;
- * economic and social data (according to table 11 - Commission Implementing Decision (EU) 2019/910).

From the units with NACE 1020 code – secondary activity, was collected data concerning:

- * raw material used;
- * assortments obtained from processing;
- * economic (turnover) and social data.

The data collected from units with NACE 1020 code – main activity, was processed and ordered according to number of employees of the processing unit, and included in the standard table 3C: *Population segments for collection of economic and social data for the processing industry* from the Annual Report of Data Collection 2020.

4. Description of methodologies used for estimation procedures

The questionnaires cover all economic variables listed in table 11 of the Commission Implementing Decision (EU) 2019/910. The processed data is included in table 3C: *Population segments for collection of economic and social data for the processing industry*.

Social and economic data collected from units with main activity, included in table 3C: *Population segments for collection of economic and social data for the processing industry*, which have not been reported by the processing units, were estimated as a data average corresponding to the respondent units from the respective employee's segment.

This year, the rate of response for the processing units with main activity was 100%, and the rate of response for the processing units with secondary activity (excluding hypermarkets) was 71,42%.

5. Description of methodologies used on data quality

The following actions have been taken to improve data collected:

- Rigorous updating of the list of companies that have carried out primary or secondary processing activity;
- Correctness verification of the data entered in the questionnaire through telephone interviews and from accessible sources of the Ministry of Finance.

Data quality was evaluated according to the instructions from the guide - „Guidance for the submission of Annual Reports” under Regulation (EU) 2017/1004.

Data quality was calculated using the recommended formula, respectively: the number of respondents who provided

data in response to the census/ total population of the framework.

The response rate is presented as percentage %.

The response rate values of economic indicators are presented in table 3C: *Population segments for collection of economic and social data for the processing industry*.

Following the process of collection, data was obtained in proportion of 100% from the units with main activity and in proportion of 71,42% from the units with secondary activity (excluding hypermarkets).

This year, through a closer collaboration with the processing companies, a good collection of economic and production data was achieved from the units with main and secondary activity.

The methodology used can be accessed by the public. The site is operational and can be accessed through the following link: <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> and

http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf

No thresholds will be applied, as specified in Chapter V of Implementing Decision (EU) 2019/910.

6. Deviations from Work Plan methodology for selection of data source

There are no deviations from the methodology of the work plan for data collection in processing 2017-2019, used to select the data source.

7. Deviations from Work Plan methodology to choose type of data collection

There are no deviations from the methodology of the work plan for data collection in processing 2017-2019, used to select the data source.

8. Deviations from Work Plan methodology regarding sampling frame and allocation scheme

Data collection was performed by regions and based on the number of employees for each unit.

There are no deviations in the work plan regarding the sample framework and the allocation scheme.

9. Deviations from Work Plan methodology used for estimation procedures

The economic and social data collected from the processing units with main activity, included in table 3C: *Population segments for collection of economic and social data for the processing industry*, **which are not reported by the units, are estimated as the corresponding data average for the respondent processing units from the respective employee segment, according to the methodology.**

<https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf>

and

http://www.rmri.ro/Home/Downloads/Publications.Other/NAFA_MethodologicalReportEN.pdf

and

<http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>.

10. Quality assurance

10.1 Sound methodology

Data collection from the processing industry follows the established methodologies by a group of experts.

The methodologies are documented and made public by accessing the link <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> and <http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>

10.2. Accuracy and reliability

The rate of response and the sampling rate achieved, are presented in table 3C: *Population segments for collection of economic and social data for the processing industry*. (Decision UE 2016/1701).

Data quality was calculated using the recommended formula: the number of respondents who provided data in response to the census/ total population of the framework.

The rate of response is presented as percentage %.

Data quality was evaluated using the guidelines of the Guide for the Annual Reports Submission of the Data Collection National Programs.

The methodologies are documented and made public by accessing the link <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> and <http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>

10.3. Accessibility and Clarity

Are methodological documents publicly available?

Yes. The methodologies are documented and made public by accessing the link <https://asas-icdeapa.ro/proj/Procedura-Manual-EN.pdf> and <http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>

Are data stored in databases? YES

Where can methodological and other documentation be found?

The program database is stored separately on a secured server of National Institute for Marine Research and Development Grigore Antipa Romania (NIMRD) - <http://cdp.rmri.ro/pncd/index.html>

Text Box 4A: Sampling plan description for biological data

General comment: This box fulfils Article 3, Article 4 paragraph (4) and Article 8 of the Implementing Decision (EU) 2016/1701 on the format of the WP and forms the basis for the fulfilment of paragraph 2-point (a)(i) of Chapter III of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme. This Table refers to data to be collected under Tables 1(A), 1(B) and 1(C) of the delegated decision on the multiannual Union programme.

General comment: This box is applicable to the Annual Report. This box should provide information on the deviations from the planned sampling of Member States.

1. Description of the sampling plan according to Article 5 paragraph (3) of the Implementing Decision (EU) 2016/1701 on the format of the WP.

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 (Table 2 Fishing activity species) and for fish species included in Tables 1(A), 1(B) and 1(C) of the multi-annual Union programmes (EU Decision no. 910/2019) and according to the relevant GFCM criteria, three different groups have been established, by which the species are listed at subregional level (GFCM subregions):

- * The first group refers to the frequency of evaluations (i.e. the species that are evaluated regularly);
- * The second refers to the importance of fishing (e.g. landings, catches and / or economic value);
- * The third group is based on conservation criteria (i.e. endangered species) or the impact of their presence on the ecosystem (i.e. non-indigenous species).

For the period 2020-2021, biological studies included: *group 1*: sprat / *Sprattus sprattus*; European anchovy / *Engraulis encrasicolus*; turbot / *Scophthalmus maximus* also called *Psetta maxima maeotica*; Mediterranean horse mackerel / *Trachurus mediterraneus ponticus* and picked dogfish / *Squalus acanthias*; *group 2*: whiting / *Merlangius merlangus euxinus*; rapa whelk / *Rapana venosa*; *group 3*: thornback ray / *Raja clavata*; common stingray / *Dasyatis pastinaca*; red mullet / *Mullus barbatus ponticus*. Species small-spotted catshark / *Scyliorhinus canila*, is 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).

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 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.

In 2020, sampling commercial fishing covered the following species: sprat (*Sprattus sprattus*); anchovy (*Engraulis encrasicolus*); turbot (*Scophthalmus maximus*); picked dogfish (*Squalus acanthias*); horse mackerel (*Trachurus mediterraneus*); red mullet (*Mullus barbatus*); rapa whelk (*Rapana venosa*); thornback ray (*Raja clavata*) and common stingray (*Dasyatis pastinaca*) (Table 1C). In commercial fishing, whiting (*Merlangius merlangus*) has a very low commercial interest, landing catches are very small (505 kg). Data on catches and landings were obtained from the fishing logs and refer to the species fished and the gears used by all the vessels. The information is based on exhaustive data reported in Fishing logs, being used as data sources and sales notes and vessel monitoring system (VMS).

Following the procedure described in the Program Implementation Guide, in 2020, Romania monitored and collected samples for the following meadows (table 4A *Sampling plan for biological data*):

- * pelagic trawl fisheries / OTM_MPD_>=13_19_0_0;
- * fishing with pound nets / FPN_MPD_0_0_0;
- * beam trawl fishing / TBB_DEF_0_0_0;
- * gill nets / GNS_DEF_360-400_0_0;
- * fishing with longlines and hooked lines / LHP_LHM_FIF_0_0_0;
- * divers / divers / MISC.

Although in general, the specie target in pelagic trawling is the sprat. In 2020, the species caught by the 10 boats: 1 boat of 6-12 m, 8 boats of 12-18 m and a vessel of 18-24 m, which fished the species: bluefish, horse mackerel, anchovy and red mullet.

In the case of pound net fisheries, the main target species in the catches are seasonal in nature, sprat being the target species during spring and early summer and anchovy and horse mackerel during summer and autumn. The incidental catches of pound net fishery were composed of garfish, whiting, turbot, red mullet, sole and other demersal species.

In demersal fishing with turbot and goby gillnets, the commercially important bottom species were turbot, knout goby and round goby, with thornback ray, common stingray and dogfish as by-catches. The main target species of shad gillnets were Pontic shad (*Alosa immaculata*), Caspian shad (*Alosa tanaica*) and bluefish (*Pomatomus salatrix*).

Fixed longlines were representative for artisanal fisheries, but the catches and effort were insignificant. The main species in catches are knout goby, round goby and horse mackerel, and bluefish in autumn.

In 2020, the sampling resources were allocated to sea sampling and shore sampling. The distribution of the sample is based on the season of the target species. It should be borne in mind that all sea fishing vessels operate in one day - a few days of fishing, but they do not exceed one week. The collection of random sampling of unsorted catches and landings takes place in fishing ports, fishing points and at sea on board the vessel. The samples are taken from the trawl, the pound net, the grid nets and the fixed longlines. The sampling schemes be organized in such a way that the sampling effort is distributed in proportion to the fishing effort. Relatively higher recovery over the course of the year involves greater sampling effort and vice versa. This will ensure that biological data directly corresponds to national landing statistics.

Scheme, strategies and sampling effort

1. Pelagic trawl fishing Planned number of PSUs:

- ◇ Sample collection on board the vessel: planned 10 vessel trips.
- ◇ Sample collection in the Constanta and Cape Midia Ports: planned 10 port day;

The objectives of the pelagic trawl sampling scheme included sampling of unsorted and retained catches, sampling and assessment of any species that were discarded into the sea (weight and number).

The sampling was done at sea and in fishing ports (Table 4A). Monthly sample collection has been provided on board the trawler vessel (1 trip) - 5 times a year and 6 samplings in ports when landing the catches.

In 2020, an **3 expedition** (trips) was made on board trawlers of 6-12 m (fishing effort: 35 days, 131 trawls, 131 hours and a catch of 3,624 kg, a productivity of 3,624 t / vessel, 0.103 t / trawl pelagic; 0,906 t / month; 0,104 t / day; 0,028 t / trawl, 0,028 t / hour), **6 expedition** (trips) on board vessels of 12-18 m (fishing effort: 8 vessels, 130 days, 288 trawls, 881 hours and a catch of 29,041 kg, a productivity of 3,630 t / vessel, 0,157 t / pelagic trawl, 7,261 t / month; 0,224 t / day; 0,101 t / trawl, 0,033 t / hour) and **2 expedition** (trips) on board vessel of 18-24 m (fishing effort: 1 vessel, 9 days, 72 trawls, 72 hours and a catch of 1,950 kg, a productivity of 1.95 t / vessel, 1.95 t / pelagic trawl; 0.216 t / day, 0.027 t / hour, 0.027 t / hour)

There were **10 trips** to collect samples in the ports of Constanta and Cape Midia, because in 2020, only 1 fishing vessels (12-18 m), practiced a specialized fishing with pelagic trawl.

The target species of pelagic trawl fishing was whiting, anchovy and red mullet. Also, during the surveys made during the implementation of the Program, the total catches taken on board the trawlers were recorded. During the expeditions no discarded catches were recorded. At the same time, samples were collected for biology studies and observations were made on the presence of marine mammals and birds in the area.

2. Beam trawl fishing Planned number of PSUs:

- ◇ Mangalia, Constanta and Cape Midia Ports- planned 56 trips;

- ◇ On board the vessel, planned 56 trips. Monthly sample collection was provided onboard the trawler and sample collections in ports when landing the catches.

There have been completed **75** demersal at-sea / vessel x trip and **56** demersal on-shore / port x day (landing ports) (Table 4A). In beam trawling, the target species was rapa whelk.

The large number of observations at sea was due to the participation of NIMRD researchers in the study pilot: *Level of fishing and impact of fisheries on biological resources and marine ecosystem, in specialized fishing for rapa whelk.*

On the sampling at sea, observations were made on the by-catches presence of fish, mammals, molluscs, crustaceans and birds in catches.

3. Pound net fishing Planned number of PSUs:

- ◇ fishing points in the southern part of the Romanian coast (Vama Veche - Agigea area): 13 planned trips to fishing points and 6 trips to fishing vessels;

- ◇ fishing points in the northern part of the Romanian coast (Constanta - Chituc area): 13 planned trips to fishing points and 6 trips to fishing vessels.

A number of **28** sampling trips (107.69 %) at landing points (14 planned trips in fishing points in the southern part and 14 planned trips in fishing points in the northern part) and 12 sampling trips at sea were carried out (6 trips to fishing vessels in the southern part and 6 trips to fishing vessels in the northern part) (Table 4A).

The same sampling of unsorted and retained catches was included, sampling of species for which stock variables are collected in Table 1A and 1D species. The species of fish sampled were anchovy, horse mackerel red mullet and sprat. The complementary catches (by-catch) were: Pontic shad, Caspian shad, turbot, sand smelt, garfish, gobies, dogfish, common stingray, thornback ray, common sole.

4. Gillnet fishing Planned number of PSUs:

- ◇ fishing points in the southern part of the Romanian coast (Vama Veche - Agigea area): planned 13 trips at fishing points x day and 6 vessel x trip;

- ◇ fishing points in the northern part of the Romanian coast (Constanta - Chituc area): - planned 13 fishing points x day and 6 vessel x trip.

The sampling scheme for fixed gillnet fisheries targeted demersal and pelagic species in a small-scale coastal fishery, including the similar sampling of captured catches and the collection of total catch data, effort (quantities, days at sea), catch composition, mesh size and fishing depth. Polyvalent activity is a common practice of small coastal craft, which means they are involved in different metiers, and, during daily exits at sea, they can fish on multiple metiers. The sampling was done at sea and in fishing ports (Table 4A).

Sample collection has been provided monthly on board the boats – 6 trips, vessel x trip in fishing points in the southern part and **6** trips vessel x trip in fishing points in the northern part (total 12 times a year) and by-monthly - **13** fishing points x day in the southern part and **13** fishing points x day in the north part (total 26 samplings) in ports when landing the catches. In gillnet fishing, the target species of commercial interest were turbot and Pontic shad, with complementary catches oh thornback ray, common stingray, knout goby, round goby, red mullet, and pelagic species: Danube shad, Caspian shad and horse mackerel. Catches retained on board the vessels were recorded by NIMRD observers at landing sites during research to assess the impact of turbot gillnets on cetaceans.

5. Fixed longlines, hooked lines and baited hooks fishing Planned number of PSUs:

- ◇ 6 fishing points x day (month) in fishing points of the Romanian coast.

Longline and hooked line fishing is representative for artisanal fisheries (vessels < 10 m), sample collection was made from fishing points along the Romanian coast. The main species in catches were mainly gobies and sometimes horse mackerel. Pursuant to the plan, 6 trips at fishing points were made. In fixed longlines, hooked and baited fishing the target species of commercial interest were horse mackerel and red mullet, with by-catches gobies spp. (Table 4A).

6. Manual harvesting of Rapa whelk Planned number of PSUs:

◇ 6 fishing points x day (month) in fishing points of the Romanian coast.

According to the plan, sampling was carried out at least once a month at fishing points along the Black Sea coast. In total, 6 trips to fishing points were made x day (Table 4A). The target only species was Rapa whelk.

For all fishing types, appropriate methods covering the fishing techniques specified in Table 4A have been used, including the species listed and according to the description of the sampling framework mentioned in Table 4B.

No thresholds will be applied, as specified in Chapter V of Implementing Decision (EU) 2019/910.

Deviation from the sampling plan according to Article 5 paragraph (3) of the Implementing Decision (EU) 2016/1701.

2. Deviations from the Work Plan

The deviations from the planned activities are related to the oversampling of commercial catches due to random collection from significant number of catches in terms of numbers, as the data collection did not imply additional costs and efforts of the technical team performed the sampling.

3. Action to avoid deviations

Text Box 5A: Quality assurance framework for biological data

General comment: This box is applicable to the Annual Report. This box fulfils Article 5 paragraph (2) point (a) of the Implementing Decision (EU) 2016/1701 on the format of the WP. This box is intended to specify data to be collected under Tables 1(A), 1(B) and 1(C) of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme. Use this box to provide additional information on Table 5A of the Annual Report.

1. Evidence of data quality assurance

The sampling design is documented in protocols, available in the responsible research institutes and in the annual report for the implementation of the Work Plan and in the reports for each survey. The reports from the research surveys and information about the methodologies are available at (<http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en>).

Sampling schemes are different from one metier to another and are designed to collect the best data and information needed for assessment. Biological data are collected from commercial vessels at sea and onshore, and are checked at the laboratory in order to detect errors and inconsistencies and eventually recorded in data bases ad hoc. In market sampling this framework includes several year visits to samplers in ports and monthly information to allow a better reaction in case fishery or ports dynamics affects the sampling. Biological data are always collected onboard, due to the processing of the target species, as well as retained species length data. Sampling levels and data quality are considered adequate, based on experience and DCRF requirements, following quality levels, and the agreements achieved in the RCM meetings.

There are rules for Data Quality Control (DQC) and Data Quality Assurance (DQA), including all steps of marine data collection and analysis - from sea expedition to final reporting. For example, all data, collected in the sea, are included in protocols and checked by two different persons for mistakes (scientist and expedition leader) and all samples are numbered and identified by given rules. If any corrections are needed, they are presented in separate protocols, controlled by two scientists. Scientific data are kept in databases and in xls files.

Specific technical reports are prepared every six months and on yearly basis, regarding evolution of the main parameters of the stock, biomass assessments, catch projections, size, age composition, maturity, physical condition etc. and are kept on two different computers, with copies on CD and flash memories.

2. Sampling design

Not applicable.

3. Sampling implementation

Not applicable.

4. Data capture

Not applicable.

5. Data Storage

Not applicable.

6. Data processing

Not applicable.

Text Box 5B: Quality assurance framework for socioeconomic data

General comment: This box fulfills Article 5 paragraph (2) point (b) of the Implementing Decision (EU) 2016/1701 on the format of the WP. This box is intended to specify data to be collected under Tables 5(A), 6 and 7 of the Annex of the Delegated Decision (EU) 2019/910 on the multiannual Union programme. Use this box to provide additional information on Table 5B of the Annual Report.

1. Evidence of data quality assurance

There were no changes in the type of data collection scheme or the data sources in the sampling year. The same quality assurance framework is applied to all sectors and all data collection schemes, since each sector (Fishing fleet, Aquaculture, Fish processing) are with census data collection scheme.

The methodology for data collection of transversal and socio-economic variables for the fleet, aquaculture and processing is available at the following link:

<http://www.rmri.ro/Home/Publications.Other.ANPA.html?lang=en> under Materials and Methods section – the file name is ‘Description of the methodology used for data collection in Romania.

In accordance with the obligations regarding different data that should be reported to other bodies in the EC, e.g. Eurostat (the annual methodological report on data collection and management of statistics on national fisheries), the exhaustive method was applied covering 100% of the vessels registered in the FRF for all segments of the fleet. The questionnaires completed with the requested economic data are analysed by the NIMRD specialists, by groups of variables, reporting from a percentage point of view the expenses at the level of the income obtained by each economic agent, respectively their comparative reporting at the level of the expense / income ratio obtained in the previous years with the strict observance of the correlation of the economic variables in table 5A EU-MAP by ship segments and fishing techniques, fishing effort, etc. Thus, the process of controlling the primary data consist of the following stages: identification of the extreme values from the absolute values; identification of extreme values from average values; cost structure evaluation and comparison with baseline data.

The primary economic data provided by the economic operators through questionnaires can be cross-checked with other sources of activity-related data, VMS, balance sheet data or balance sheet data submitted by them on the website of the Ministry of Public Finance.

In the event that there are any uncertainties regarding the value of some economic indicators, the data providers (accountants or administrators of the economic agents) are contacted in order to make clarifications or corrections if necessary.

Regarding the verification of the accuracy of the data regarding the landing situations, there is the possibility to re-validate the data sheets with the sales notes and the transport notes. The estimation of the average price for each commercial species is made by calculating the weighted average based on the prices recorded in the sales notes issued by the first sale centres for each landing made by the economic agents.

After a thorough verification, the data is centralized and processed according to the requirements of the external users and uploaded on their platforms, in the requested formats, according to the schedules. The same procedure will be applied also for the social variables, so after completing the questionnaires with all social indicators according to table 6 EU-MAP by each economic operator, they are taken over with the support of NAFA by NIMRD "Grigore Antipa" who after a thorough verification of the data [cross-comparison of the data from the questionnaire with those from other sources of collection / information such as the logs of coastal and marine fisheries, fishing authorizations, interviews with fishermen on the ground (fishing points or in fishing areas), respectively the comparative reporting of the level of size, compared to the level of data collected in previous years , proceed to the next stage of analysis / processing with strict observance of the correlation of each social variable by segment of vessel and fishing techniques.

The same procedure is applied in the aquaculture and processing sector where, after completing the questionnaires with all socio-economic indicators according to tables 6, 7 and 11 EU-MAP, by each economic operator, they are taken with the support of NAFA by the IRDFAEFA specialists (Research and Development Institute for Aquatic Ecology, Fisheries and Aquaculture) which after a thorough verification of data [cross-comparing questionnaire data with those from other sources of collection /

information such as: operating authorizations, register of aquaculture processing units registry, reports and records from National Agency for Fiscal Administration and the Trade Registry, interviews with personnel engaged in aquaculture and processing activities, respectively a comparison with data reported in previous years], proceeds to the next stage of analysis / processing. The control of the primary data will consist as in the previous case when identifying the extreme values from the absolute values, identifying the extreme values from the average values, evaluating the cost structure and comparing with the reference data.

2. Section P3 - Impartiality and objectiveness

It's not necessary

3. Section P4 - Confidentiality

It's not necessary

4. Section P5 - Sound methodology

It's not necessary

5. Section P6 - Appropriate statistical procedures

The contract for the implementation of NAFA's integrated database is currently in the process of being installed.

6. Section P7 - Non-excessive burden on respondents

It's not necessary

7. Section P8 - Cost effectiveness

We are mentioning that the public acquisition for the conclusion of the contract on integrated database, as legal procedure, is ongoing, actually

8. Section P9 - Relevance

It's not necessary

9. Section P10 - Accuracy and reliability

It's not necessary

10. Section P11 - Timeliness and punctuality

It's not necessary

11. Section P12 - Coherence and comparability

It's not necessary

12. Section P13 - Accessibility and Clarity

The program database is stored separately on a secured server of National Institute for Marine Research and Development *Grigore Antipa* Romania (NIMRD) - <http://cdp.rmri.ro/pncd/index.html>