

**National Marine Fisheries Research Institute, Gdynia, Poland**

**Regulation (EU) 2017/1004 of the European Parliament and of the  
Council of 17 May 2017**

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

**Commission Delegated Decision (EU) 2021/1167 of 27 April 2021**

establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors from 2022

**Commission Implementing Decision (EU) 2021/1168 of 27 April  
2021**

establishing the list of mandatory research surveys at sea and thresholds as part of the multiannual Union programme for the collection and management of data in the fisheries and aquaculture sectors from 2022

**Commission Implementing Decision (EU) 2022/39 of 12 January  
2022**

laying down rules on the format and timetables for the submission of national work plans and annual reports for data collection in the fisheries and aquaculture sectors, and repealing Implementing Decisions (EU) 2016/1701 and (EU) 2018/1283

# **Poland Annual Report on data collection in the fisheries and aquaculture sectors**

2023

Version 1.0

Gdynia, 31 May 2024

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## SECTION 1: GENERAL INFORMATION

### Data collection framework at national level

*General comment: Use this text box to describe how data collection is organised in your Member State (institutions involved, contact information) and in which regional coordination groups (RCG) your Member State participates.*

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

Based on the DCF Regulation, the Polish Fisheries Act includes a statutory delegation for the minister in charge of fisheries to designate the institution responsible for implementation of the EU multi-annual program for fisheries data collection. In the regulation issued on the basis of this statutory delegation, the minister responsible for fisheries appointed the National Marine Fisheries Research Institute (NMFRI) to implement the DCF program.

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

#### **1. The Fishery Department of the Ministry of Agriculture and Rural Development (MRiRW).**

Address:

Wspólna 30  
00-930 Warszawa, Poland

Contact

Secretariat: tel. +48 22 583 89 00; fax: +48 22 583 89 01; e-mail: [sekretariat.dr@minrol.gov.pl](mailto:sekretariat.dr@minrol.gov.pl)

Role

Comprehensive supervision of the implementation of the fisheries policy with regard to marine and freshwater fisheries and aquaculture.

#### **2. National Marine Fisheries Research Institute (NMFRI)**

Address:

Kołtataja 1  
81-332 Gdynia, Poland

Contact

Secretariat: tel. +48 58 73 56 232; fax: +48 58 73 56 110; e-mail: [sekretariat@mir.gdynia.pl](mailto:sekretariat@mir.gdynia.pl)

Role

Implementation of the EU multi-annual program for fisheries data collection since 2005.

**National Correspondent:**

Ireneusz Wójcik (NMFRI); tel. +48 58 73 56 232; e-mail: [iwojcik@mir.gdynia.pl](mailto:iwojcik@mir.gdynia.pl)

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

<https://dcf.mir.gdynia.pl/>

(max. 1000 words)

### Text Box 1b: Other data collection activities

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

#### 1. Aim of the data collection activity

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

#### 2. Duration of the data collection activity

01/01/2023 – 31/12/2025

#### 3. Methodology and expected outcomes of the data collection activity

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

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

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

#### Overall expected outcomes

- ✓ A full-time dedicated Secretariat support service for the RCGs enables a consistent approach to administering RCG activities, facilitates communication, and enhances the intersessional work, supporting also the work of sub-groups.
- ✓ A dynamic and permanently updated website will be kept available, including as features as:
  - Integration – allowing seamless synchronization with third-party information needs and requests.
  - Responsive display – to serve content across multiple devices, screens, and browsers.

- User experience- maintaining a satisfactory user experience throughout the website sections.
- Accessibility – To any interested visitor in a user-friendly way across the website sections.
- Retention- keeping visitors coming back to the website.
- Links to relevant restricted access sites and virtual environments.
- ✓ The Visual identity for the RCGs is increasingly consolidated and visibility and understanding of the work by the RCGs is enhanced for the relevant stakeholder groups.
- ✓ A regularly updated Stakeholders’ database improves the communication function among the RCGs’ experts and the stakeholders’ community.
- ✓ Internal communication protocols and help-desk in place makes it easier for any new comer to efficiently join, adopt responsibilities, and contribute to the RCGs objectives and work commitments.
- ✓ The public description of the secretariat functions, operational working protocols and commitments will build trust and enhance the whole network transparency and accountability.

*(max 900 words per activity)*

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

The organizational structure and rules of operation of the RCGs Secretariat have been agreed by the end of February 2023.

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

The organizational structure and rules of operation of the Secretariat have been agreed. The issue of the stability of the Secretariat's financing in the coming years remains to be resolved.

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

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

Poland co-financed the RCGs Secretariat services in 2023 on the basis of "Service Offer Acceptance Form" signed between NMFRI and CETMAR on 7th December 2022.

*(max. 900 words per study)*

## SECTION 2: BIOLOGICAL DATA

### Text Box 2.1: List of required species/stocks

#### **Region: North Sea and Easter Arctic**

*General comment: This text box fulfils Article 5(2)(a), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 2.1(a) of the EU MAP Delegated Decision annex. This text box applies to the annual report and complements Table 2.1.*

#### Deviations from the work plan

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

*The general reasons for deviations from the work plan in terms of planned vs. achieved data collection should be summarised in this section, while detailed comments on deviations on particular species/stocks should be included in the 'AR comments' column in Table 2.1.*

No sampling performed in 2023. There was only one vessel operating in this area and targeting demersal species, operating from outside of Poland. This vessel was sold in 2022 and permanently withdrawn from this fishery.

#### Actions to avoid deviations

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

No action needed.

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

#### **Region: Other regions - CECAF**

*General comment: This text box fulfils Article 5(2)(a), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 2.1(a) of the EU MAP Delegated Decision annex. This text box applies to the annual report and complements Table 2.1.*

#### Deviations from the work plan

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

*The general reasons for deviations from the work plan in terms of planned vs. achieved data collection should be summarised in this section, while detailed comments on deviations on particular species/stocks should be included in the 'AR comments' column in Table 2.1.*

Based on a multilateral agreement between DEU-LTU-LVA-NLD-POL, Poland is coordinating joint sampling program for biological data collection on board EU fishing vessels engaged in the fishery for small pelagic fish in the CECAF area (Central-East Atlantic). See Table 1.3 and Annex 1.1 - CECAF at sea sampling for details)

No sampling performed in 2023 due to lack of space for observer on board the vessels.

#### Actions to avoid deviations



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

According to multilateral agreement, joint (EU) sampling programme in CECAF is organized and executed by NMFRI (POL). The lack of space on board the vessels is a factor beyond the Institute's control. Nevertheless, the NMFRI is in constant contact with operators of EU vessels active in the area and constantly attempts to send observers to carry out sampling.

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

## Text Box 2.2: Planning of sampling for biological variables

### Region: All regions

*General comment: This text box fulfils Article 5(2)(a), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 2.1(a) of the EU MAP Delegated Decision annex. This text box applies to the annual report and complements Table 2.2.*

Deviations from the work plan

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

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

No deviation from WP.

Actions to avoid deviations.

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

NA

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

## Text Box 2.3: Diadromous species data collection in freshwater

*General comment: This text box fulfils Article 5(2)(a), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter II point 2.1(b) and point 2.3 of the EU MAP Delegated Decision annex. Use this text box to give an overview of the methodology used to collect data from freshwater and inland commercial and recreational fisheries for salmon, sea trout and eel. Also include overview of data to be collected from research surveys on salmon, sea trout and eel in freshwater, and on eel in any relevant habitat including coastal waters.*

Method selected for collecting data.

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

**European eel**

Already since 2010 WGEEL has been indicating the need of an assessment of biomass and mortality indicators in management as well as scientific reference points to ultimately result in a scientific advice framework that works in line with the ICES precautionary approach. The sampling design will provide relevant data for biomass assessment to WGEEL to perform the approach for international stock assessment.

**As required by DECISION (EU) 2021/1167** data collection for two Polish EMU's (Oder and Vistula) will consist of:

- catch quantities derived from inland commercial and recreational fisheries

In order to collect relevant data, special questionnaires will be developed and sent to a representative group of fishing operators. These will be mainly fishing companies and districts of the Polish Angling Association (PAA), as well as individual natural persons (individual fishermen), national parks, fishing associations and other entities. Based on expert knowledge, the collected sample will represent the most important entities operating in the fisheries sector in Poland. Catch estimates are provided each year following the data call of ICES Working Group on Eels (WGEEL). Quality of the data provided are discussed and verified during the group meetings.

- biological variables

Samples will come from fishing from lakes and rivers in northern Poland. It is planned to collect a total of 500 eel individuals and determine variables such as age, length, weight, sex and life stage.

- the abundance of recruits – catch data obtained from eel ladder in Slupia river, data on stocking from statistical questionnaires and resellers.

Based on the research from 2016-2020, the natural recruitment of eels to Polish waters is negligible. It was decided to use one eel ladder on the border of Vistula and Oder EMU. Recruitment rates will be mainly derived from data on restocking with ongrown eels.

- the abundance of the standing stock – calculated by mathematical modelling, supplemented by data from scientific non selective fyke nets set in lagoons and lakes.
- the number of emigrating silver eels will be calculated by mathematical modelling.
- the stock dynamics of eel for both EMU's is estimated using a version of CAGEAN model (Deriso et al., 1985), described in the Polish Eel Management Plan. Data will be delivered to WGEEL annually.

### **Salmon and sea trout**

Data about volume of commercial catches will be obtained from special questionnaires. Stock related variables will be collected during monitoring of commercial catches and landings. Biological data are stored on the protocols and in the excel file. Digitized data are cross checked to avoid errors. It is planned to collect 100 samples of sea trout. Salmon catches are incidental and there is no fishery targeting these species.

Fishing for sea trout and salmon parr will be carried out using the electrofishing method. On their basis, the density of salmon and sea trout fry in individual age classes will be estimated. The research fishery will be carried out in 11 rivers of northern Poland, in at least 41 positions

located in the areas of the spawning grounds of sea trout and salmon. The result of the work should be a set of data required by the WGBAST working group.

Number of ascending individuals of sea trout and salmon will be recorded by automatic counters. Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Słupia, Drawa, Rega, Parsęta. The device is recording among others time data, water temperature, fish direction, fish length and short video sequence of particular fish. The compatibility of recorded data are additionally verified by visual checking and any false signals are removed from the database.

### **Recreational catches of salmon and sea trout inland waters**

Sea trout is an important angling goal in the coastal rivers. The majority of rivers of this area are located within the Polish Angling Association (PAA) usage range. Currently, the only source of information on the level of angling catches is catch registers maintained by individual PAA districts. However, the data obtained from the records are incomplete. This is due to the different level of recovered records in individual districts, the lack of information on catches of visiting anglers and the problem of reliability of data entered into registers. The aim of the monitoring is to implement a set of actions enabling gathering and development of reliable data on angling catches of sea trout and salmon in the selected rivers of the northern Poland.

The survey covers all year except closed season (October-December).

Three rivers of different size have been selected for a monitoring, i.e. Słupia, Rega, Łeba, Parsęta which are the Pomeranian rivers (SD 25), and the Ina river that belongs to the Oder catchment area (SD 24). They are all mixed sea trout rivers, where sea trout is also the main object of angling activity. The protection period for sea trout lasts from 1 October to 31 December. The sea trout angling in Poland is focused mainly on catching kelts (January–March). Apart from this period, the months of increased pressure are September and the turn of June and July.

The methodology of estimating the angling catches will be based on the following elements:

- Analysis of catch records from the PAA districts of the analyzed rivers. Since the access to data is shifted in time, the time of processing results falls for the next year. The analysis of the registers must provide such information as: number of registers issued, number of registers returned, share of full and partial licenses, reported number of sea trout and salmon.
- Confrontation of angling data with information obtained from automated meters (Słupia, Parsęta and Ina - Riverwatcher) and data from the catch points (Rega and Słupia).

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting

*(max 250 words per species and area)*

Were the planned numbers achieved? Yes/ No

No for:

*Salmo trutta*, *Salmo salar* - counter\_diad, Slupia river

Due to the damage the counter stopped working at the peak of the season, therefore the data for 2023 is not representative. The purchase procedure for a new counter is currently in progress. The new counter is scheduled to be launched in September 2024.

Oversampling for:

*Salmo trutta*, commercial\_diad

Data was collected from all fish caught in the traps. The fish were released after taking measurements and removing few scales, no impact for the stock occurred.

Undersampling for:

*Salmo trutta* and *Salmo salar*. Diadromous (recreational)

There was a total fishing ban on one of the rivers in 2022, but it has recently reopened to fishing, new data will be available from 2024.

On another river, the statistics kept by the water owner turned out to be unreliable, therefore the data will not be included in the WP revision.

*(max 250 words per species and area)*

#### Text Box 2.4: Recreational Fisheries

##### **Region: Baltic Sea**

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

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

##### **Recreational fisheries for diadromous species**

The aim of the monitoring is a development of a current map of the Polish Exclusive Economic Zone with spatial and temporal distribution of salmon, sea trout and eel recreational fisheries by species and fishing techniques. Depending on the target species and fishing techniques used, the monitoring should cover time period from late autumn to late spring in order to determine areas and time with highest recreational fisheries activities and to provide a reliable monitoring data for estimates of fishing effort as well as catch volume and composition for recreational fisheries for salmon and sea trout.

One module is dedicated to monitoring of recreational fisheries of salmon and sea trout conducted at sea with the use of trolling technique (trolling boats – salmon and sea trout).

There are two basic categories of trolling boats active in this fisheries:

Commercial boats, for which the recreational fishery is an official commercial activity. Such boats take on board up to 4-6 recreational fishermen who are fishing under the interim or full-year permit/license purchased by the boats' owners and other boats, taking occasionally on board recreational fishermen holding individual fishing permits.

Five main methods will be applied to monitor the composition of the fleet engaged in the recreational fishery and fishing effort:

- remote CCTV cameras installed in ports identified as the most important for salmon and sea trout recreational fishery (Hel, Gdańsk - Górkki Zachodnie). The cameras record boat movements between 04:00 and 18:00 each day. A high image frame rate; Full HD format (25 images per second) is set to ensure full coverage of the activity at each monitored marina and correct identification of trolling boats. Taking into account the capacity of cameras hard drives, data from them should be downloaded to the NMFRI server at three-month intervals;
- monthly on-site questionnaire interviews. Trolling boats are randomly sampled from both groups; commercial recreational boats and private fishing boats. The number of interviewed boats is selected randomly. The App dedicated to the survey is used by the observers. The refusal rate is recorded. The number of anglers on boat and fishing rods are recorded in the protocol. In addition, sociological data are collected;
- annual off-site questionnaire interviews. An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species.;
- onboard observations – observers' participation in trolling cruises (one trip per month). The biological samples (length, weight, sex, age, maturity stage) and catch composition are collected. Scales samples are collected from each fish and stored in the paper envelopes. The GPS position is recorded three times during the trip (start, middle and end of fishing). In addition, number of anglers on boat and fishing rods are recorded in the protocol. If bycatch occurs during at sea sampling data on bycatch are collected. Directly after each trip, collected data are digitized in the Excel file. In addition, paper protocols are stored;

The use of remote CCTV cameras for monitoring of recreational salmon trolling fishery effort revealed that remote cameras proved to be a cost-efficient method providing accurate fishing effort estimates helping to reduce bias in recreational catch estimates. On-site as well as off-site questionnaire interviews appear to be method delivering data of high quality. Onboard observations at sea, on-site interviews and data collected through the CCTV cameras will serve to verify the reliability/accuracy of the catch volumes estimates based on the off-site questionnaire interviews..

Other module - the monitoring of coastal recreational fisheries of sea trout and eel from the shore with the use of fishing rods will be conducted with the use of method listed below. The duration time cover the period from late autumn to late spring (sea trout) and from late summer to early autumn (eel).

- Sea trout and eel - off-site questionnaire interviews. An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis of diadromous fish species;
- Sea trout and eel – on-site questionnaire interviews covering the period from late autumn to late spring (sea trout) and from late summer to early autumn (eel). Remark: In case of eel, pilot study conducted revealed that on-site questionnaire interviews meet the difficulty/impossibility of distinguishing anglers targeting eel from total number of anglers interviewed. Data on bycatch is collected, whenever recorded or reported.

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

### **Cod recreational fishery**

In Poland there is a dedicated fleet segment of private boats and registered charter boats adapted to cod recreational fishery – angling with fishing rods (LHP). For the purpose of sampling this segment under DCF, the Primary Sampling Unit is vessel/trip and the target population was defined as the total number of recreational sea-going trips targeting cod. The size of this target population varies between years with decreasing trend over the last years. Each year, a 24 randomly sampled fishing trips were monitored.

The recreational fishery for cod (*Gadus morhua*) in Poland is monitored using effort information (number of angling trips in sampling frames - ICES Subdivision and quarter) provided by Harbour Master Offices and mean weight of cod per trip in the given sampling frame calculated from on-board observed trips.

Four types of data were collected in order to monitor the development of *Gadus morhua* recreational fisheries and to estimate the catch level.

1. Data on the number of recreational sea-going trips and the number of anglers participating at those trips were collected from Harbour Master Offices' registers. Data on bycatch is collected, whenever recorded and reported.
2. Data on total weight of fish caught and biological data (length, weight, sex, maturity and age) were collected and processed from angling trips with observers on-board. If bycatch occurs during at sea sampling data on bycatch is collected
3. Daily reports of recreational catch delivered until 2018 to regional inspectorates of marine fisheries and from 2019 to General Inspectorate of Marine Fisheries by owners of charter boats (mandatory catch reporting since March of 2015).
4. Interviews with anglers (questionnaires' survey) during on-board observer trips.

Data on number of recreational sea-going trips and the number of anglers participating at those trips collected from Harbour Master Offices' registers are the comprehensive data source on marine recreational fisheries status. Each angling vessel's departure, including number of anglers on-board, is recorded in Harbour Master Offices' documents. Data on number of recreational fishing trips in the given year ("N") can be collected from Harbour Master Offices during the following year ("N+1").

Main purpose of on-board observed trips is to measure the length and weight of each fish caught in order to determine catch composition and the whole catch of fish during given trip (the catch is also sampled for other biological data - sex and age). This allows for estimating the total catch applying raising method by number of trips recorded by Harbour Master Offices. In order to obtain uniform coverage of biological data sampling over the year and by ICES Subdivision, the number of planned observed sea-going trips in 2022-2024 is 6 observed trips in each quarter (2 observed trips per month). Selection of trips to observe is not random but is based on the availability of space onboard with the purpose of having uniform coverage of ICES SDs.

*(max 900 words per region)*

### **Deviations from the work plan**

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

Due to high refusal rate within trolling boat skippers reported in 2023, a self-sampling using the annual fishing logbook was not conducted.

Action to avoid deviations

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

The increasing trend in refusal rates observed in recent years has led to the abandonment of this monitoring method because it is unreliable.

*(max 900 words per region)*

### Text Box 2.5: Sampling plan description for biological data

#### **Region: Baltic Sea**

*General Comment: This text box fulfils Article 5(2)(a) and (b), Article 6(3)(a), (b) and (c) of Regulation (EU) 2017/1004 and Chapter 2 point 2.1(a) of the EU MAP Delegated Decision annex. This text box complements Table 2.5.*

*Additional information on sampling schemes*

#### **Baltic at sea, Baltic on shore**

At sea sampling is considered to be the most reliable data source on all catch fractions including landings, discards and BMS, as well as bycatch of PETS. In the period covered by the previous work plan, which is from 2020 to 2021, a combined sampling scheme for at sea and on shore sampling was implemented. Sampling at sea was assumed to have a higher priority over sampling on shore, which was only conducted when there was no possibility to have a scientific observer on board. Following the recommendations from STECF EWG 21-09, separate sampling schemes for at sea and on shore sampling are defined in the work plan for the period 2022-2024. The analysis of the number of trips per observation type from the last few year was performed in order to determine the planned number of trips for both sampling schemes. Figure 1 shows the percentage shares of the number of sampled trips by vessel length categories and observation types from the period 2017-2020.

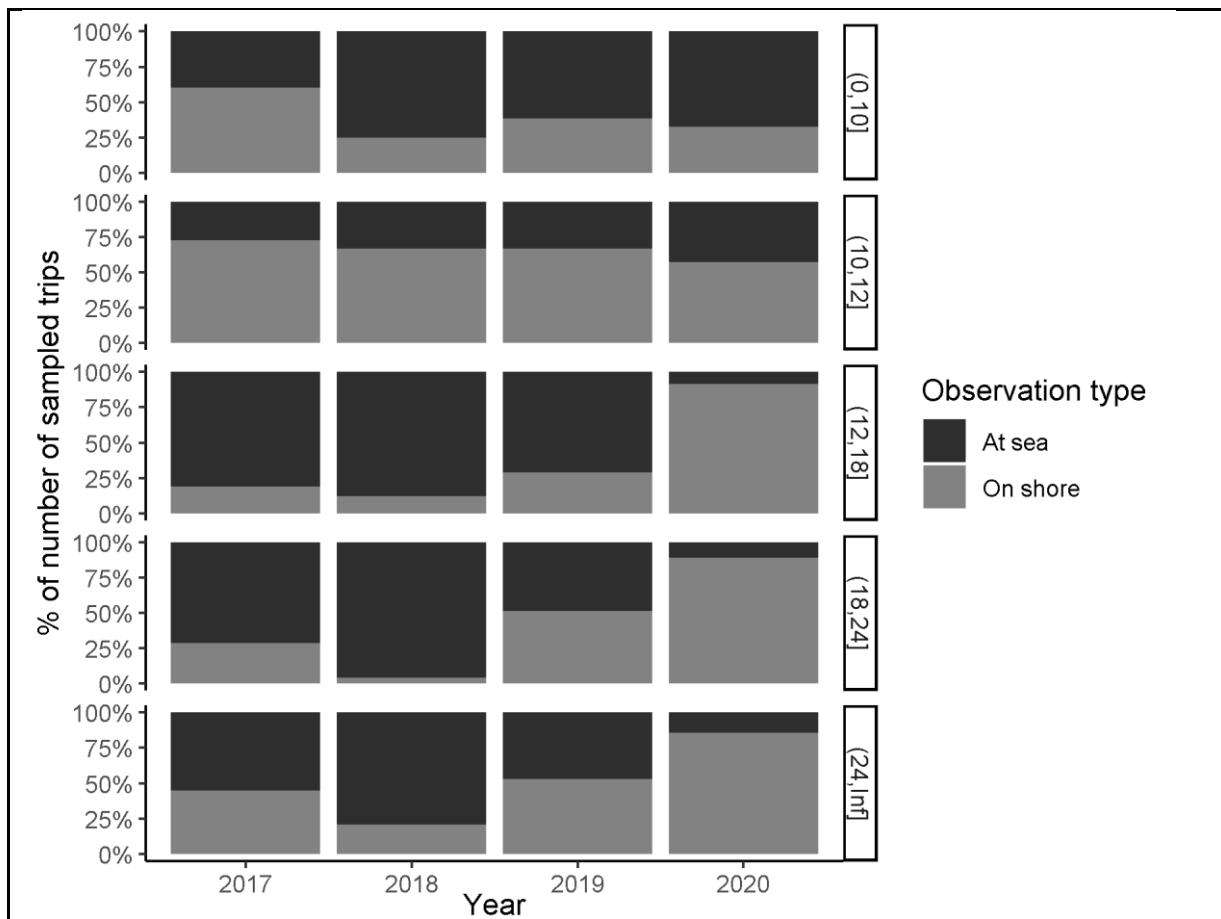


Figure 1. Sampled trips by vessel length categories.

In many cases the number of sampled trips per observation type is not stable over the years (in the last two years mainly because of the covid-19 pandemic). Therefore, it was decided to divide the total number of planned sampled trips equally between at sea and on shore schemes. Once the results from the first implementation year are available, it will be decided if the share of the number of sampled trips by observation type needs to be adjusted.

The primary sampling unit applied in the sampling program is vessel\*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance. An important element related to the stratification of primary sampling units is to avoid PSU being included in many groups. Therefore, vessel length categories were selected to define stratification groups. Such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the vessel length categories defined in the sampling plan are related to different types of fisheries, which can be seen on the figure 2.



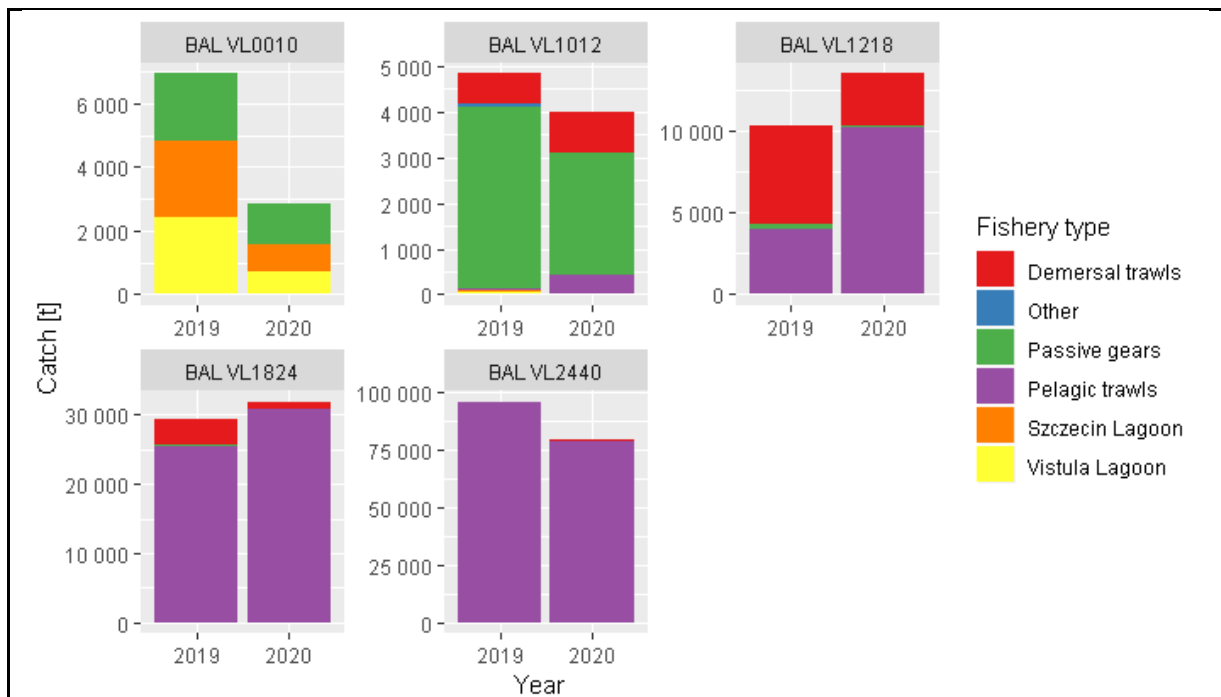


Figure 2. Catches by vessel length categories and fishery types in the Baltic Sea

For each group of PSUs, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. These values were used as factors to allocate the planned number of sampled trips between groups of PSUs and quarters. Groups related to small scale fisheries have relatively high number of trips and low catch weight, unlike larger vessels. Therefore, both effort and catches are used to cover all PSU groups with a sufficient number of planned sampled trips.

The total number of planned sampled trips were split across all groups and quarters. 50% of the total number of planned sampled trips were allocated to groups and quarters proportionally to the average annual number of fishing trips from the period 2018-2020. The remaining 50% of the total number of planned sampled trips were allocated to groups and quarters proportionally to the average annual catches from the period 2018-2020. The numbers of planned sampled trips per groups of vessels and quarters is presented in the figure 3.

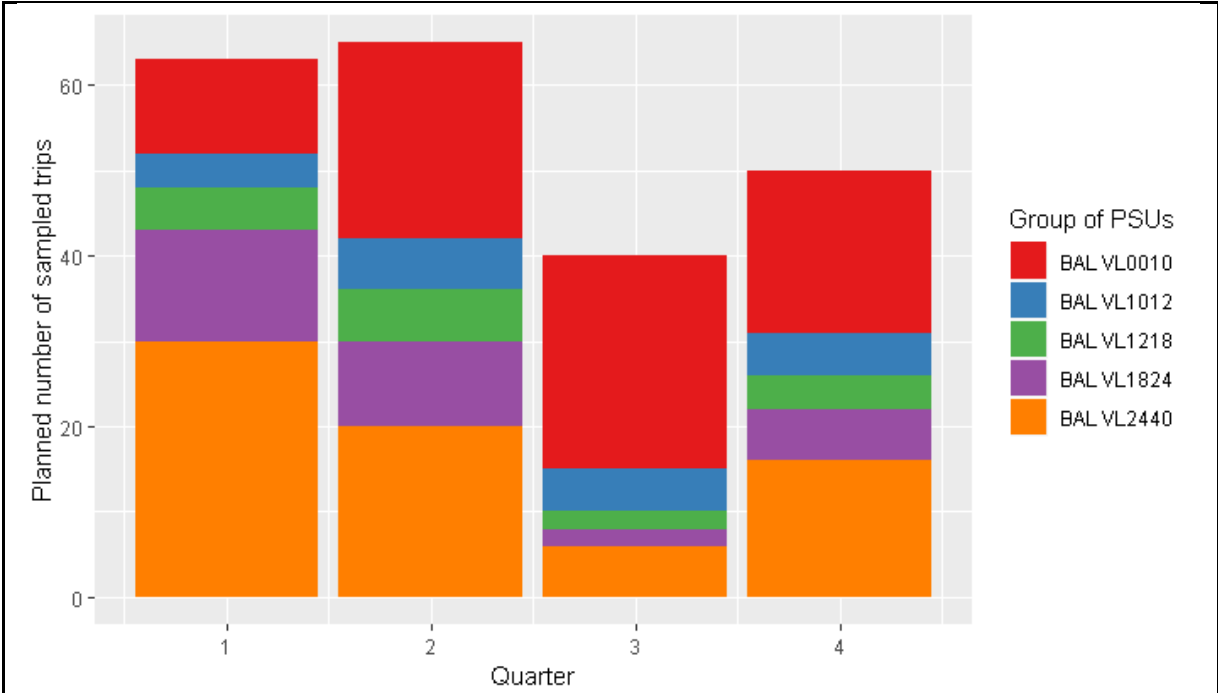


Figure 3. Planned number of sampled trips

Based on the designed sampling plan, a simulated selection of vessels and trips was conducted using the data from 2019. It was decided not to use data from 2020 for the simulation because data from that year may not be representative enough due to covid-19 pandemic as well as fisheries closures related to the condition of Baltic cod. The list of PSUs consists of all vessels active in 2019. Unequal probability sampling with replacement was applied to draw vessels from the list. The probability of a vessel being selected is determined by an average annual catches from the period 2018-2020. In the second step, trips were selected using simple random sampling without replacement. Major fishery types were identified. The results of the simulated selection of PSUs are shown in the figure 4.

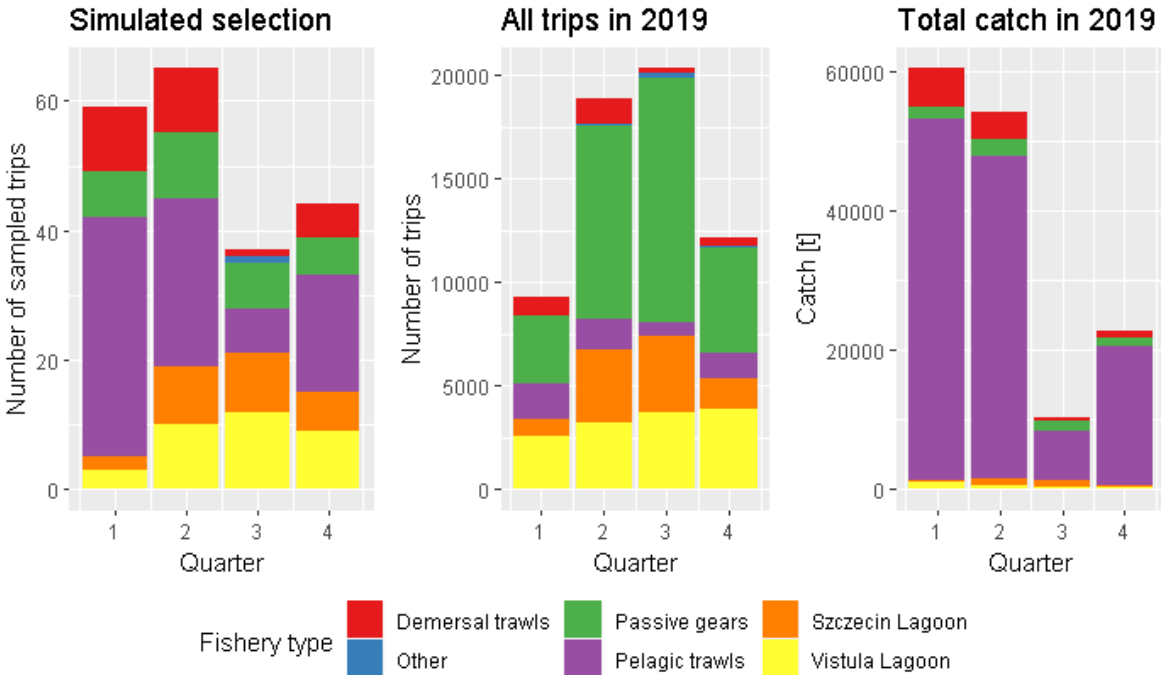


Figure 4. Results of the simulated selection of trips by the types of fisheries

The results of the simulation allow to assume that the selection of PSU based on the designed sampling plan will sufficiently cover major types of fisheries.

Self-sampling of small pelagic's in the Baltic

The sampling scheme is described in the Annex 1.1. The frequency of sampling results from the methodology agreed on the RCG ISSG “Case study of fisheries for small pelagic’s in the Baltic”. The sampling is planned on a monthly basis and is limited to the first quarter only. In 2022 this sampling scheme will continue as part of the Baltic small pelagic Regional Sampling Plan (RSP), as decided by NC at the 2021 RCG Decision Meeting.

*Additional description of sampling frames*

BAL VL0010 - Baltic vessels under 10 meters in length.

The largest group, which consists of small boats using passive gears, fishing mainly in lagoons and coastal waters.

BAL VL1012 - Baltic vessels between 10 and 12 meters in length.

The group consists of small vessels using mainly passive gears and, to a lesser extent, bottom trawls.

BAL VL1218 - Baltic vessels between 12 and 18 meters in length.

The group consists of vessels using mainly active gears, targeting both pelagic and demersal species.

BAL VL1824 - Baltic vessels between 18 and 24 meters in length.

The group consist of vessels fishing mainly with pelagic trawls and, to a lesser extent, bottom trawls.

BAL VL2440 - Baltic vessels between 24 and 40 meters in length.

The group consists of the largest pelagic trawlers having the highest catches.

Pelagics pilot - Baltic vessels fishing for small pelagic's

The group consists of vessels which were active at least once in the period February-April 2020, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m.

Deviations from the work plan

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

The achieved number of PSU collected in all strata was being monitored quarterly throughout the whole year. If execution of the plan in a given quarter was poor, then opportunistic selection of missing PSUs (expert’s selection) was carried out in the second half on that quarter. Despite the above mentioned action, still some obstacles in collecting the samples were encountered in 2023.

In the WP it was assumed that the total number of PSU would be divided equally between at-sea and on shore schemes. This aim has been achieved for one sampling frame: BAL VL1218. For BAL

VL0010 and BAL VL1012, more samples were collected at sea (due to expert selections targeting freshwater species or seasonal fisheries targeting garfish in May-June), than on shore. The opposite was the case for BAL VL1824 and BAL VL2440, fewer samples were collected at sea than on land. There are many different reasons for refusing to accept an observer on board (reluctance to cooperate, inactive vessels, fishing ban, lack of fishing quota).

Sampling results divided into at-sea and onshore schemes were reported for the first time in 2022 as a result of the STECF recommendation:

*“When drafting your WP, please consider the following recommendations from STECF EWG 21-09 that assessed the 2020 AR:*

*Table 2.5 (former 4A):*

*1. The planned sampling frame should be broken down by scheme; do not combine at-sea and on-shore planned sampling into a single scheme, they should be reported in separate lines.”*

This is currently a split for reporting purposes only, as in practice our sampling program is not split between at-sea and on-shore sampling. This is a division that was used in the early years of random sampling and unfortunately it did not work.

In Table 2.5 in the columns with the number of PSUs and the number of units, the same values are given for the at-sea and on-shore schedules, because it is not possible to separate trips and units for these two schedules.

Regarding BAL VL1824 and BAL VL2440 frames, low execution and very high fishing activity refer to the at-sea scheme. However, in order to have a complete picture, the on-shore scheme for these groups should also be considered.

If results in 2023 were reported in the same way as in previous years (before separating schemes for at-sea and on-shore), i.e. in total, then the performance would be at a higher level than in previous years: BAL VL1824 2021 - 36.36%, 2022 - 43.75%, 2023 – 46.88%; BAL VL2440 2021 - 38.89%, 2022 - 27.78%, 2023 - 69.44%. A comprehensive explanation for the low performance in the BAL VL1824 and BAL VL2440 groups is given below.

According to the sampling design, all contacts with the owners of vessels selected for sampling fishing trips in each stratum, as well as refusals and reasons for refusals were recorded in a dedicated register.

The methodology used to determine the refusal rate was based on the one used by the ICES Study Group on Practical Implementation of Discard Sampling Plans (SGPIDS).

*“As defined during SGPIDS 2 (ICES 2012a) the refusal rate in the fisheries context is the proportion of skippers who, having been successfully contacted ultimately failed to allow the observer to go on board to obtain the sample. This refusal rate is calculated as the number of industry refusals divided by the number of sequential selections or approaches where contact was successfully made. This refusal rate provides an indication of the industry reaction to the observer programme and is a useful measure of their cooperation.”* (ICES. 2013. Report of the Study Group on Practical Implementation of Discard Sampling Plans (SGPIDS), 24 June – 28 June 2013, Lysekil, Sweden. ICES CM 2013/ACOM:56. 142pp.)

Refusal rates and non-response rates are presented in the table below. The methodology to calculate the rates was the one described in SGPIDS report.

Year	Group code	Refusal	Drawn and successfully contacted	Refusal rate [%]	Non-response	Drawn	Non-response rate [%]
2023	<10	5	43	11.63	43	81	53.09
2023	10-<12	0	5	0.00	17	22	77.27
2023	12-<18	8	14	57.14	16	22	72.73
2023	18-<24	14	25	56.00	70	81	86.42
2023	24-<40	37	85	43.53	132	180	73.33
2023	Pelagics_pilot	8	20	40.00	18	30	60.00

For two groups (<10, 10-<12) there is relatively small refusal rate and high non-response rate. The reason for that is mainly by inactive vessels (82.6% in <10, 64.3% in 10-<12) and in some cases fishing ban, vessels in repair or withdrawn from the fishery.

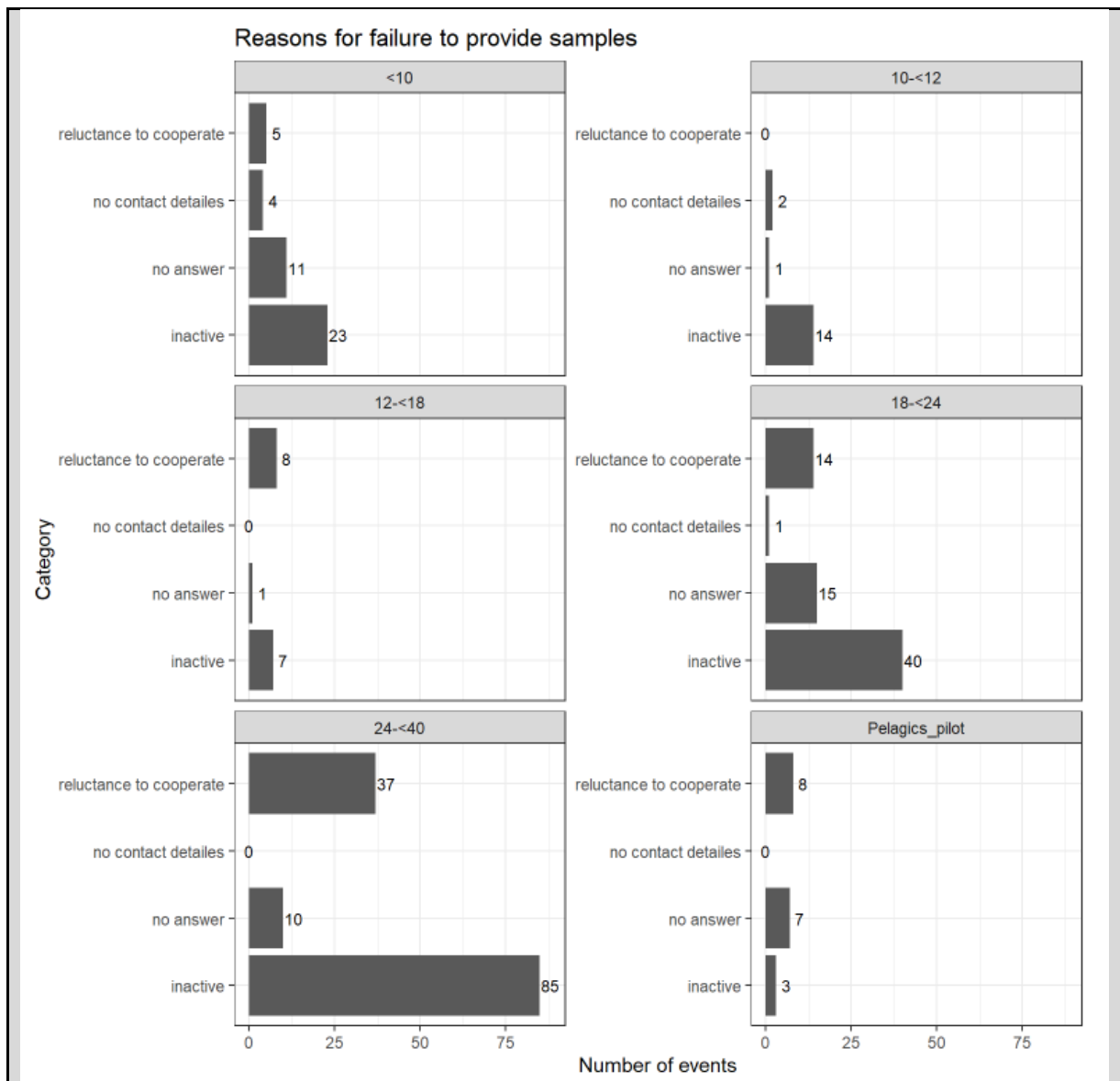
For 12-<18 group the non-response rate is 72.7%. This is caused by landings abroad and vessels unavailability, and to some extent by lack of quota.

For 18-<24 and 24-<40 stratum non-response rate are 30% higher than refusal rate. This is caused by 'inactive' (around 50% for both strata), reluctance to cooperate – around 20% in both of groups and no answer (18-<24 – 18.5%, 24-<40 – 5.6%).

The non-response rate for Baltic small pelagic RSP is 60%. The reason for that is mainly by reluctance to cooperate and non-response.

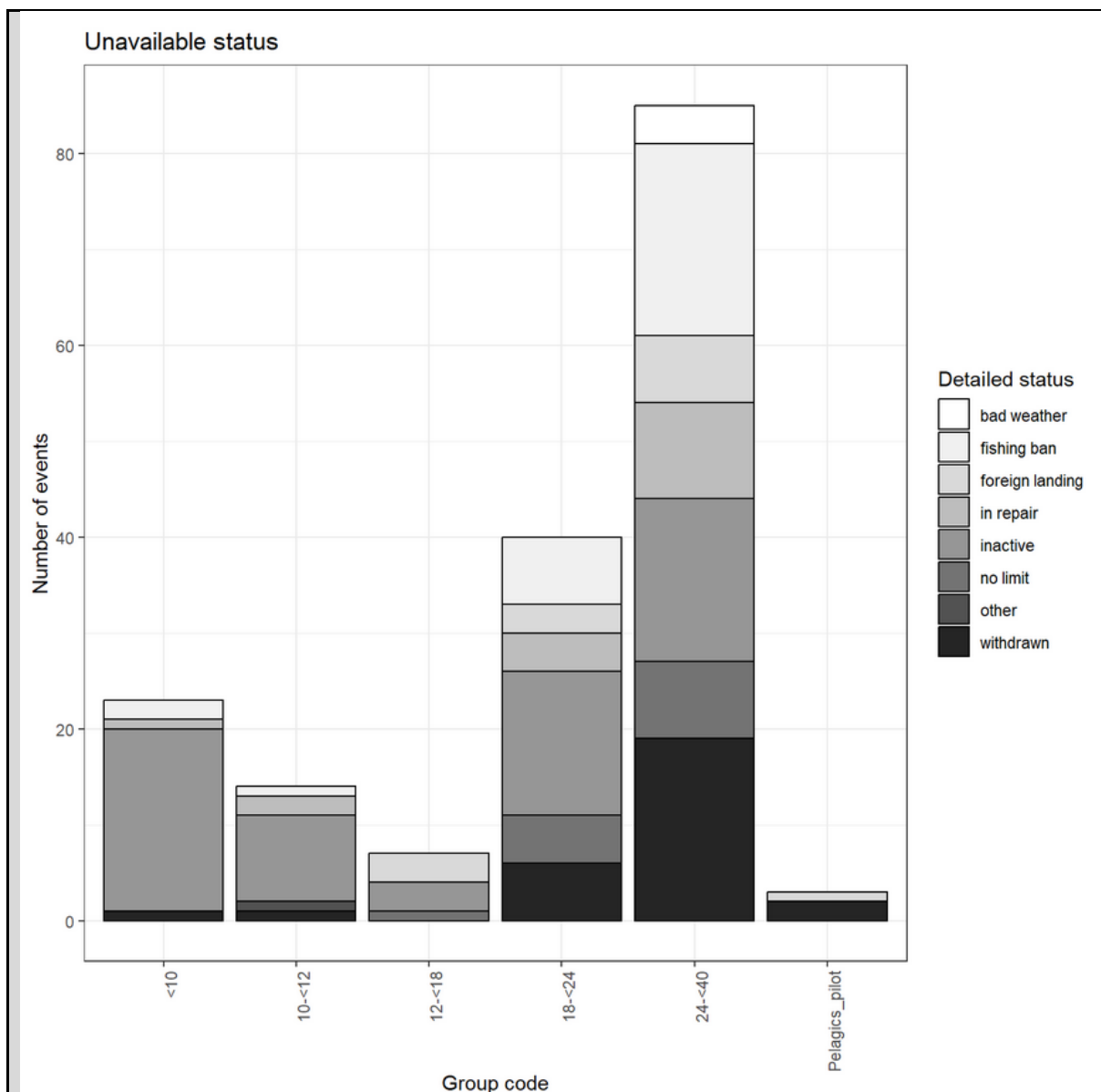
The main reasons for any deviations from the workplan varied between different strata.

The figures below present the frequency of reasons for failure to provide samples for each stratum.



Five main groups of reasons were chosen for refusal analysis purposes:

- 1) inactive vessels (including vessels actually inactive, in repair, withdrawn from fishery)
- 2) fishing ban
- 3) reluctance to cooperate
- 4) lack of quota
- 5) landings abroad



The overall refusal rate for all strata in 2023 – 37.5%, the non-response rate – 71.2%.

Unavailability of the vessels (inactive, fishing ban, withdrawn from fishery) had a high impact on the overall execution. It was mainly related to temporal closures of major fisheries in the Baltic Sea. Fishery targeting Cod (*Gadus morhua*) in SDs 24 and 25-32 and salmon (*Salmo salar*) in SDs 22-31 were prohibited in 2023 - only small amount of bycatch was allowed. Cod recreational fisheries was also prohibited. It was also be prohibited to fish with any type of fishing gear in subdivisions 25 and 26 from 1 May to 31 August (with some exceptions for vessels of length <12m and for vessels in SD 25 fishing small pelagics for human consumption but in limited areas). This factor had meaningful impact especially for the achievement of PSU in group 24-<40. High percentage of refusals for this group was also caused by ‘reluctance to cooperate’ reason. It is mainly because, there is relatively low number of vessels’ owners in this group having vessels with very high sampling weights (because of high volume of landings in the reference period), so these vessels are usually drawn multiple times. Unfortunately some of these vessels’ owners successively refuses to cooperate, contributing to the low achievement in this group.

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

## Region: North Sea and Easter Arctic

### *Additional information on sampling schemes*

The sampling scheme is described in the Annex 1.1. Sampling design and sampling protocol are described in document “*DCF-Sampling-Design-and-Plan-description-Demersal-NSEA*” (<https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf>)

### *Additional description of sampling frames*

*NSEA - Freezer trawler targeting cod in NS&EA*

*Usually only one fishing vessel operating in this fishery.*

### Deviations from the work plan

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

No sampling performed in 2023. In the past there was only one vessel operating in this area and targeting demersal species, operating from outside of Poland. This vessel was sold in 2022 and permanently withdrawn from this fishery.

### Actions to avoid deviations

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

NA

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

## Region: Other regions - CECAF

### *Additional information on sampling schemes*

#### CECAF at sea sampling

The sampling scheme is described in the Annex 1.1.

Data collection is coordinated and executed by POL and data provision executed by NLD under joint sampling programme based on “*Multi-lateral agreement between Germany, Latvia, Lithuania, The Netherlands and Poland for biological data collection of pelagic fisheries in CECAF waters 2018-2020 (extension 2021-2023)*” ([https://dcf.mir.gdynia.pl/?page\\_id=365](https://dcf.mir.gdynia.pl/?page_id=365)). Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG. The multi-lateral agreement is valid until the end of 2023 with an option for extension.

### *Additional description of sampling frames*



CECAF at sea - Pelagic trawlers fishing in CECAF

This fishery is conducted by EU fishing vessels.

Deviations from the work plan

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

No sampling performed in 2023 due to lack of space for observer on board the vessels.

Actions to avoid deviations

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

According to multilateral agreement, joint (EU) sampling programme in CECAF is organized and executed by NMFRI (POL). The lack of space on board the vessels is a factor beyond the Institute's control. Nevertheless, the NMFRI is in constant contact with operators of EU vessels active in the area and constantly attempts to send observers to carry out sampling.

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

**Region: Other regions - SPRFMO**

*Additional information on sampling schemes*

SPRFMO at sea sampling

The sampling scheme is described in the Annex 1.1.

Data collection is coordinated and executed by POL under joint sampling programme based on “Multi-lateral agreement for 2017 and 2018 between Germany, Lithuania, The Netherlands and Poland for biological data collection of pelagic fisheries in SPRFMO waters (extension 2021-2023)” ([https://dcf.mir.gdynia.pl/?page\\_id=365](https://dcf.mir.gdynia.pl/?page_id=365)).

Data collected in SPRFMO area are processed by POL and transmitted to SPRFMO Secretariat and to SPRFMO Scientific Committee. The multi-lateral agreement is valid until the end of 2023 with an option for extension.

*Additional description of sampling frames*

SPRFMO at sea - Pelagic trawlers fishing in SPRFMO

This fishery is conducted by EU fishing vessels.

Deviations from the work plan

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

No deviations.

Actions to avoid deviations

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

No actions needed.

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

## Text Box 2.6: Research surveys at sea

### Research survey: Baltic Sea – BITS Q1

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

*(Use one text box per survey)*

#### **Baltic International Trawl Surveys – BITS Q1**

##### *1. Objectives of the survey*

The aim of the BITS surveys is to provide fishery-independent fish stocks size indices for the stock assessment, mainly of cod (*Gadus morhua*), flounder (*Platichthys flesus*) and to some extent to sprat (*Sprattus sprattus*) and herring (*Clupea harengus*). In addition, the recorded distribution of less abundant species in the Baltic benthic zone is reflecting the temporal-spatial changes in fish biodiversity. Moreover, materials collected during the BITS surveys are used as the input data for analysis fluctuation of Baltic fish year-classes abundance, including recruits. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions.

Additionally, following data are collected during BITS surveys:

- *Gadus morhua* stomachs are sampled to analyse the food components,
- Data on marine litter per haul,
- Presence of PETS.

National parts of the BITS\_Q1 surveys should be carried out in the first quarter, between 1 February and 31 March (winter/spring survey).

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

Description of the survey design and methods used in the survey can be found in the “ICES. 2017. Manual for the Baltic International Trawl Surveys (BITS). Series of ICES Survey Protocols SISP 7 - BITS. 95 pp. <http://doi.org/10.17895/ices.pub.2883>”

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

BITS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BITS\_Q1 surveys: DEU (rv Solea); DNK (rv Havfisken, rv Dana); LTU (commercial vessel); LVA(chartered vessel); POL (rv Baltica); SWE (rv Svea)

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

NA – no other MS participate in surveys conducted by POL

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

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

<https://www.ices.dk/community/groups/pages/wgbifs.aspx>

or

<https://doi.org/10.17895/ices.pub.23675049>

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

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

Time series of CPUE indices by age groups in numbers are used routinely by WGBFAS as tuning series in the assessment of the Baltic cod and plaice. Mean weight in stock from BITS are also used for the biomass assessment. Recruitment estimates are applied for biomass projections. Maturity ogives are estimated from BITS Q1. For flounder stocks effort and biomass-index are calculated from BITS catches. The stock biomass trend is estimated using the biomass index from BITS-Q1.

Marine litter data collected is used by the WGML

Cod stomach content data is used by WGSAM, WGIAB and WGCOMEDA to provide predation mortality from predator-prey interaction estimates.

Data on fish diseases and the number parasites in cod livers are also collected – used by WPGMO.

7. Extended comments

*Extended AR comments can be placed under this section.*

*(max. 450 words per survey)*

## Research survey: Baltic Sea – BITS Q4

*(Use one text box per survey)*

### **Baltic International Trawl Surveys – BITS Q4**

#### *1. Objectives of the survey*

The aim of the BITS surveys is to provide fishery-independent fish stocks size indices for the stock assessment, mainly of cod (*Gadus morhua*), flounder (*Platichthys flesus*) and to some extent of sprat (*Sprattus sprattus*) and herring (*Clupea harengus*). In addition, the recorded distribution of less abundant species in the Baltic benthic zone is reflecting the temporal-spatial changes in fish biodiversity. Moreover, materials collected during the BITS surveys are used as the input data for analysis fluctuation of Baltic fish year-classes abundance, including recruits. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions.

Additionally, following data are collected during BITS surveys:

- *Gadus morhua* stomachs are sampled to analyse the food components,
- Data on marine litter per haul,
- Presence of PETS.

National parts of the BITS\_Q4 surveys should be carried out in the fourth quarter, between 1 and 30 November (autumn survey).

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

Description of the survey design and methods used in the survey can be found in the “ICES. 2017. *Manual for the Baltic International Trawl Surveys (BITS). Series of ICES Survey Protocols SISP 7 - BITS. 95 pp.* <http://doi.org/10.17895/ices.pub.2883>”

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

BITS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BITS\_Q4 surveys: DEU (rv Solea); DNK(rv Havfisker, rv Dana); EST (commercial vessel); LTU (commercial vessel); LVA(chartered vessel); POL (rv Baltica); SWE (rv Svea).

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

NA – no other MS participate in surveys conducted by POL

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

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

<https://www.ices.dk/community/groups/pages/wgbifs.aspx>

or

<https://doi.org/10.17895/ices.pub.23675049>

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context. *If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.*

Time series of CPUE indices by age groups in numbers are used routinely by WGBFAS as tuning series in the assessment of the Baltic cod and plaice. Mean weight in stock from BITS are also used for the biomass assessment. Recruitment estimates are applied for biomass projections. For flounder stocks effort and biomass-index are calculated from BITS catches. The stock biomass trend is estimated using the biomass index from BITS-Q4. For flounder Catch per unit of effort (kg per hour) from the BITS Survey in the 4th quarter is used to calculate an index representing flounder abundance by weight.

Marine litter data collected is used by the WGML.

Cod stomach content data is used by WGSAM, WGIAB and WGCOMEDA to provide predation mortality from predator-prey interaction estimates.

Data on fish diseases and the number parasites in cod livers are also collected – used by WGPGMO.

7. Extended comments

*Extended AR comments can be placed under this section.*

*(max. 450 words per survey)*

## **Research survey: Baltic Sea – SPRAS**

*(Use one text box per survey)*

### **Sprat Acoustic Surveys – SPRAS**

#### *1. Objectives of the survey*

The main aim of the SPRAS surveys is an estimation of the abundance indices of *Sprattus sprattus* in May, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted.

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

Description of the survey design and methods used in the survey can be found in the “*ICES. 2017. Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 - IBAS. 47 pp. <http://doi.org/10.17895/ices.pub.3368>”*

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

SPRAS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in SPRAS surveys: DEU (rv Walther Herwig III); EST(rv Baltica - chartered); LTU (commercial vessel); LVA (chartered vessel); POL (rv Baltica); SWE (rv Svea).

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

NA – no other MS participate in surveys conducted by POL

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

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

<https://www.ices.dk/community/groups/pages/wgbifs.aspx>

or

<https://doi.org/10.17895/ices.pub.23675049>

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context. *If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.*

Time series of abundance indices by age groups in numbers are used routinely by WGBFAS as tuning series in the assessment of the Baltic sprat.

7. Extended comments

*Extended AR comments can be placed under this section.*

*(max. 450 words per survey)*

## **Research survey: Baltic Sea – BIAS**

*(Use one text box per survey)*

### **Baltic International Acoustic Surveys – BIAS**

1. Objectives of the survey

The aim of the BIAS surveys is an estimation of *Clupea harengus*, *Sprattus sprattus* and, to some extent, *Gadus morhua* stocks resources (biomass and abundance) and analysis of their spatial distribution in the pelagic zone of the southern Baltic during autumn season, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted. BIAS surveys are carried out annually in September/October.

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

Description of the survey design and methods used in the survey can be found in the “*ICES. 2017. Manual for the International Baltic Acoustic Surveys (IBAS). Series of ICES Survey Protocols SISP 8 - IBAS. 47 pp. <http://doi.org/10.17895/ices.pub.3368>*”

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

BIAS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS). MS participating in BIAS surveys: EST (chartered vessel); FIN (rv Aranda); LTU (commercial vessel); LVA (chartered vessel); POL (rv Baltica); SWE (rv Svea).

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

NA – no other MS participate in surveys conducted by POL

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

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

<https://www.ices.dk/community/groups/pages/wgbifs.aspx>

or

<https://doi.org/10.17895/ices.pub.23675049>

6. *List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context. If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.*

Time series of abundance indices by age groups in numbers are used routinely by WGBFAS as tuning series in the assessment of the Baltic sprat and herring.

7. *Extended comments*

*Extended AR comments can be placed under this section.*

(max. 450 words per survey)

## Research survey: Baltic Sea – Baltic Ichthyoplankton Survey

(Use one text box per survey)

### **Baltic Ichthyoplankton Survey**

#### 1. Objectives of the survey

The main aim of the Baltic Ichthyoplankton Surveys is monitoring of the spatial distribution and abundance of fish eggs and larvae. Several individual survey cruises are conducted each year in close collaboration between several institutes around the Baltic Sea. The surveys are conducted between March and November, aiming to cover the entire spawning season of the target species, Baltic cod. However, depending on the time of sampling, eggs and larvae of other species are caught as well, such as e.g. sprat, herring and flounder as well as several non-commercial species. As spawning of Baltic cod is presently mainly restricted to the Bornholm Basin due to the ambient hydrographic conditions, the main survey area is located in ICES SD 25, but some cruises also cover adjacent areas to account for potential spatial extension of spawning activity. In addition to the ichthyoplankton sampling, a number of trawl hauls are conducted to obtain information on the adult cod, in particular on their fecundity and sex ratios. Furthermore, hydrological parameters are recorded throughout the survey area via CTD casts, and their vertical and horizontal variations are taken into account during analysis and interpretation of survey results. The data resulting from these surveys are utilized to produce a fishery independent SSB estimate as well as a larval index, which are used in the stock assessment of Baltic cod.

As mentioned, several institutes are contributing to these surveys to cover the spawning season of Baltic cod from March to November. National Marine Fisheries Research Institute is conducting a survey in June onboard on polish RV Baltica, which is a joint survey with the DTU Aqua, Denmark. In addition, one survey is conducted in August only by NMFRI, also on RV Baltica.

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

Ichthyoplankton is sampled on a regularly spaced station grid consisting of 60 stations in the main Basin. The sampling gear is a Bongo net with an opening diameter of 60 cm and nets of 320 cm length, one net with 500  $\mu\text{m}$  and one net with 335  $\mu\text{m}$  mesh size. The gear is deployed at 3 knots ship speed in a double-oblique haul from the surface to 5 m above the sea floor. In addition, on each sampling station profiles of the ambient hydrographic conditions are obtained by CTD casts. Adult fish are sampled by different types of otter trawls, depending on the institute conducting the individual cruises.

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

- a. DTU Aqua – National Institute of Aquatic Resources, Denmark, RV DANA & RV BALTICA (charter)
- b. NMFRI – National Marine Fisheries Research Institute, Poland, RV BALTICA



- c. GEOMAR – Helmholtz Centre for Ocean Research Kiel, Germany, RV ALKOR
- d. IMF – Institute of Marine Ecosystem and Fishery Science, Hamburg University, Germany, RV ALKOR
- e. TI-OSF – Thünen Institute of Baltic Sea Fisheries, Germany, RV CLUPEA

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

NA

(max 450 words per survey)

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

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

There is no formal coordinating group for this kind of activity. Ichthyoplankton data collection is coordinated by DTU Aqua (DNK). Aggregated data are used for calculation of eggs and larvae indices used for Baltic Fisheries Assessment Working Group purposes in Frame (ICES WGBFAS).

[https://ices-library.figshare.com/articles/report/Baltic\\_Fisheries\\_Assessment\\_Working\\_Group\\_WGBFAS\\_/23123768/1](https://ices-library.figshare.com/articles/report/Baltic_Fisheries_Assessment_Working_Group_WGBFAS_/23123768/1)

The CTD data collected during the research cruises are used to feed the ICES Report on Ocean Climate (IROC) developed by the Working Group on Oceanic Hydrography (WGOH).

<https://ocean.ices.dk/core/iroc>

6. List the main use of the results of the survey (e.g. indices, abundance estimates, environmental indicators). Specify in which context the results are used (on a routine basis), both in international and national context. *If presenting maps of the achieved research survey stations is necessary, provide them as an annex. Refer clearly to the annex and map numbers.*

WGBFAS annual reports. The eggs and larvae indicates as a proxy or independent assessment of the Spawning Stock Biomass (SSB). SSB indices is based on annual egg production.

ICES Report on Ocean Climate. CTD data from research cruises in the southern Baltic Sea are used to analyze the regions described in the chapter "Skaggerak, Kattegat, and the Baltic Sea".

7. Extended comments

*Extended AR comments can be placed under this section.*

(max. 450 words per survey)

### SECTION 3: FISHING ACTIVITY DATA

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

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

The determination of the size of commercial catches of eel in inland waters is based on data from 52 fishery operators covering a total area of 220 526.55 ha and, as part of these waters are rivers and dam reservoirs, this represents 93.44% of the total area of waters included in the Eel Management Plan for Poland (EMP), amounting to 235,995 ha.

The calculations assumed, in accordance with the EMP, that the total lake area for the Odra basin is 82 285 ha and for the Vistula basin 153 710 ha. The areas mentioned cover only larger lakes, situated in larger clusters or constituting compact lakelands, connected by watercourses allowing, in theory, the free migration of eels and therefore making it possible to manage and protect the population of this species in accordance with the EMP guidelines. On this basis, the catches of eel in the two distinguished river basins can be calculated.

The list of fishery users is available in the databases of 11 Regional Water Management Boards and, if necessary, data will be obtained from these resources.

The Act of 12 April 2018 on the registration of yachts and other vessels up to 24 m in length made the registration of fishing boats mandatory. The central register is now being gradually completed and data is being systematically collected there on:

- the name of the vessel
- home port of the vessel in the territory of the Republic of Poland
- type of propulsion of the vessel and, in case of mechanical propulsion, also its power
- make and model or type of vessel
- basic dimensions and parameters of the vessel
- the main material of the hull of the vessel
- year of construction and vessel manufacturer
- the call sign
- maximum authorised number of persons
- maximum authorised wind strength and significant wave height

For inland fisheries regulations, there is no requirement to record fishing days or other indicators of the fishing effort. It is planned to carry out a 3-year programme in which the two largest fishery operators in the Mazurian region will be obliged to record each fishing operation, including: type of gear, day of deployment, day of retrieval, size of catch, location of catch. Special forms will be developed and introduced to the main eel fishing users in the following years.

(max. 900 words)

Deviations from the work plan

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

No deviations

Actions to avoid deviations

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

NA

(max. 900 words)

#### SECTION 4: IMPACT OF FISHERIES ON MARINE BIOLOGICAL RESOURCES

##### Text Box 4.2: Incidental catches of sensitive species

###### **Region: All regions**

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

*Has an assessment of the relative risk of bycatch for the different gear types/metiers taken place and been taken into account for the sampling design?*

No.

*What are the gear types/metiers that present the highest risk of bycatch per species/taxa of PETS in a given region?*

It is assumed that the risk of bycatch of PETS is relatively high for small scale fleets using passive gears and operating in coastal areas with depth less than 20-30m.

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

Fishing operations subject to at sea sampling of commercial catches are also checked for the occurrences of PETS. All parts of observed fishing operations are covered. Information on fishing operations which were not sampled is also registered.

*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.*

Sampling protocol follows the recommendations from FishPi2, WGBYC and WGCATCH.

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

- Does the on-board observer protocol contain a check for rare specimens in the catch at opening of the cod-end? If YES is the observer instructed to indicate if the cod-end was NOT checked in a haul?

Yes

- In gill nets - and hook-and-line fisheries: does the on-board observer protocol instruct the observer to indicate how much of the hauling process has been observed for (large) incidental bycatches that slip out of the net?

Yes

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

Yes

*Additional information on sampling schemes:*

From legal perspective, it is compulsory for fishermen to report all bycatch, including bycatch of protected species, in the logbook.

Under the DCF the absence or presence of incidental bycatches, including all protected species (including fish, birds, mammals), are routinely recorded on each at-sea-observer trip. Observers are specifically instructed and requested to:

- Check each observed catch for the presence of protected species, irrespective of the fishing gear used;
- Observe hauling process during observed fishing operations;
- Record details of the bycatch of protected species, with length and weight measurements where possible (including photo documentation);
- Record parameters of the fishing gear (such as the number of units, their heights and lengths and the amount of the observed hauling process in case of passive gears;

Particular attention for presence of protected species is paid during observations of fishing trips with the use of passive gears and in case of coastal or small scale fisheries as those gears and fleet segments are regarded as presenting higher risk of bycatch of protected species.

Data on bycatch are annually submitted within the ICES WGBYC data call and will be included in the future submission of RDBES data when respective tables and parameters are in place.

The requirements to observe and record all bycatch of protected species applies not only to Baltic Sea region but also to fishing trips observed in other regions: North Sea and Eastern Arctic, CECAF area and SPRFMO area.

In 2019 a free mobile application (for smartphones, tablets) was developed at the National Marine Fisheries Institute (NMFRI), dedicated to monitor, record and document the bycatch of protected species. The application is named "*MIR przyłowy*" (in direct translation: "*NMFRI bycatch*") and from 2019 until now is tested and further developed in cooperation with fisherman and fisheries organisation along the whole Polish coast in the Baltic. This application *i.a.* automatically records the time and position of the vessel with graphical presentation on the map and has functionalities activated by fisherman (or person using it) enabling recording the details of the fishing operations: fishing vessel official number, name of ports for fishing trip start and end, fishing gear used and its main parameters (length, height, mesh size number of hooks *etc.*), sea and weather condition, start of shooting or hauling in the fishing gear, depth, target and bycatch species data (weight or number), taking photos on the spot of the bycaught protected species (for later species identification). All data recorded by application during the fishing operations are stored in the device memory and, once within the range of mobile network, can be sent directly to the server in NMFRI. Software developed on the server side enables generating the trip reports with all details of the fishing trip and catch. The application tests to-date have shown that it is a very practical and effective tool for monitoring the catch, bycatch and fishing effort.

The implementation of this application on a large scale requires cooperation and general acceptance of the fishing community and at the present stage it is very difficult to apply. Currently, the app is tested on a voluntary basis. However, this app has great potential as an effective tool for monitoring the by-catch of protected species.

## Results

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

Observers have been instructed to look for incidental by-catch of birds, mammals and fish during at sea sampling. By-caught species can be also registered in the Pelagics\_RSP sampling frame, as it covers an unsorted catch sample.

For all sampling and observation activity of commercial fishery in 2023, the total of 161 individuals of protected and sensitive fish species and 1 individual of bird were incidentally by-caught:

*Acipenser oxyrinchus:*

- 1 individual in ICES SD 24 in May in stratum “Baltic vessels under 10 meters in length” using GNS,

*Alosa fallax:*

- 1 individual in ICES SD 24 in May in stratum “Baltic vessels under 10 meters in length” using GNS,
- 39 individuals in ICES SD 24 in May in stratum “Baltic vessels between 12 and 18 meters in length” using GNS,
- 16 individuals in ICES SD 24 in July in stratum “Baltic vessels under 10 meters in length” using FPO,
- 4 individuals in ICES SD 24 in August in stratum “Baltic vessels between 12 and 18 meters in length” using GNS,
- 6 individuals in ICES SD 25 in July in stratum “Baltic vessels under 10 meters in length” using GNS,
- 16 individuals in ICES SD 25 in September in stratum “Baltic vessels under 10 meters in length” using GNS,
- 30 individuals in ICES SD 26 in May in stratum “Baltic vessels under 10 meters in length” using FPO,
- 19 individuals in ICES SD 26 in May in stratum “Baltic vessels under 10 meters in length” using GNS,
- 10 individuals in ICES SD 26 in July in stratum “Baltic vessels under 10 meters in length” using GNS,
- 7 individuals in ICES SD 26 in August in stratum “Baltic vessels under 10 meters in length” using FPO,
- 4 individuals in ICES SD 26 in September in stratum “Baltic vessels under 10 meters in length” using FPO,
- 3 individuals in ICES SD 26 in September in stratum “Baltic vessels under 10 meters in length” using FYK,
- 1 individual in ICES SD 26 in September in stratum “Baltic vessels under 10 meters in length” using GNS,

*Cyclopterus lumpus:*

- 2 individuals in ICES SD 25 in June in stratum “Baltic vessels between 18 and 24 meters in length” using OTM,

*Lampetra fluviatilis:*

- 2 individuals in ICES SD 26 in November in stratum “Baltic vessels between 10 and 12 meters in length” using FPO.

*Gavia arctica:*

- 1 individual in ICES SD 25 in May in stratum “Baltic vessels between 18 and 24 meters in length” using LLD,

During BITS Q1 research survey in February 2023 the following protected and sensitive fish species were by-caught:

- *Cyclopterus lumpus*: 4 individuals in ICES SD 25, 31 individuals in ICES SD 26,
- *Alosa fallax*: 39 individuals in ICES SD 25, 43 individuals in ICES SD 26,
- *Merlangius merlangus*: 1 individual in ICES SD 25.

During BITS Q4 research survey in November 2023 the following protected and sensitive fish species were by-caught:

- *Cyclopterus lumpus*: 3 individuals in ICES SD 25, 4 individuals in ICES SD 26,
- *Alosa fallax*: 11 individuals in ICES SD 25, 22 individuals in ICES SD 26,
- *Merlangius merlangus*: 5 individuals in ICES SD 25, 2 individuals in ICES SD 26,
- *Pomatoschistus minutus*: 1 individuals in ICES SD 25, 2 individuals in ICES SD 26,

During BASS research survey in May 2023 the following protected and sensitive fish species were by-caught:

- *Cyclopterus lumpus*: 1 individual in ICES SD 25.

During BIAS research survey in September 2023 the following protected and sensitive fish species were by-caught:

- *Cyclopterus lumpus*: 6 individuals in ICES SD 25, 3 individuals in ICES SD 26,
- *Lampetra fluviatilis*: 1 individual in ICES SD 25, 1 individual in ICES SD 26,
- *Merlangius merlangus*: 2 individuals in ICES SD 25.

Deviations from the work plan

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

No deviations.

Actions to avoid deviations

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

NA

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

## SECTION 5: ECONOMIC AND SOCIAL DATA IN FISHERIES

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

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

#### 1. Description of clustering

Due to low number of vessels belonging to several segments two clusters were necessary to create.

The first cluster (A) **Drift and/or fixed netters 12-< 24 m\*** consists of Drift and/or fixed netters 12-< 18 m (15 vessels), Drift and/or fixed netters 18-< 24 m (2 vessels), and Vessels using hooks 12-< 18 m (2 vessels).

The second cluster (B) **Demersal trawlers and/or demersal seiners 12-< 18 m\*** consists of four segments of vessels using demersal trawls mainly: Demersal trawlers and/or demersal seiners 08-<12 m (7 vessels), Demersal trawlers and/or demersal seiners 12-<18 m (22 vessels), Demersal trawlers and/or demersal seiners 18-<24 m (3 vessels), and Demersal trawlers and/or demersal seiners 24-<40 m (1 vessel).

In the case of cluster (A), technical parameters (length and engine power), as well as species composition of catches and type of gears used, were taken into account when clustering. Segments belonging to each cluster are considered similar to other segments with no distinct characteristic or importance.

Demersal trawlers and/or demersal seiners 12-<18 m dominate in cluster (B). The average length of the two other neighbouring segments is close to the lower (12 m) and upper (18 m) ranges of the dominant segment length class. All these segments use the same gear type and have a similar species composition pattern. The 100% use of demersal trawl and similar species composition to other segments justified including the single Demersal trawlers and/or demersal seiners 24-<40 m in the cluster regardless of its distinct technical characteristics. The vessel's contribution to the cluster's total effort and catches is low (2-3%).

Table 5.2.1 Clusters/segments - basic technical parameters (2022).

Clusters		Segments		vessels	mean GT	mean kW	mean length
		fishing tech	length class				
A	<b>Drift and/or fixed netters 12-&lt; 18 m*</b>	Drift and/or fixed netters	12-< 18 m	15	27.2	112.7	15.0
		Vessels using hooks	12-< 18 m	2	5.7	60.5	12.0
		Drift and/or fixed netters	18-< 24 m	2	35.0	174.5	18.9
		<b>number/average</b>			<b>19</b>	<b>25.8</b>	<b>113.7</b>
B	<b>Demersal trawlers and/or demersal seiners 12-&lt; 18 m*</b>	Demersal trawlers and/or demersal seiners	08-<12 m	7	16.1	82.1	11.8
		Demersal trawlers and/or demersal seiners	12-<18 m	22	31.4	143.0	14.9
		Demersal trawlers and/or demersal seiners	18-<24 m	3	52.3	205.3	19.6
		Demersal trawlers and/or demersal seiners	24-<40 m	1	100.0	258.0	25.6
		<b>number/average</b>			<b>33</b>	<b>32.1</b>	<b>139.3</b>

A) Cluster **Drift and/or fixed netters 12-< 18 m\***

The cluster consist of 19 vessels with dominant contribution of Drift and/or fixed netters 12-< 18 m (15 vessels), the second minor group (2 units) are vessels using hooks (dominant gear) and the third drift and fixed nets (2 vessels). Figures showing comparison of number of days, volume and

value of catches and species composition of catches for segments belonging to the cluster are presented below.

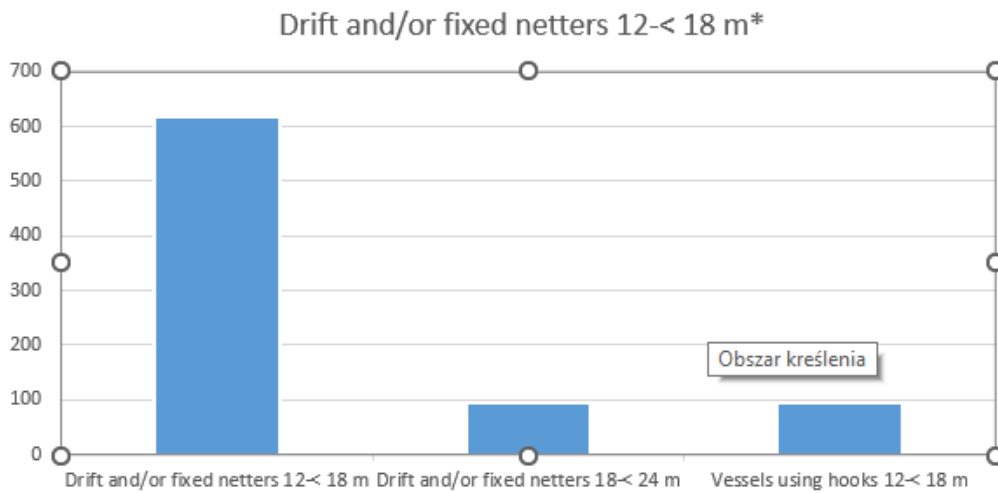


Fig. 5.2.1 Comparison of number of days at sea for segments belonging to cluster Drift and/or fixed netters 12-< 18 m\* (2022).

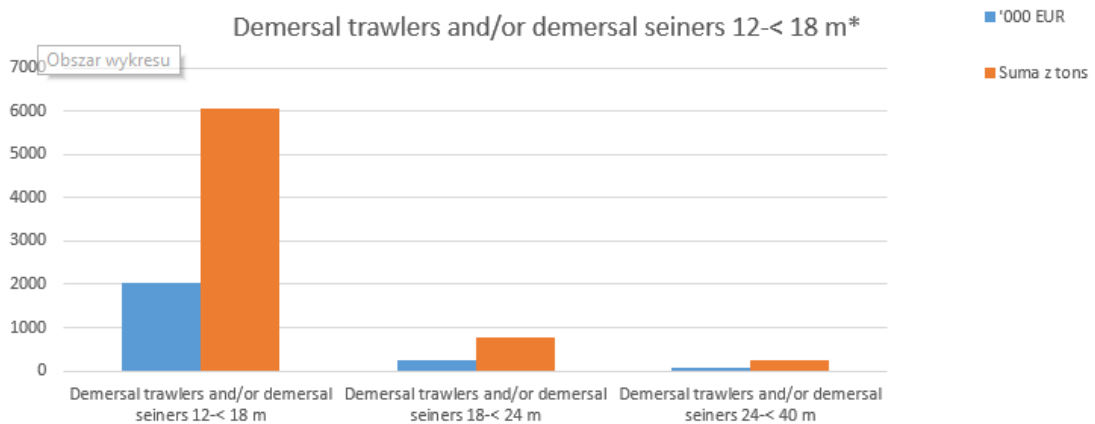


Fig. 5.2.2 Comparison of value and volume of catches for segments belonging to cluster Drift and/or fixed netters 12-< 18 m\* (2022).



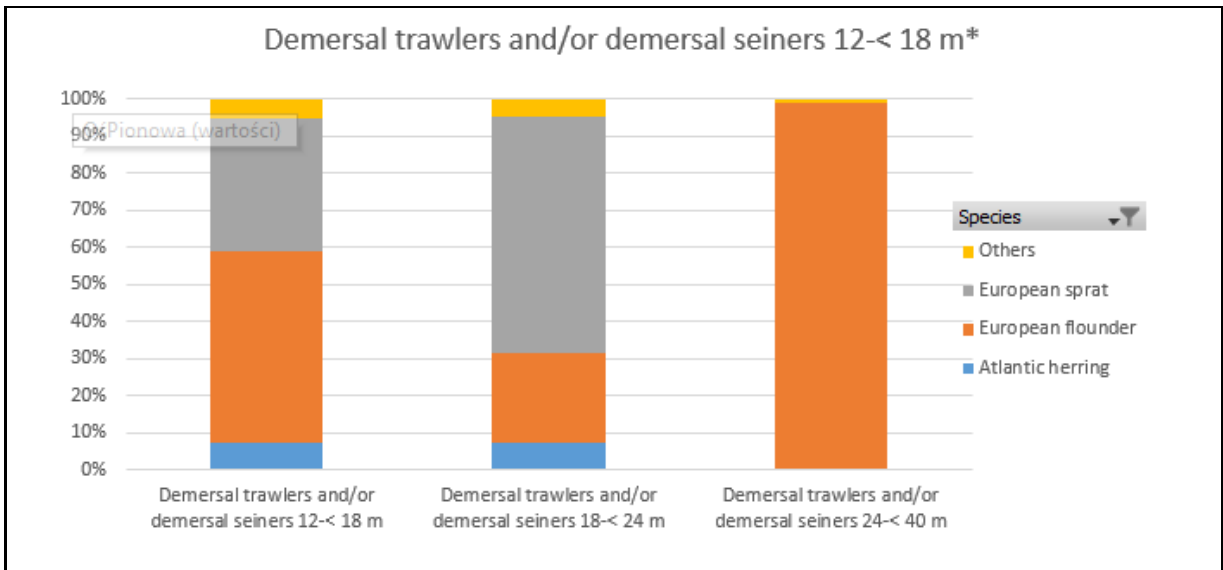


Fig. 5.2.3 Species composition of catches for segments belonging to cluster Drift and/or fixed netters 12-< 18 m\* (2022).

**B) Cluster Demersal trawlers and/or demersal seiners 12-< 18 m\***

The cluster consist of 33 vessels with dominant contribution of Demersal trawlers and/or demersal seiners 12-< 18 m (22 vessels), the second much smaller group (7 units) are vessels using demersal trawl of 8-< 12 meters length (11.8 m average). There are also three demersal trawlers of 18-<24 meters and single demersal trawling vessel over 24 meters. Figures showing comparison of number of days, volume and value of catches and species composition of catches for segments belonging to the cluster are presented below.

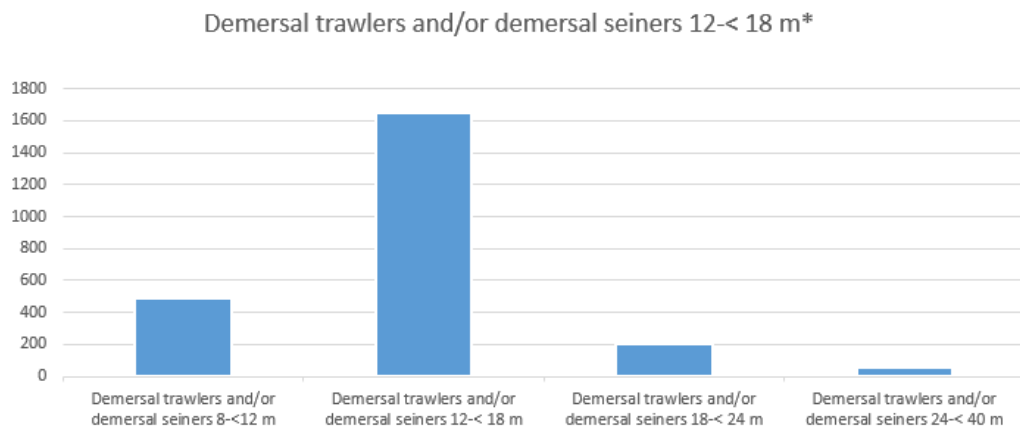


Fig. 5.2.4 Comparison of number of days at sea for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m\* (2022).

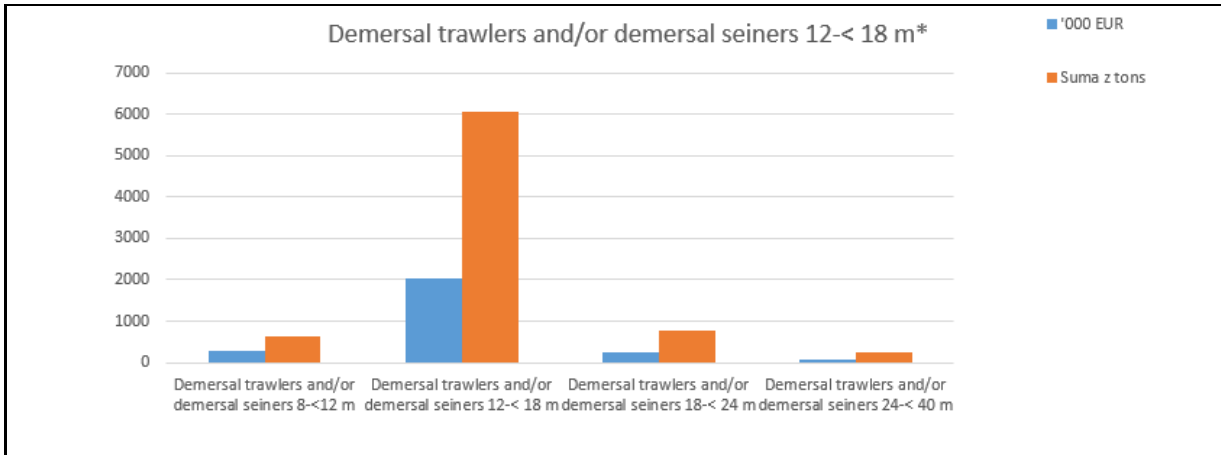


Fig. 5.2.5 Comparison of value and volume of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m\* (2022).

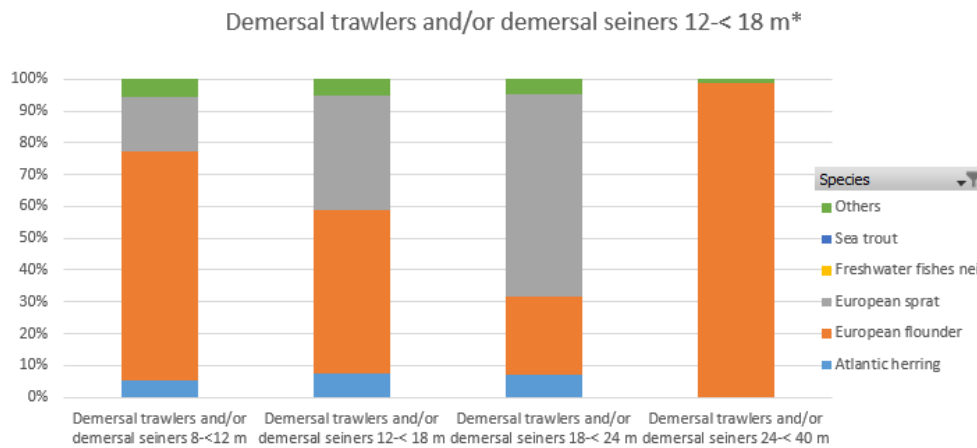


Fig. 5.2.6 Species composition of catches for segments belonging to cluster Demersal trawlers and/or demersal seiners 12-< 18 m\* (2022).

2. Description of activity indicator

Activity indicator is not used.

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

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

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

*(max. 900 words)*

Deviations from the work plan

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

**Discontinued cluster: Demersal trawlers and/or demersal seiners 18-< 24 m\***

As a consequence of the adaptation process caused by the closure of Baltic cod fisheries in 2019, a number of vessels moved from demersal to pelagic fisheries. This primarily affected the "Demersal

trawlers and/or demersal seiners 18-< 24 m" cluster, where the number of vessels decreased to below 10. Consequently, it was justified to move three vessels of 18-< 24 m and one vessel of 24-< 40 m to the "Demersal trawlers and/or demersal seiners 12-< 18 m" cluster.

**Modified cluster: Drift and/or fixed netters 12-< 18 m\***

Originally, according to WP, this cluster was composed of two segments: "Drift and/or fixed netters 12-< 18 m" and "Vessels using hooks 12-< 18 m". In 2021, and consequently in 2022, additional "Drift and/or fixed netters 18-< 24 m" were added to the cluster. The newly added segment consists of two vessels with an average length of 18.9 m.

**Modified cluster: Demersal trawlers and/or demersal seiners 12-< 18 m\***

As mentioned and explained above four vessels from the former Demersal trawlers and/or demersal seiners 18-< 24 m were moved to the Demersal trawlers and/or demersal seiners 12-< 18 m\* cluster.

**Actions to avoid deviations**

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

NA

*(max. 900 words)*

## SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE

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

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

#### 1. Description of the threshold application

According to Eurostat data, the total Polish aquaculture production (excluding hatcheries and nurseries) in 2019 amounted to 39,730 tonnes. Compared to the EU production in 2019 (1,114,378.97 tonnes), it was 3.57% of the total production of the EU-28. The data of the UK production in 2019 was not included.

In terms of value, Eurostat did not sum up the total production of 28 countries (confidential reason). In the case of Poland, the value of aquaculture production in 2019 amounted to EUR 104.19 million. If we take into account the total value of UE-28 aquaculture production -excluding Denmark and Slovenia (EUR 3,478,757,685), the share of the value of Polish aquaculture production is 3%.

Two aquaculture species are selected for sampling of economic and social variables – carp and trout. Besides these two species, there are 23 aquaculture species in Poland with less than 5% national share – out of which, four species (*Hypophthalmichthys nobilis*, *Acipenser sp.*, *Ctenopharyngodon idella*, *Salmo salar*) have a share in the range of 1.3-1,7% national share, five species (*Carassius carassius*, *Esox lucius*, *Tinca tinca*, *Hypophthalmichthys molitrix*, *Silurus sp.*) have a share in the range of 0.3-0.5% national share and remaining 14 species have a share of less than 0.06% national share (mainly small species from *Cyprinidae*, *Salmonidae* and *Percidae* families).

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

No deviations planned

### Deviations from the work plan

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

For carp farming, a 100% response rate was achieved for most of variables, confirming the validity of the support measures implemented in 2023 based on data from 2022. For some variables a lower (70-96%) response rate was achieved, because some respondents (flat-rate farmers) do not keep accounting records and do not have data, particularly regarding depreciation and certain balance sheet items.

For trout farming in raceway systems, nearly an 80% response rate was obtained, which is significantly higher than the previous year. In recirculating systems, the response rate was 50% - the overall number of entities is small, and the reluctance of even a few entities to complete the questionnaire results in a lower response rate.

### Actions to avoid deviations

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

Extensive assistance in completing surveys is continued (in the form of telephone, online and direct consultations at fishing farms). Additionally, efforts are being made to inform about the need for conducting research and ensuring the anonymity of individual data, which remains a concern for some members of the farming community.

*(max. 900 words)*

## SECTION 7: ECONOMIC AND SOCIAL DATA IN FISH PROCESSING

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

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

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

Data collection for fish processing is necessary for further analysis of the industry in economic and financial terms. Poland is a one of the largest participants in fish processing industry, especially salmon, and is an important link in the supply chain and distribution channel of fish in Europe.

The collected data make it possible to know the flows referred to above and are crucial to make key economic decisions concerning management and development of the fish processing industry, project planning and public debate including stakeholder participation in policy development. The collected data are necessary for scientific research and publications. Research outcomes contribute to sustainable industry development, process and product innovations. This might be shared with companies and their management, who can take key economic decisions on its basis concerning future development.

Analysis of the fish processing industry is also linked to state policy on modern technologies and environmental protection (e.g. waste management), education and employment in the fish processing industry. The collected data give us essential knowledge on the destination of domestic aquaculture products and the directions of fish imports and exports, including species caught in the Polish economic zone on the Baltic Sea not available from other sources.

Fish processing industry is labour intensive, energy consuming and harmful to the environment therefore needs to be kept under constant review, as made possible by the knowledge gained from data collection.

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

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

*(max. 900 words)*

## Deviations from the work plan

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

NA

## Actions to avoid deviations

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

NA

*(max. 900 words)*

## ANNEX 1.1 - QUALITY REPORT FOR BIOLOGICAL DATA SAMPLING SCHEME

*The quality report fulfils Article 6(3)(d) of Regulation (EU) 2017/1004. This document is intended to specify data to be collected under Chapter II, point 2 of the EU MAP Delegated Decision annex: Biological data on exploited biological resources caught by Union commercial and recreational fisheries.*

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

### **Sampling scheme identifier: BITS\_Q1 and BITS\_Q4**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: BITS_Q1 and BITS_Q4</b>
<b>Sampling scheme type: Research survey at sea</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words):  The main aim of the Baltic International Trawl Surveys (BITS) is to determine the year-class strength of the commercially important demersal fish species in the Baltic Sea. The target data are abundances, weight and length distributions of all fishes and length-weight-age-sex-maturity data of target species as well as hydrographic data (temperature, salinity and oxygen). In addition, marine litter and various biological samples (e.g. stomachs from target species) are sampled for national and international studies. Observation of presence of PETS is also conducted.
<b>Description of the population</b>
<b>Population targeted:</b> The target species are mainly Baltic cod ( <i>Gadus morhua</i> ), flounder ( <i>Platichthys flesus</i> ), plaice ( <i>Pleuronectes platessa</i> ) and to some extent sprat ( <i>Sprattus sprattus</i> ) and herring ( <i>Clupea harengus</i> ) and other the flatfish species in ICES SD 25-26 and 28.
<b>Population sampled:</b> Demersal fish species.
<b>Stratification:</b> The international trawl surveys are carried out in form of a stratified random survey. The ICES subdivisions and depth layers within eight ICES subdivisions (SD21-SD28) are used as strata. Six layers between 10 to 120 m (10 – 39 m, 20 – 39 m, 40 – 59 m, 60 – 79 m, 80 – 99 m and 100 – 120 m)

depending on ICES subdivision are covered by the surveys in aggregated areas in nm<sup>2</sup> by 10-m depth layers and ICES rectangles. The temporal stratification covers 1<sup>st</sup> and 4<sup>th</sup> quarter of the year

### **Sampling design and protocols**

#### **Sampling design description:**

The numbers of planned stations of all participating countries are summarized for the western Baltic area (ICES Subdivisions 22–24) and for the eastern Baltic area (ICES Subdivisions 25–28). Then the total number of planned trawl stations is allocated to subdivisions according to the area and the 5 years running mean of the cpue derived from the BITS surveys for each region. The number of planned stations of each the ICES Subdivision is then allocated to the depth layers. Hydrographic measurements are recorded with a CTD probe on predetermined stations and after each catch-station, and recorded at least in 1-m intervals. Link to surveys manual:

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

#### **Is the sampling design compliant with the 4S principle?:**

NA

#### **Regional coordination:**

The BITS Survey sampling design is a regional agreement developed by the ICES Working Group on Baltic International Fish Survey (WGBIFS) with the participation of Denmark, Estonia, Germany, Latvia, Lithuania, Poland, Sweden and Russia.

#### **Link to sampling design documentation:**

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

#### **Compliance with international recommendations:**

Y

#### **Link to sampling protocol documentation:**

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

#### **Compliance with international recommendations:**

Y

### **Sampling implementation**

#### **Recording of refusal rate:**

NA

#### **Monitoring of sampling progress within the sampling year:**

NA

### **Data capture**

#### **Means of data capture:**

Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskiDATRAS.

#### **Data capture documentation:**

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

**Quality checks documentation:**

Y

[https://dcf.mir.gdynia.pl/?page\\_id=367](https://dcf.mir.gdynia.pl/?page_id=367)

**Data storage**

**National database:**

*npzdr.pl* (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel.

**International database:**

ICES trawl surveys database DATRAS.

<https://www.ices.dk/data/data-portals/Pages/DATRAS.aspx>

**Quality checks and data validation documentation:**

Quality checks for data validation run when the data is uploaded from the national server to ICES-DATRAS.

<https://www.ices.dk/data/data-portals/Pages/DATRAS.aspx>

**Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

**Data processing**

**Evaluation of data accuracy (bias and precision):**

Y

**Editing and imputation methods:**

N – not performed at national level but at end-user level (ICES).

ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

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

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals and are documented in the Quality Control Database (QC DB).



**Validation of the final dataset:**

Final data set is screened automatically by DATRAS when submitted to this ICES database.

Survey indices are produced by ICES Data Centre.

[https://www.ices.dk/data/Documents/DATRAS/Indices\\_Calculation\\_Steps\\_BITS.pdf](https://www.ices.dk/data/Documents/DATRAS/Indices_Calculation_Steps_BITS.pdf)

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

No deviations

**Sampling scheme identifier: SPRAS**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: SPRAS</b>
<b>Sampling scheme type: Research survey at sea</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words):  The main aim of the SPRAS surveys is an estimation of the abundance indices of <i>Sprattus sprattus</i> in May, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is conducted. SPRAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) where timing, surveyed area and the methods of investigation are agreed.
<b>Description of the population</b>
<b>Population targeted:</b> Target species is sprat ( <i>Sprattus sprattus</i> ) in the Baltic in ICES Subdivisions 25-26.
<b>Population sampled:</b> Pelagic fish species.
<b>Stratification:</b> The acoustic and ichthyological sampling stratification is based on ICES statistical rectangles (0.5 degree in latitude and 1 degree in longitude).
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> The objective is to survey distance of about 60 nautical miles per area of 1000 nm <sup>2</sup> in statistical rectangle. In general, each ICES-rectangle is covered with parallel transects spaced by a maximum of 15 nm whenever possible. Fishing is conducted with a pelagic trawl according to hydroacoustic indications (with intention of minimum two hauls per the ICES statistical rectangle) and subsequent biological measurement of catches (species, length composition, sex, maturity and age) are taken. Hydrographic measurements are recorded with a CTD probe before or after each catch-station, and recorded at least in 1-m intervals. Link to surveys manual: <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a>
<b>Is the sampling design compliant with the 4S principle?:</b> NA
<b>Regional coordination:</b> SPRAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) with the participation of Estonia, Germany, Latvia, Lithuania, Poland and Sweden.

<p><b>Link to sampling design documentation:</b>  <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Compliance with international recommendations:</b>  Y</p> <p><b>Link to sampling protocol documentation:</b>  <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Compliance with international recommendations:</b>  Y</p>
<p><b>Sampling implementation</b></p>
<p><b>Recording of refusal rate:</b>  NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b>  NA</p>
<p><b>Data capture</b></p>
<p><b>Means of data capture:</b>  Hydroacoustic measurements with an echosounder Simrad EK60 at frequency 38kHz , , measuring boards, scales, dissection equipment, tubs &amp; buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskaAkustyka.</p> <p><b>Data capture documentation:</b>  See survey manual: <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Quality checks documentation:</b>  Y  <a href="https://dcf.mir.gdynia.pl/?page_id=367">https://dcf.mir.gdynia.pl/?page_id=367</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b>  <i>npzdr.pl</i> (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel. The database module for biological data collected in acoustic surveys has been developed in 2021.  Acoustic data are stored in Internal Files Repository.</p> <p><b>International database:</b>  ICES Acoustic Trawl Survey DB.  <a href="https://www.ices.dk/data/data-portals/Pages/acoustic.aspx">https://www.ices.dk/data/data-portals/Pages/acoustic.aspx</a></p> <p><b>Quality checks and data validation documentation:</b>  <a href="https://www.ices.dk/data/tools/Pages/data-validation.aspx">https://www.ices.dk/data/tools/Pages/data-validation.aspx</a>  <a href="https://acoustic.ices.dk/validationrules">https://acoustic.ices.dk/validationrules</a></p>
<p><b>Sample storage</b></p>

Storage description:

Otoliths from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS <http://doi.org/10.17895/ices.pub.3368>

**Data processing**

**Evaluation of data accuracy (bias and precision):** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the evaluation of data accuracy exists, provide some details in the textbox.

**Y**

**for acoustic measurements through calibration, see survey manual: <http://doi.org/10.17895/ices.pub.3368>**

**Editing and imputation methods:** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the editing and imputation methods exists, provide some details in the textbox.

**N** – not performed at national level but at end-user level (ICES).

ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

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

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals are documented in the Quality Control Database (QC DB).

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

<https://acoustic.ices.dk/validationrules>

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

Quality check by scientist before upload and validated by ICES during and after uploading to database

**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

**Sampling scheme identifier: BIAS**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: BIAS</b>
<b>Sampling scheme type: Research survey at sea</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words):  The aim of the BIAS surveys is an estimation of <i>Clupea harengus</i> , <i>Sprattus sprattus</i> and, to some extent, <i>Gadus morhua</i> stocks resources (biomass and abundance) and analysis of their spatial distribution in the pelagic zone of the southern Baltic during autumn season, with the use of standardized survey design, acoustic measurements, fishing method and data analysis for stock assessment purposes. Hydrographical parameters like seawater temperature, salinity and oxygen content are sampled to analyse the relation between fish temporal distribution and density and current hydrological conditions. Additionally, observation of presence of PETS is also conducted.. BIAS surveys are carried out annually in September/October. BIAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) where timing, surveyed area and the methods of investigation are agreed.
<b>Description of the population</b>
<b>Population targeted:</b> Target species is herring ( <i>Clupea harengus</i> ) and sprat ( <i>Sprattus sprattus</i> ) in the Baltic in ICES Subdivisions 25-26.  <b>Population sampled:</b> Pelagic fish species.  <b>Stratification:</b> The acoustic and ichthyological sampling stratification is based on ICES statistical rectangles (0.5 degree in latitude and 1 degree in longitude).
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> The objective is to survey distance of about 60 nautical miles per area of 1000 nm <sup>2</sup> in statistical rectangle. In general, each ICES-rectangle is covered with parallel transects spaced by a maximum of 15nm whenever possible. Fishing is conducted with a pelagic trawl according to hydroacoustic indications indications (with intention of minimum two hauls per the ICES statistical rectangle) and subsequent biological measurement of catches (species, length composition, sex, maturity and age) are taken. Hydrographic measurements are recorded with a CTD probe before or after each catch-station, and recorded at least in 1-m intervals. Link to surveys manual: <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a>

<p><b>Is the sampling design compliant with the 4S principle?:</b> NA</p> <p><b>Regional coordination:</b> BIAS is internationally co-ordinated by the ICES Baltic International Fish Survey Working Group (WGBIFS) with the participation of Finland, Estonia, Germany, Latvia, Lithuania, Poland Russia and Sweden.</p> <p><b>Link to sampling design documentation:</b> <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Compliance with international recommendations:</b> Y</p> <p><b>Link to sampling protocol documentation:</b> <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Compliance with international recommendations:</b> Y</p>
<p><b>Sampling implementation</b></p>
<p><b>Recording of refusal rate:</b> NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b> NA</p>
<p><b>Data capture</b></p>
<p><b>Means of data capture:</b> Hydroacoustic measurements with an echosounder Simrad EK60 at frequency 38kHz , , measuring boards, scales, dissection equipment, tubs &amp; buckets, different sampling protocols, CTD probe with data processing software. Biological data (length, weight, sex, maturity etc.) are recorded at sea in the dedicated desktop application called MorskaAkustyka.</p> <p><b>Data capture documentation:</b> See survey manual: <a href="http://doi.org/10.17895/ices.pub.3368">http://doi.org/10.17895/ices.pub.3368</a></p> <p><b>Quality checks documentation:</b> Y <a href="https://dcf.mir.gdynia.pl/?page_id=367">https://dcf.mir.gdynia.pl/?page_id=367</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b> <i>npzdr.pl</i> (national programme for fisheries data collection) – not accessible through a website, access limited to authorized personnel. The database module for biological data collected in acoustic surveys has been developed in 2021. Acoustic data are stored in Internal Files Repository.</p>

**International database:**

ICES Acoustic Trawl Survey DB.

<https://www.ices.dk/data/data-portals/Pages/acoustic.aspx>

**Quality checks and data validation documentation:**

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

<https://acoustic.ices.dk/validationrules>

**Sample storage**

Storage description:

Otoliths from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS <http://doi.org/10.17895/ices.pub.3368>

**Data processing**

**Evaluation of data accuracy (bias and precision):** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the evaluation of data accuracy exists, provide some details in the textbox.

**Y**

**for acoustic measurements through calibration, see survey manual:**  
<http://doi.org/10.17895/ices.pub.3368>

**Editing and imputation methods:** Indicate with 'Y' (yes) or 'N' (no). If 'N' (no), indicate when (year) documentation will be available. Provide a link to a webpage where the documentation can be found. If no link is available, but documentation exists, provide a literature reference (author(s), year and type of publication - e.g. internal report). If no documentation on the editing and imputation methods exists, provide some details in the textbox.

**N** – not performed at national level but at end-user level (ICES).

ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction.

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

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

Data quality control checks are performed by ICES data officers before data are uploaded to the thematic portals are documented in the Quality Control Database (QC DB).

<https://www.ices.dk/data/tools/Pages/data-validation.aspx>

<https://acoustic.ices.dk/validationrules>

**Validation of the final dataset:** How are datasets validated (quality checked) before providing to end-user?  
Quality check by scientist before upload and validated by ICES during and after uploading to database

**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

**Sampling scheme identifier: Baltic Ichthyoplankton Survey**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: Baltic Ichthyoplankton Survey</b>
<b>Sampling scheme type: Research survey at sea</b>
<b>Observation type:</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words):  The main aim of the Baltic Ichthyoplankton Surveys is monitoring of the spatial distribution and abundance of fish eggs and larvae, with Baltic cod as the main target species. In addition to the ichthyoplankton sampling, a number of trawl hauls are conducted to obtain information on the adult cod, in particular on their fecundity and sex ratios. Furthermore, hydrological parameters are recorded throughout the survey area via CTD casts. The data resulting from these surveys are utilized to produce a fishery independent SSB estimate as well as a larval index, which are used in the stock assessment of Baltic cod.
<b>Description of the population</b>
<b>Population targeted:</b> The main target species is Baltic cod ( <i>Gadus morhua</i> ). However, depending on the time of sampling, eggs and larvae of other species are caught as well, such as e.g. sprat ( <i>Sprattus sprattus</i> ), herring ( <i>Clupea harengus</i> ) and flounder ( <i>Platichthys flesus</i> ) as well as several non-commercial species.
<b>Population sampled:</b> Same as described above under “Population targeted”.
<b>Stratification:</b> The surveys are carried out on a regularly spaced station grid in the main spawning areas of Baltic cod.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> Several individual survey cruises are conducted each year in close collaboration between several institutes around the Baltic Sea. The surveys are conducted between March and November, aiming to cover the entire spawning season of the target species, Baltic cod. As spawning of Baltic cod is presently mainly restricted to the Bornholm Basin in ICES SD 25 due to the ambient hydrographic conditions, this area is also the main survey area which is covered by a standard station grid consisting of 45 stations. In addition, some cruises also cover adjacent areas (15 stations) to account for potential spatial extension of spawning activity.
<b>Is the sampling design compliant with the 4S principle?:</b> A fixed station allocation is used in the design



**Regional coordination:**

The Baltic Ichthyoplankton Surveys consist of several individual survey cruises, which are conducted each year in close collaboration between several institutes around the Baltic Sea. Participating nations are Denmark, Germany and Poland.

**Link to sampling design documentation:**

The Baltic Ichthyoplankton Surveys and the applied sampling design and sampling procedures as well as sample and data analyses have been reviewed and evaluated by ICES WGALES (Working Group on Atlantic Fish Larvae and Eggs Surveys):

ICES. 2018. Report of the Working Group on Atlantic Fish Larvae and Eggs Surveys (WGALES). 22-26 October. Lyngby, Denmark. ICES CM 2018/EOSG:04. 56 pp.

[https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/EOSG/2018/WG\\_ALES/WGALES%20report%202018.pdf](https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/EOSG/2018/WG_ALES/WGALES%20report%202018.pdf)

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

[NA](#)

**Compliance with international recommendations:**

NA

**Sampling implementation****Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**

NA

**Data capture****Means of data capture:**

Sorting equipment, stereo microscopes, different sampling protocols, CTD probe with data processing software.

**Data capture documentation:**

NA

**Quality checks documentation:**

NA

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

No deviations

**Sampling scheme identifier: Baltic at sea**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: Baltic at sea</b>
<b>Sampling scheme type: Commercial fishing trip</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
<p>Short description (max 100 words):</p> <p>Determination of the sampling scheme was based on fishing areas and type of sampling. The following sampling scheme is aiming to collect length and biological samples from commercial catches at sea for all species listed in Table 1 of the EU MAP Delegated Decision annex. Additionally, observation of presence of PETS is conducted. The scheme covers the Baltic Sea.</p>
<b>Description of the population</b>
<p><b>Population targeted:</b></p> <p>The target population consists of all vessels that were active in 2018-2020. The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.</p> <p><b>Population sampled:</b></p> <p>The coverage of target population equals 100%.</p> <p><b>Stratification:</b></p> <p>Population is stratified based on the vessel's length category. The following strata were defined:</p> <ul style="list-style-type: none"> <li>● BAL VL0010 – Baltic vessels under 10 meters in length (list of 537 vessels)</li> <li>● BAL VL1012 – Baltic vessels between 10 and 12 meters in length (list of 131 vessels)</li> <li>● BAL VL1218 – Baltic vessels between 12 and 18 meters in length (list of 59 vessels)</li> <li>● BAL VL1824 – Baltic vessels between 18 and 24 meters in length (list of 61 vessels)</li> <li>● BAL VL2440 – Baltic vessels between 24 and 40 meters in length (list of 51 vessels)</li> </ul> <p>The main advantage of stratifying the population by vessel length categories is that every vessel belongs to exactly one group. Additionally, such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the sampling scheme is also stratified by quarters, with various sampling intensities assigned to each quarter calculated based on the historical data. The list of primary sampling units is drawn separately for each quarter.</p>
<b>Sampling design and protocols</b>
<p><b>Sampling design description:</b></p> <p>All vessels that were active (at least one fishing trip) in 2018-2020 make a list that is proxy for selecting the PSUs. This methodology is in line with the WKPICS 2013.</p> <p>In order to maintain the continuity of the sampling intensity compared to the previous years, the annual number of samples to be collected during 2022-2024 period is at similar level as during the previous multiannual programs (2014-2021). Sampling is based on a quarterly basis. For each group of PSUs and quarters, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. To define the sampling intensity per each stratum</p>

per quarter, the half of the total annual number of samples was distributed proportionally to the quarterly distribution of landings and the second half of the total number of samples was distributed proportionally to the total number of trips. It was decided to include both parameters in order to distribute the sampling effort reflecting the different segments of the fishing fleet. So to take into consideration vessels that have the bigger share in total catches (i.e. larger vessels) as well as vessels that have much more fishing trips but small catches (i.e. smaller vessels, active mainly in a coastal fishery).

Regarding the sample selection, for each quarter and for each stratum a list of vessels will be randomly selected with replacement with unequal probability from a sampling frame. The number of vessels selected will be overrated, to take into account potential refusals and to avoid additional draws. In case, the selected number of vessels will not be enough (more refusals than expected, e.g. lack of contact with the vessel, refusal to take observer on board or provide landed fish for sampling on shore), the non-probabilistic (based on expert knowledge) vessel selection will be carried out to maintain the desired number of vessels trips to sample. The complementary trip will be chosen depending on the observer availability. In the next step the concurrent hauls and species sampling will be carried out on board. Catch fraction which is used is 'Catch'. List of vessels selected for sampling will be recorded in a register. This register will contain information on date of selection, date the vessel was contacted to arrange sampling, information if contact with the vessel was successful or not, vessel's owner acceptance or refusal to be sampled, as well as reasons in case of refusal.

**Is the sampling design compliant with the 4S principle?:**

Y

**Regional coordination:**

N

**Link to sampling design documentation:**

<https://dcf.mir.gdynia.pl/wp-content/uploads/2021/10/DCF-Sampling-Design-2022-2024.pdf>

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

No standalone sampling protocol was created so far for Baltic at sea. When conducting the sampling, we are following the ICES BITS and BIAS manual.

**Compliance with international recommendations:**

Y

**Sampling implementation**

**Recording of refusal rate:**

Y

**Monitoring of sampling progress within the sampling year:**

There is a set of tools created to monitor the sampling progress:

MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.

The other tool is the ‘Sampling plan achievement monitoring application’. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.

Additionally, a set of R scripts was also created, which summarizes the progress made.

All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. Basing on the tools, the managers are making decisions whether there should be some extra sampling carried out – not probabilistic, basing on the expert knowledge, to supply the sufficient number of samples. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

### **Data capture**

#### **Means of data capture:**

Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

#### **Data capture documentation:**

No standalone sampling protocol was created so far for Baltic at sea. When conducting the sampling, we are following the ICES BITS and BIAS manual.

Data is captured on paper and transcribed to a centralised database system through a dedicated web application as soon as possible. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

#### **Quality checks documentation:**

Y,

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

### **Data storage**

#### **National database:**

NPZDR, database is only accessible from the intranet

#### **International database:**

RDB-FishFrame (ICES) - <https://www.rdb-fishframe.org/ices> ,

RDBES (ICES) - <https://sboxrdbes.ices.dk/>

Intercatch(ICES)- <https://intercatch.ices.dk/>,

STECF Fisheries Dependent Information Database (JRC) -<https://datacollection.jrc.ec.europa.eu/dc/fdi>

#### **Quality checks and data validation documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

### **Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

### Data processing

#### Evaluation of data accuracy (bias and precision):

Y, [https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

#### Editing and imputation methods:

N,

In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

#### Quality document associated to a dataset:

N

#### Validation of the final dataset:

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

### Sampling scheme identifier: Baltic on shore

**MS :** POL

**Region:** Baltic Sea

**Sampling scheme identifier:** Baltic on shore

**Sampling scheme type:** Commercial fishing trip

**Observation type:** SciObsOnShore

**Time period of validity:** 2022-2024

Short description (max 100 words):

Determination of the sampling scheme was based on fishing areas and type of sampling. The sampling scheme is aiming to collect length and biological samples from commercial catches on shore for main commercial species listed in Table 1 of the EU MAP Delegated Decision annex. The scheme covers the Baltic Sea.

#### Description of the population

##### Population targeted:

The target population consists of all vessels that were active in 2018-2020. The primary sampling unit applied in the sampling program is vessel\*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.

##### Population sampled:

The coverage of target population equals 100%.

**Stratification:**

Population is stratified based on the vessel's length category. The following strata were defined:

- BAL VL0010 – Baltic vessels under 10 meters in length (list of 537 vessels)
- BAL VL1012 – Baltic vessels between 10 and 12 meters in length (list of 131 vessels)
- BAL VL1218 – Baltic vessels between 12 and 18 meters in length (list of 59 vessels)
- BAL VL1824 – Baltic vessels between 18 and 24 meters in length (list of 61 vessels)
- BAL VL2440 – Baltic vessels between 24 and 40 meters in length (list of 51 vessels)

The main advantage of stratifying the population by vessel length categories is that every vessel belongs to exactly one group. Additionally, such approach was found to be very flexible in case of sudden changes in the fisheries caused by e.g. change in a legislation, natural causes. Moreover, the sampling scheme is also stratified by quarters, with various sampling intensities assigned to each quarter calculated based on the historical data. The list of primary sampling units is drawn separately for each quarter.

**Sampling design and protocols****Sampling design description:**

All vessels that were active (at least one fishing trip) in 2018-2020 make a list that is proxy for selecting the PSUs. This methodology is in line with the WKPICS 2013.

In order to maintain the continuity of the sampling intensity compared to the previous years, the annual number of samples to be collected during 2022-2024 period is at similar level as during the previous multiannual programs (2014-2021). Sampling is based on a quarterly basis. For each group of PSUs and quarters, an average annual catch in kg and an average annual number of trips were calculated using official catch statistics from the period 2018-2020. To define the sampling intensity per each stratum per quarter, the half of the total annual number of samples was distributed proportionally to the quarterly distribution of landings and the second half of the total number of samples was distributed proportionally to the total number of trips. It was decided to include both parameters in order to distribute the sampling effort reflecting the different segments of the fishing fleet. So to take into consideration vessels that have the bigger share in total catches (i.e. larger vessels) as well as vessels that have much more fishing trips but small catches (i.e. smaller vessels, active mainly in a coastal fishery).

Regarding the sample selection, for each quarter and for each stratum a list of vessels will be randomly selected with replacement with unequal probability from a sampling frame. The number of vessels selected will be overrated, to take into account potential refusals and to avoid additional draws. In case, the selected number of vessels will not be enough (more refusals than expected, e.g. lack of contact with the vessel, refusal to take observer on board or provide landed fish for sampling on shore), the non-probabilistic (based on expert knowledge) vessel selection will be carried out to maintain the desired number of vessels trips to sample. The complementary trip will be chosen depending on the observer availability. In the next step the sample from the last hauls will be taken and species sampling will be carried out on board. Catch fraction used is 'Lan'. List of vessels selected for sampling will be recorded in a register. This register will contain information on date of selection, date the vessel was contacted to arrange sampling, information if contact with the vessel was successful or not, vessel's owner acceptance or refusal to be sampled, as well as reasons in case of refusal.

**Is the sampling design compliant with the 4S principle?:**

Y

**Regional coordination:**

N

**Link to sampling design documentation:**

<https://dcf.mir.gdynia.pl/wp-content/uploads/2021/10/DCF-Sampling-Design-2022-2024.pdf>

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

No standalone sampling protocol was created so far for Baltic on shore. When conducting the sampling, we are following the ICES BITS and BIAS manual.

**Compliance with international recommendations:**

Y

**Sampling implementation**

**Recording of refusal rate:**

Y

**Monitoring of sampling progress within the sampling year:**

There is a set of tools created to monitor the sampling progress:

MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.

The other tool is the 'Sampling plan achievement monitoring application'. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.

Additionally, a set of R scripts was also created, which summarizes the progress made.

All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. Basing on the tools, the managers are making decisions whether there should be some extra sampling carried out – not probabilistic, basing on the expert knowledge, to supply the sufficient number of samples. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

**Data capture**

**Means of data capture:**

Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

**Data capture documentation:**

No standalone sampling protocol was created so far for Baltic on shore. When conducting the sampling, we are following the ICES BITS and BIAS manual.

Data is captured on paper and transcribed to a centralised database system through a dedicated web application as soon as possible. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

<p><b>Quality checks documentation:</b> Y, <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b> NPZDR, database is only accessible from the intranet</p> <p><b>International database:</b> RDB-FishFrame (ICES) - <a href="https://www.rdb-fishframe.org/ices">https://www.rdb-fishframe.org/ices</a> , RDBES (ICES) - <a href="https://sboxrdbes.ices.dk/">https://sboxrdbes.ices.dk/</a> Intercatch(ICES)- <a href="https://intercatch.ices.dk/">https://intercatch.ices.dk/</a>, STECF Fisheries Dependent Information Database (JRC) -<a href="https://datacollection.jrc.ec.europa.eu/dc/fdi">https://datacollection.jrc.ec.europa.eu/dc/fdi</a></p> <p><b>Quality checks and data validation documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Sample storage</b></p> <p>Storage description:</p> <p>Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).</p> <p>Sample analysis: Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <a href="https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx">https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx</a> and ICES WGBIFS <a href="https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133">https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133</a></p>
<p><b>Data processing</b></p>
<p><b>Evaluation of data accuracy (bias and precision):</b> Y, <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p> <p><b>Editing and imputation methods:</b> N, In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.</p> <p><b>Quality document associated to a dataset:</b> N</p> <p><b>Validation of the final dataset:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>



**Sampling scheme identifier: North sea and Eastern Arctic at sea**

<b>MS : POL</b>
<b>Region: North Sea and Eastern Arctic</b>
<b>Sampling scheme identifier: North sea and Eastern Arctic at sea</b>
<b>Sampling scheme type: Commercial fishing trip</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Under the EU Data Collection Framework, based on the activity of the commercial fishing vessels, Poland has selected for sampling the long distance fishery targeting demersal species, i.e. Cod ( <i>Gadus morhua</i> ) in the region of North Atlantic and Eastern Arctic. Saithe ( <i>Pollachius virens</i> ) and Haddock ( <i>Melanogrammus aeglefinus</i> ) are also selected for biological sampling if caught as a bycatch. Additionally, observation of presence of PETS is conducted.
<b>Description of the population</b>
<b>Population targeted:</b> The Polish fishery in that area is targeting mainly cod ( <i>Gadus morhua</i> ), with <i>Pollachius virens</i> and <i>Melanogrammus aeglefinus</i> being usually the by-catch. This fishery is conducted usually by single Polish fishing vessel. The PSU is vessel-trip.  <b>Population sampled:</b> Freezer trawler targetting cod in NS&EA  <b>Stratification:</b> Freezer trawler targetting cod in NS&EA
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> As there is usually only one fishing vessel operating in this fishery, at-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. Over the period 2018-2020 on average seven fishing trips (PSU) were recorded annually for that fishery. Sampling of one fishing trip per year is sufficient to obtain representative collection of biological variables.  <b>Is the sampling design compliant with the 4S principle?:</b> N <b>Regional coordination:</b> N  <b>Link to sampling design documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf</a>  <b>Compliance with international recommendations:</b> Y <b>Link to sampling protocol documentation:</b>

<p><a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/DCF-Sampling-Design-and-Plan-description-Demersal-NSEA.pdf</a></p> <p><b>Compliance with international recommendations:</b> Y</p>
<p><b>Sampling implementation</b></p>
<p><b>Recording of refusal rate:</b> NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b> NA</p>
<p><b>Data capture</b></p>
<p><b>Means of data capture:</b> Measuring boards, scales, dissection equipment, tubs &amp; buckets, different sampling protocols.</p> <p><b>Data capture documentation:</b> No standalone sampling protocol was created so far for NSEA. When conducting the sampling, the ICES BITS manual is followed.</p> <p><b>Quality checks documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b> NPZDR, database is only accessible from the intranet</p> <p><b>International database:</b> RDB-FishFrame (ICES) - <a href="https://www.rdb-fishframe.org/ices">https://www.rdb-fishframe.org/ices</a> , RDBES (ICES) - <a href="https://sboxrdbes.ices.dk/">https://sboxrdbes.ices.dk/</a> Intercatch(ICES)- <a href="https://intercatch.ices.dk/">https://intercatch.ices.dk/</a>, STECF Fisheries Dependent Information Database (JRC) -<a href="https://datacollection.jrc.ec.europa.eu/dc/fdi">https://datacollection.jrc.ec.europa.eu/dc/fdi</a></p> <p><b>Quality checks and data validation documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Sample storage</b></p> <p>Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).</p> <p>Sample analysis: Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <a href="https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx">https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx</a> and ICES WGBIFS <a href="https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133">https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133</a></p>
<p><b>Data processing</b></p>

**Evaluation of data accuracy (bias and precision):**

Y, [https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

**Editing and imputation methods:**

N,

In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**

N

**Validation of the final dataset:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

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

No deviations

**Sampling scheme identifier: CECAF at sea sampling**

**MS :** POL

**Region:** CECAF

**Sampling scheme identifier:** CECAF at sea sampling

**Sampling scheme type:** Commercial fishing trip

**Observation type:** SciObsAtSea

**Time period of validity:** 2022-2024

Short description (max 100 words):

Under the EU Data Collection Framework, based on the activity of the commercial fishing vessels, the long distance fishery targeting small pelagic species in the CECAF area were selected for sampling. According to the multi-lateral agreement, the National Marine Fisheries Research Institute (NMFRI) from Poland coordinates the execution of biological data collection from the EU fisheries for small pelagics by freezer trawlers in the CECAF area and the Wageningen Marine Research (WMR) from The Netherlands will cooperate with NMFRI in data validation, data processing and data delivery to the relevant end-users. The observation of presence of PETS is included in the sampling scheme. The current agreement is valid until the end of 2023 with an option for further extension.

**Description of the population****Population targeted:**

The Polish fishery in that area is targeting small pelagic species. This fishery is conducted usually by single Polish fishing vessel. However, under the multi-lateral agreement ([https://dcf.mir.gdynia.pl/?page\\_id=365](https://dcf.mir.gdynia.pl/?page_id=365)) Poland is coordinating data collection from whole EU fishing fleet targeting small pelagic species in the CECAF area. The PSU is vessel-trip.

**Population sampled:**

EU Pelagic freezer trawlers operating in the CECAF

<p><b>Stratification:</b> EU pelagic freezer trawler operating by main CECAF fishing areas (34.1.3 and 34.3.1) by quarter</p>
<p><b>Sampling design and protocols</b></p>
<p><b>Sampling design description:</b> At-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. Two observer trips per quarter and per fishing area are planned.</p> <p><b>Is the sampling design compliant with the 4S principle?:</b> N</p> <p><b>Regional coordination:</b> Y Multilateral agreement on CECAF sampling (<a href="https://dcf.mir.gdynia.pl/?page_id=365">https://dcf.mir.gdynia.pl/?page_id=365</a>), Member states: DEU - LVA - LTU - NLD - POL</p> <p><b>Link to sampling design documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf</a></p> <p><b>Compliance with international recommendations:</b> Y</p> <p><b>Link to sampling protocol documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf</a></p> <p><b>Compliance with international recommendations:</b> Y</p>
<p><b>Sampling implementation</b></p>
<p><b>Recording of refusal rate:</b> NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b> NA</p>
<p><b>Data capture</b></p>
<p><b>Means of data capture:</b> Measuring boards, scales, dissection equipment, tubs &amp; buckets, different sampling protocols.</p> <p><b>Data capture documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2018/05/Manual-for-scientific-observers-on-EU-pelagic-trawlers-in-CECAF.pdf</a></p> <p><b>Quality checks documentation:</b> Collected data are validated during recording in a dedicated desktop application called Billie, provided by NLD. No documentation available.</p>
<p><b>Data storage</b></p>

**National database:**

The data files from the desktop application Billie are stored in the internal files repository. Data collection coordinated and executed by POL and data provision executed by NLD under joint sampling programme based on multilateral agreement. Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**International database:**

NA

**Quality checks and data validation documentation:**

Data collected in CECAF areas are recorded in a dedicated desktop application called Billie, which was provided by NLD. The application performs basic validation of the input data. Advanced data checks are applied after the data is transferred to the database in NLD, where data quality check report is produced.

**Sample storage**

Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

**Data processing****Evaluation of data accuracy (bias and precision):**

N, Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**Editing and imputation methods:**

N,

Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**Quality document associated to a dataset:**

N

**Validation of the final dataset:**

Data collected in CECAF are transferred to NLD for processing, further quality checks and transmission to CECAF WG.

**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

**Sampling scheme identifier: SPRFMO at sea sampling**

<b>MS : POL</b>
<b>Region: SPRFMO</b>
<b>Sampling scheme identifier: SPRFMO at sea sampling</b>
<b>Sampling scheme type: Commercial fishing trip</b>
<b>Observation type: SciObsAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): On the basis of a multilateral agreement between Germany, Lithuania, Netherlands and Poland, since 2017 Poland has been coordinating a joint sampling programme for the collection of biological data from pelagic fisheries in SPRFMO waters. Sampling is carried out on EU vessels active in pelagic fisheries in the South Pacific. Scientific observers from the National Marine Fisheries Research Institute (NMFRI) from Poland collect data from catch sampling, length distribution and biological parameters of fish in accordance to the requirements of the SPRFMO. The observation of presence of PETS is included in the sampling scheme. The current multi-lateral agreement is valid until the end of 2023 with an option for further extension.
<b>Description of the population</b>
<b>Population targeted:</b> EU vessels which conduct pelagic fisheries in the South Pacific. The PSU is vessel-trip.
<b>Population sampled:</b> Pelagic trawlers operating in the SPRFMO
<b>Stratification:</b> Pelagic trawlers operating in the SPRFMO
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> At-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. According to the SPRFMO requirements (" <i>CMM 01-2021; Conservation and Management Measure for Trachurus Murphyi</i> " – updated annually), a minimum of 10% of all fishing trips shall be observed/sampled ( <a href="https://www.sprfmo.int/measures/">https://www.sprfmo.int/measures/</a> ) Data are collected and transmitted to the SPRFMO according to the SPRFMO " <i>CMM 02-2021; Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data</i> " – updated annually ( <a href="https://www.sprfmo.int/measures/">https://www.sprfmo.int/measures/</a> )
<b>Is the sampling design compliant with the 4S principle?:</b> N
<b>Regional coordination:</b> Y Multilateral agreement on SPRFMO sampling ( <a href="https://dcf.mir.gdynia.pl/?page_id=365">https://dcf.mir.gdynia.pl/?page_id=365</a> ), Member states: DEU - LTU - NLD - POL

<p><b>Link to sampling design documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf</a></p> <p><b>Compliance with international recommendations:</b>  Y</p> <p><b>Link to sampling protocol documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf</a></p> <p><b>Compliance with international recommendations:</b>  Y</p>
<p><b>Sampling implementation</b></p>
<p><b>Recording of refusal rate:</b>  NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b>  NA</p>
<p><b>Data capture</b></p>
<p><b>Means of data capture:</b>  Measuring boards, scales, dissection equipment, tubs &amp; buckets, different sampling protocols.</p> <p><b>Data capture documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2016/10/CMR-2015-01-Observer-manual-Pacific-v6.pdf</a></p> <p><b>Quality checks documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b>  Temporary database in Excel</p> <p><b>International database:</b>  Internal SPRFMO database</p> <p><b>Quality checks and data validation documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf</a></p>
<p><b>Sample storage</b></p> <p>Otoliths and scales from both surveys and commercial sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).</p> <p>Sample analysis:  Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <a href="https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx">https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx</a> and</p>

ICES	WGBIFS
<a href="https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133">https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133</a>	
<b>Data processing</b>	
<b>Evaluation of data accuracy (bias and precision):</b> Y, <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf</a>	
<b>Editing and imputation methods:</b> N - In case of any gaps, imputation is not performed at national level but at Stock Data Coordination level in the SPRFMO. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.	
<b>Quality document associated to a dataset:</b> N	
<b>Validation of the final dataset:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/SPRFMO_data_quality_assurance.pdf</a>	
<b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations	

### Sampling scheme identifier: Baltic small pelagic RSP

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: Baltic small pelagic RSP</b>
<b>Sampling scheme type: Commercial fishing trip</b>
<b>Observation type: SelfAtSea</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): The samples are collected according to the rules agreed at the Intersessional Subgroup of the RCG Baltic 'Case study of fisheries for small pelagic's in the Baltic'. The sampling scheme is aiming to collect sprat and herring to estimate length-composition, numbers at age, and mean weight at age of commercial catches.
<b>Description of the population</b>
<b>Population targeted:</b> The target population consists of vessels which were active at least once in the period February-April in 2020, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m.  The primary sampling unit applied in the sampling program is vessel*trip. The list of vessels is used as a proxy to select a trip, because the list of trips is not known in advance.
<b>Population sampled:</b> The coverage of target population equals 100%.



**Stratification:**

Total number of vessels: 56 (using Random Sampling application)  
In total 30 vessels will be selected for 3 months case study  
(10 per 1 month).

**Sampling design and protocols****Sampling design description:**

All vessels that were active in the period February-April in 2020, were using OTM, had total landings 10t minimum, were targeting sprat or herring (over 95%) and have length above 17.5m. This vessels' list is a proxy for selecting the PSUs.

A coordinator calls to the contact persons from the 10 selected vessels during the first 3 working days of the month (to check if the boat is willing to cooperate). During this time a coordinator can ask for the sample from first 1-2 boats from the list which was willing to cooperate if they go for fishing in the next couple of days.

In the next days of the month, a coordinator calls to the contact person from the selected vessel, maximum five times per week. The calls are to be made when the weather forecast is good, and when the staff is available to pick up the sample from the harbour.

All contacts are recorded including refusals. The boat which is definitely not willing to cooperate is blacklisted for a period of 1 year.

A coordinator asks for a sample from the next trip. The sample should be taken from unsorted catch from the first haul.

**Is the sampling design compliant with the 4S principle?:**

Yes

**Regional coordination:**

Yes, although there is no formal agreement. This regional sampling of small pelagic is conducted on the basis of the NC Baltic decision. In 2022 this sampling scheme will be conducted as part of the Baltic small pelagic Regional Sampling Plan (RSP), as decided by NC at the 2021 RCG Decision Meeting.

**Link to sampling design documentation:**

<https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/Small-Pelagic-Pilot-Plan2020.pdf>

**Compliance with international recommendations:**

Yes

**Link to sampling protocol documentation:**

No standalone sampling protocol was created so far for Small Pelagics Pilot. When conducting the sampling, the ICES BITS and BIAS manuals are applied.

**Compliance with international recommendations:**

Y

**Sampling implementation****Recording of refusal rate:**

Yes

**Monitoring of sampling progress within the sampling year:**

There is a set of tools created to monitor the sampling progress:

MIRlottery is the system which stores the information about vessels drawn and their status (e.g. done, refused, cancelled). It is possible to display some basic statistics there with the summary of the implementation rate per stratum per quarter.

The other tool is the 'Sampling plan achievement monitoring application'. This application was created in 2020 as a manager tool with the purpose of supplying an easy way to monitor the achievement of the sampling plan. What is already developed is the set of analysis displaying number of trips, samples, specimens measured for age and length for a species and year selected by a user.

Additionally, a set of R scripts was also created, which summarizes the progress made.

All the tools above, are used on a daily basis but especially during the quarterly team meetings, where the sampling plan fulfilment is analysed. There is also analysis of refusals carried out, and a trial made to lower the refusal rate. This whole effort is being made to make sure that the best quality of sampling is carried out.

### **Data capture**

#### **Means of data capture:**

Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols.

#### **Data capture documentation:**

No standalone sampling protocol was created so far for Small Pelagic Pilot. When conducting the sampling, the ICES BITS and BIAS manuals are applied.

Data is captured on paper and transcribed to a centralised database system through a dedicated web application. Data is entered to the database in a two-stage process. Newly entered data are attributed with a status indicating that they are waiting for approval. Then, another person verifies the data and approves it.

#### **Quality checks documentation:**

Yes,

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

### **Data storage**

#### **National database:**

NPZDR, database is only accessible from the intranet

#### **International database:**

RDB-FishFrame (ICES) - <https://www.rdb-fishframe.org/ices> ,

RDBES (ICES) - <https://sboxrdbes.ices.dk/>

Intercatch(ICES)- <https://intercatch.ices.dk/>,

#### **Quality checks and data validation documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

### **Sample storage**

Storage description:

Otoliths and scales from both surveys and commercial sampling are stored in the archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

**Data processing**

**Evaluation of data accuracy (bias and precision):**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

**Editing and imputation methods:**

No,

In case of any gaps in the sampling strata, imputation is not performed at national level but at Stock Data Coordination level. Data are provided to end user "as-is" (as collected, validated and recorded in national database). In case of gaps in ALK or WLK, average values are used if available.

**Quality document associated to a dataset:**

No

**Validation of the final dataset:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck\\_Description.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf)

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

No deviations

**Sampling scheme identifier: diad\_troll\_offshore**

**MS : POL**

**Region: Baltic Sea**

**Sampling scheme identifier: diad\_troll\_offshore**

**Sampling scheme type: recreational (on site surveys)**

**Observation type: SciObsAtSea**

**Time period of validity: 2022-2024**

Short description (max 100 words):

Sampling scheme aiming at collecting biological samples (length, weight, sex, age, maturity stage), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-board observations.

**Description of the population**

**Population targeted:**

The target species are Atlantic salmon *Salmo salar* and sea trout *Salmo trutta* in ICES SD 24-26.

**Population sampled:**

Baltic Salmon and sea trout

**Stratification:**

Polish trolling fisheries operates in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> quarter of the year (covering whole fishing season). The applied unit is a fishing boat-day/trip.

### **Sampling design and protocols**

#### **Sampling design description:**

The sampling design takes into account one trip per month. The number of planned on-board observations is 7 per year. Because of the formal procedures the trolling boats are randomly sampled only from the group of commercial recreational boats (taking on board up to 4-6 recreational fishermen who are fishing under the interim or full-year permit/license purchased by the boats' owners). The GPS position is recorded three times during the trip (start, middle and end of fishing). In addition, number of anglers on boat and fishing rods are recorded in the protocol.

As a standard procedure, if bycatch occurs during at sea sampling data on bycatch is collected.

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

#### **Is the sampling design compliant with the 4S principle?:**

NA

#### **Regional coordination:**

N

#### **Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

#### **Compliance with international recommendations:**

N

#### **Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

#### **Compliance with international recommendations:**

N

### **Sampling implementation**

#### **Recording of refusal rate:**

Y

#### **Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

### **Data capture**

#### **Means of data capture:**

Measuring boards, scales, dissection equipment, tubs & buckets, different sampling protocols, GPS. Biological data (length, weight, sex, maturity etc.) are recorded at sea and stored in the excel file.

**Data capture documentation:**

N

Details are provided in this textbox.

**Quality checks documentation:**

N

Details are provided in this textbox.

**Data storage**

**National database:**

NA

**International database:**

NA

**Quality checks and data validation documentation:**

N

Details are provided in this textbox.

**Sample storage**

Storage description:

Scales from sampling are stored in archive of the National Marine Fisheries Research Institute in Gdynia. Scale samples are dried and stored in the paper envelopes with a biological information about each specimen.

Sample analysis:

Biological analysis follows the guidelines established by ICES WKADS and associated workshops:  
<https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2011/WKADS/WKADS%202011.pdf>

**Data processing**

**Evaluation of data accuracy (bias and precision):**

N

Details are provided in this textbox

**Editing and imputation methods:**

N

Details are provided in this textbox

**Quality document associated to a dataset:**

There is no a document summarising the estimation process followed.

**Validation of the final dataset:**

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.

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

No deviations

**Sampling scheme identifier: diad\_troll\_harb**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: diad_troll_harb</b>
<b>Sampling scheme type: recreational (on site surveys)</b>
<b>Observation type: SciObsOnShore</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-site observations in the harbors.
<b>Description of the population</b>
<b>Population targeted:</b> The target species are Atlantic salmon <i>Salmo salar</i> and sea trout <i>Salmo trutta</i> in ICES SD 24-26.
<b>Population sampled:</b> Baltic Salmon and sea trout
<b>Stratification:</b> Polish trolling fisheries operates in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1 <sup>st</sup> , 2 <sup>nd</sup> and 4 <sup>th</sup> quarter of the year (covering whole fishing season). The applied unit is a fishing boat-day/trip.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> The sampling design takes into account monthly on-site creel survey questionnaire interviews in harbors having high importance for salmon trolling fishing. Trolling boats are randomly sampled from both groups; commercial recreational boats and private fishing boats. The number of interviewed boats is selected randomly. The App dedicated to the survey is used by the observers. The refusal rate is recorded. The number of anglers on boat and fishing rods are recorded in the protocol. In addition, sociological data are collected. As a standard procedure, data on bycatch is collected, whenever recorded or reported.  The use of remote CCTV cameras for monitoring of recreational salmon trolling fishery effort proved to be a cost-efficient method providing accurate fishing effort estimates helping to reduce bias in recreational catch estimates. Remote CCTV cameras have been installed in two harbors i.e., Hel and Gdańsk Górkki Zachodnie which were defined during the Pilot Studies as the most important for salmon and sea trout recreational fishery and were also chosen because of availability of technical infrastructure. The cameras record boat movements between 04:00 and 18:00 each day. A high image frame rate; Full HD format (25 images per second) is set to ensure full coverage of the activity at each monitored marina and correct identification of trolling boats. Taking into account the capacity of cameras hard drives, data from them should be downloaded to the NMFRI server at three-month intervals.

To monitor trolling cruises frequency, catch per unit effort as well as catch species composition a self-sampling method of trolling catches has been applied. A fishing logbooks, containing cruise data as well as biological data of fish caught are distributed among the trolling boats' skippers/owners to fill-in on a voluntary basis.

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

Hartill B.W., Taylor S.M., Keller K., Weltersbach M.S. (2020). Digital camera monitoring of recreational fishing effort: Applications and challenges. *Fish and Fisheries*, 21: 204–215.

ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.

McCormick J.L., Meyer K.A. 2017. Sample Size Estimation for On-Site Creel Surveys. *North American Journal of Fisheries Management* 37:970–980.

Weltersbach M.S. 2013. Recreational fishery on salmon and sea trout. Planned research activities in Germany. WGBAST. Tallinn, 06.04.2013.

Weltersbach M.S., Kaiser F., Strehlow H.V. 2016. Surveying 2.0 - Using remote cameras to monitor a highly specialized recreational fishery in the Baltic Sea. Oral presentation. ICES Annual Science Conference, organized in Riga (Latvia), 19-23 September 2016.

**Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

**Sampling implementation**

**Recording of refusal rate:**

Y

**Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**

Measuring boards, scales, different sampling protocols, tablets. Biological data (length, weight) and catch composition are recorded and stored in the excel file. CCTV cameras are permanently installed in the harbors throughout the year.

**Data capture documentation:**

N

Details are provided in this textbox.

**Quality checks documentation:**

N

Details are provided in this textbox.

**Data storage**

**National database:**

NA

**International database:**

NA

**Quality checks and data validation documentation:**

N

Details are provided in this textbox.

**Sample storage**

Storage description:

Digitized questionnaires from sampling are stored in the archive of the National Marine Fisheries Research Institute in Gdynia. Video records from cameras are stored on hard drives.

Sample analysis:

ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.

Weltersbach M.S., Kaiser F., Strehlow H.V. 2016. Surveying 2.0 - Using remote cameras to monitor a highly specialized recreational fishery in the Baltic Sea. Oral presentation. ICES Annual Science Conference, organized in Riga (Latvia), 19-23 September 2016.

**Data processing**

**Evaluation of data accuracy (bias and precision):**

N

Details are provided in this textbox

**Editing and imputation methods:**

N

Details are provided in this textbox

**Quality document associated to a dataset:**

There is no document summarising the estimation process followed.

**Validation of the final dataset:**

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.



**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

**Sampling scheme identifier: diad\_troll\_web**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: diad_troll_web</b>
<b>Sampling scheme type: recreational (off site surveys)</b>
<b>Observation type: SciObsOnShore</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct off-site survey.
<b>Description of the population</b>
<b>Population targeted:</b> The target species are Atlantic salmon <i>Salmo salar</i> and sea trout <i>Salmo trutta</i> in ICES SD 24-26.
<b>Population sampled:</b> Baltic Salmon and sea trout
<b>Stratification:</b> Polish trolling fisheries operate in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26) where the mixed-stock fisheries of salmon occur (ICES SD 22-31). The temporal stratification covers 1 <sup>st</sup> , 2 <sup>nd</sup> and 4 <sup>th</sup> quarter of the year (covering the whole fishing season). The applied unit is a fishing boat-day/trip.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis on diadromous fish species. This survey is based on a web-site questionnaire including information about the survey and describing the aim of this work with an instruction on how to fill a web-based questionnaire.  Information about the survey is distributed and made available on the Internet platforms, social media and NMFRI web-site: <a href="http://ankieta2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/">http://ankieta2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/</a> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf</a> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf</a>
<b>Is the sampling design compliant with the 4S principle?:</b> NA
<b>Regional coordination:</b> N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

N

**Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

N

**Sampling implementation****Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

**Data capture****Means of data capture:**

The on-line questionnaire is available throughout each year (opened 1<sup>st</sup> of January and blocked 31<sup>st</sup> of December).

**Data capture documentation:**

N

Details are provided in this textbox.

**Quality checks documentation:**

N

Details are provided in this textbox.

**Data storage****National database:**

NA

**International database:**

NA

**Quality checks and data validation documentation:**

N

Details are provided in this textbox.

**Sample storage**

Storage description:

Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.

<p>Sample analysis: Data are analyzed with the use of R script and visualized using the Shiny R package.</p>
<p><b>Data processing</b></p>
<p><b>Evaluation of data accuracy (bias and precision):</b> N Details are provided in this textbox</p>
<p><b>Editing and imputation methods:</b> N Details are provided in this textbox</p>
<p><b>Quality document associated to a dataset:</b> There is no document summarising the estimation process followed.</p>
<p><b>Validation of the final dataset:</b> Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.</p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>

**Sampling scheme identifier: diad\_coastal**

<p><b>MS : POL</b></p>
<p><b>Region: Baltic Sea</b></p>
<p><b>Sampling scheme identifier: diad_coastal</b></p>
<p><b>Sampling scheme type: recreational (on site surveys)</b></p>
<p><b>Observation type: SciObsOnShore</b></p>
<p><b>Time period of validity: 2022-2024</b></p>
<p>Short description (max 100 words): Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct on-site observations from the shore.</p>
<p><b>Description of the population</b></p>
<p><b>Population targeted:</b> The target species are sea trout <i>Salmo trutta</i> and eel <i>Anguilla anguilla</i> in ICES SD 24-26.</p>
<p><b>Population sampled:</b> Baltic sea trout and eel</p>
<p><b>Stratification:</b> Polish anglers fish in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26). The temporal stratification covers 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarter of the year (covering the whole fishing season). The applied unit is a fishing day.</p>
<p><b>Sampling design and protocols</b></p>

**Sampling design description:**

The sampling design takes into account monthly on-site creel survey questionnaire interviews. This method is based on a digital questionnaire installed on tablets enabling a direct interviews among anglers fishing from the shore for sea trout and eel. The refusal rate is recorded. In addition, sociological data are collected. As a standard procedure, data on bycatch is collected, whenever recorded or reported.

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

McCormick J.L., Meyer K.A. 2017. Sample Size Estimation for On-Site Creel Surveys. North American Journal of Fisheries Management 37:970–980.

Weltersbach M.S. 2013. Recreational fishery on salmon and sea trout. Planned research activities in Germany. WGBAST. Tallinn, 06.04.2013.

**Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species\\_rev1.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf)

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

**Sampling implementation****Recording of refusal rate:**

Y

**Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

**Data capture****Means of data capture:**

Measuring boards, scales, different sampling protocols, tablets. Biological data (length, weight) and catch composition are recorded and stored in the excel file.

**Data capture documentation:**

<p>N Details are provided in this textbox.</p> <p><b>Quality checks documentation:</b> N Details are provided in this textbox.</p>
<p><b>Data storage</b></p>
<p><b>National database:</b> NA</p> <p><b>International database:</b> NA</p> <p><b>Quality checks and data validation documentation:</b> N Details are provided in this textbox.</p>
<p><b>Sample storage</b></p>
<p>Storage description: Digitized questionnaires from sampling are stored in the archive of the National Marine Fisheries Research Institute in Gdynia.</p> <p>Sample analysis: ICES (2018). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 11–15 June 2015, Faro, Portugal. ICES CM 2018/EOSG:19. 111 pp.</p>
<p><b>Data processing</b></p>
<p><b>Evaluation of data accuracy (bias and precision):</b> N Details are provided in this textbox</p> <p><b>Editing and imputation methods:</b> N Details are provided in this textbox</p> <p><b>Quality document associated to a dataset:</b> There is no document summarising the estimation process followed.</p> <p><b>Validation of the final dataset:</b> Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.</p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>

**Sampling scheme identifier:** diad\_coastal\_web

<b>MS :</b> POL
<b>Region:</b> Baltic Sea

<b>Sampling scheme identifier: diad_coastal_web</b>
<b>Sampling scheme type: recreational (off site surveys)</b>
<b>Observation type: SciObsOnShore</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Sampling scheme aiming at collecting biological samples (length, weight), numbers and catch composition from recreational trolling on-shore catches conducted in Polish Marine Areas. The sampling scheme concerns direct off-site survey.
<b>Description of the population</b>
<b>Population targeted:</b> The target species are sea trout <i>Salmo trutta</i> and eel <i>Anguilla anguilla</i> in ICES SD 24-26.
<b>Population sampled:</b> Baltic sea trout and eel
<b>Stratification:</b> Polish anglers fish in the Main Basin of the Baltic Sea (Polish Marine Areas SD 24-26). The temporal stratification covers 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> quarter of the year (covering the whole fishing season). The applied unit is a fishing day.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> An annual off-site survey is targeting in general sea recreational fishing in Polish Maritime Waters with a particular emphasis on diadromous fish species. This survey is based on a web-site questionnaire including information about the survey and describing the aim of this work with an instruction on how to fill a web-based questionnaire.  Information about the survey is distributed and made available on the Internet platforms, social media and NMFRI web-site: <a href="http://ankieta2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/">http://ankieta2.mir.gdynia.pl/sample-apps/Ankieta-wedkarska/</a> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf</a> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf</a>
<b>Is the sampling design compliant with the 4S principle?:</b> NA
<b>Regional coordination:</b> N
<b>Link to sampling design documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf</a> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf</a>
<b>Compliance with international recommendations:</b> N
<b>Link to sampling protocol documentation:</b>

<p><a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/Sampling-Plan-Marine-recreational-fisheries-for-Diadromous-species_rev1.pdf</a></p> <p><a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf</a></p> <p><b>Compliance with international recommendations:</b> N</p>
<b>Sampling implementation</b>
<p><b>Recording of refusal rate:</b> NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b> The sample stratification and digitization process is monitored on an on-going basis.</p>
<b>Data capture</b>
<p><b>Means of data capture:</b> The on-line questionnaire is available throughout each year (opened 1<sup>st</sup> of January and blocked 31<sup>st</sup> of December).</p> <p><b>Data capture documentation:</b> N Details are provided in this textbox.</p> <p><b>Quality checks documentation:</b> N Details are provided in this textbox.</p>
<b>Data storage</b>
<p><b>National database:</b> NA</p> <p><b>International database:</b> NA</p> <p><b>Quality checks and data validation documentation:</b> N Details are provided in this textbox.</p>
<b>Sample storage</b>
<p>Storage description: Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.</p> <p>Sample analysis: Data are analyzed with the use of R script and visualized using the Shiny R package.</p>
<b>Data processing</b>
<p><b>Evaluation of data accuracy (bias and precision):</b> N Details are provided in this textbox</p> <p><b>Editing and imputation methods:</b></p>

N

Details are provided in this textbox

**Quality document associated to a dataset:**

There is no document summarising the estimation process followed.

**Validation of the final dataset:**

Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.

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

No deviations

**Sampling scheme identifier: electro\_diad**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: electro_diad</b>
<b>Sampling scheme type: Diadromous (scientific)</b>
<b>Observation type: SciObs water body</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Sampling scheme aiming fishing for sea trout and salmon parr will be carried out using the electrofishing method. On their basis, the density of salmon and sea trout fry in individual age classes will be estimated. The research fishery will be carried out in 11 rivers of northern Poland, in at least 41 positions (sites) located in the areas of the spawning grounds of sea trout and salmon. The result of the work should be a set of data required by the WGBAST working group.
<b>Description of the population</b>
<b>Population targeted:</b> The target species are Atlantic salmon <i>Salmo salar</i> and sea trout <i>Salmo trutta</i> in ICES SD 24-26.
<b>Population sampled:</b> Baltic Salmon and sea trout
<b>Stratification:</b> The temporal stratification covers 3 <sup>rd</sup> quarter of the year. The applied fishing unit is a triple run of 50m long site. The parr density is expressed as a number of fish per 100m <sup>2</sup> .
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> An annual survey is targeting salmon and sea trout parr density is carried out in 11 rivers (Słupia, Reda, Łeba, Łupawa, Wieprza, Drwęca, Parsęta, Rega, Drawa, Ina, Zielona Struga) of northern Poland, in at least 40 sites. Electrofishing is the most widespread monitoring method for determination of young fish densities described by Bohlin et al. 1989. The temporal stratification covers 3 <sup>rd</sup> quarter of the year. In Poland, each sampled section of the stream is 50 m long. Fish are sampled in the upstream direction using backpack electrofishing gear. The applied fishing unit is triple run of 50m long site. All specimens are measured and archived on the fishing protocols. Raw data are stored in the excel file.



The number of young salmon and trout is estimated for each site separately, using the Carle and Strub (1978) Maximum Weighted Likelihood method for three consecutive catches. The parr density is expressed as a number of fish per 100m<sup>2</sup>.

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)

Bohlin T., Hamrin S., Heggberget T.G., Rasmussen G., Saltveit S.J. (1989). Electrofishing — Theory and practice with special emphasis on salmonids. *Hydrobiologia*, 173, 9–43.

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <https://doi.org/10.17895/ices.pub.7925>

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)

**Compliance with international recommendations:**

Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <https://doi.org/10.17895/ices.pub.7925>

**Sampling implementation**

**Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

**Data capture**

**Means of data capture:**

Measuring boards, scales, generator, dissection equipment, tubs & buckets, different sampling protocols, GPS. Biological data (e.g. length) are recorded in the field and stored in the excel file.

**Data capture documentation:**

N

Details are provided in this textbox.

**Quality checks documentation:**

N

Details are provided in this textbox.

**Data storage**

**National database:**

NA

**International database:**

NA
<p><b>Quality checks and data validation documentation:</b> N Details are provided in this textbox.</p>
<p><b>Sample storage</b></p> <p>Storage description: Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.</p> <p>Sample analysis: Data is analyzed with the use of statistical tools.</p>
<p><b>Data processing</b></p> <p><b>Evaluation of data accuracy (bias and precision):</b> N(2022)</p> <p><b>Editing and imputation methods:</b> N</p> <p><b>Quality document associated to a dataset:</b> There is no document summarising the estimation process followed.</p> <p><b>Validation of the final dataset:</b> Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.</p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>

**Sampling scheme identifier: counter\_diad**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: counter_diad</b>
<b>Sampling scheme type: Diadromous (scientific)</b>
<b>Observation type: EMA water body</b>
<b>Time period of validity: 2022-2024</b>
<p>Short description (max 100 words): Number of ascending individuals of sea trout and salmon will be recorded by automatic counters. Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Słupia, Drawa, Parsęta.</p>
<b>Description of the population</b>
<p><b>Population targeted:</b> The target species are Atlantic salmon <i>Salmo salar</i> and sea trout <i>Salmo trutta</i> in ICES SD 24-26.</p> <p><b>Population sampled:</b> Baltic Salmon and sea trout</p>
<b>Stratification:</b>

The temporal stratification covers the whole year.
<b>Sampling design and protocols</b>
<p><b>Sampling design description:</b>  Number of ascending individuals of sea trout and salmon are recorded by automatic VAKI Riverwatcher fish counters installed in the fish ladders. This type of counter are used on many rivers around the Baltic Sea (ICES 2021). Currently, it is planned to collect data from counters located on 3 main salmonid rivers – Słupia, Drawa, Parsęta.  The device is recording among others time data, water temperature, fish direction, fish length and short video sequence of particular fish. Data is recorded in the field and stored in the dedicated software. Data is analyzed with the use of statistical tools.</p> <p><b>Is the sampling design compliant with the 4S principle?:</b>  NA</p> <p><b>Regional coordination:</b>  N</p> <p><b>Link to sampling design documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf</a></p> <p><b>Compliance with international recommendations:</b>  Y</p> <p><b>Link to sampling protocol documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf</a></p> <p><b>Compliance with international recommendations:</b>  Y  ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <a href="https://doi.org/10.17895/ices.pub.7925">https://doi.org/10.17895/ices.pub.7925</a></p>
<b>Sampling implementation</b>
<p><b>Recording of refusal rate:</b>  NA</p> <p><b>Monitoring of sampling progress within the sampling year:</b>  The sample stratification and digitization process is monitored on an on-going basis.</p>
<b>Data capture</b>
<p><b>Means of data capture:</b>  Automatic fish counter with supporting devices. Data is recorded in the field and stored in the dedicated software.</p> <p><b>Data capture documentation:</b>  N  Details are provided in this textbox.</p> <p><b>Quality checks documentation:</b>  N  Details are provided in this textbox.</p>

<b>Data storage</b>
<p><b>National database:</b> NA</p> <p><b>International database:</b> NA</p> <p><b>Quality checks and data validation documentation:</b> N Details are provided in this textbox.</p>
<b>Sample storage</b>
<p>Storage description: Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.</p> <p>Sample analysis: Data are analyzed with the use of statistical tools.</p>
<b>Data processing</b>
<p><b>Evaluation of data accuracy (bias and precision):</b> N Details are provided in this textbox</p> <p><b>Editing and imputation methods:</b> N Details are provided in this textbox</p> <p><b>Quality document associated to a dataset:</b> There is no a document summarising the estimation process followed.</p> <p><b>Validation of the final dataset:</b> Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the WGBAST meeting.</p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>

**Sampling scheme identifier: rec\_diad**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: rec_diad</b>
<b>Sampling scheme type: Diadromous (recreational)</b>
<b>Observation type: Self water body</b>
<b>Time period of validity: 2022-2024</b>
<p>Short description (max 100 words): The analysis of catch reports maintained by individual Polish Angling Association districts.</p>
<b>Description of the population</b>

**Population targeted:**

The target species are Atlantic salmon *Salmo salar*, sea trout *Salmo trutta* and eel *Anguilla anguilla* in ICES SD 24-26.

**Population sampled:**

Baltic Salmon, sea trout and eel.

**Stratification:**

The survey cover all year.

**Sampling design and protocols****Sampling design description:**

Analysis of catch records from the Polish Angling Association districts of the analyzed rivers. Since the access to data is shifted in time, the time of processing results falls for the next year. The analysis of the registers must provide such information as: number of registers issued, number of registers returned, share of full and partial licenses, reported number of sea trout and salmon in Pomeranian rivers and eel in Oder and Vistula River basins.

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)  
[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)  
[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021\\_Report.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/05/PS1-PL-2021_Report.pdf)

**Compliance with international recommendations:**

Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <https://doi.org/10.17895/ices.pub.7925>  
ICES. 2020. Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL). ICES Scientific Reports. 2:85. 223 pp. <http://doi.org/10.17895/ices.pub.5982>

**Sampling implementation****Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

**Data capture****Means of data capture:**

<p>Data are recorded in the field and stored in the excel file.</p> <p><b>Data capture documentation:</b> N Details are provided in this textbox.</p> <p><b>Quality checks documentation:</b> N Details are provided in this textbox.</p>
<p><b>Data storage</b></p>
<p><b>National database:</b> NA</p> <p><b>International database:</b> NA</p> <p><b>Quality checks and data validation documentation:</b> N Details are provided in this textbox.</p>
<p><b>Sample storage</b></p>
<p>Storage description: Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia.</p> <p>Sample analysis: Data are analyzed with the use of statistical tools.</p>
<p><b>Data processing</b></p>
<p><b>Evaluation of data accuracy (bias and precision):</b> N Details are provided in this textbox</p> <p><b>Editing and imputation methods:</b> N Details are provided in this textbox</p> <p><b>Quality document associated to a dataset:</b> There is no document summarising the estimation process followed.</p> <p><b>Validation of the final dataset:</b> Catch estimates are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST) and ICES Working Group on Eels (WGEEL) for salmon, sea trout and eel respectively. Quality of the data provided are discussed and verified during the group meetings.</p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan. No deviations</p>

**Sampling scheme identifier: commercial\_diad**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: commercial_diad</b>
<b>Sampling scheme type: Diadromous (commercial)</b>
<b>Observation type: Self water body</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): Sampling scheme aiming at collecting biological data (length, weight, sex ratio, age) from commercial catches and landings. Sampled specimens of sea trout are captured during their spawning migration and subjected to a typical controlled spawning operation. Sampling of eel is performed during fishing season from May to October.
<b>Description of the population</b>
<b>Population targeted:</b> The target species is sea trout <i>Salmo trutta</i> in ICES SD 24-26 and European eel <i>Anguilla Anguilla</i> in Vistula and Oder Emu
<b>Population sampled:</b> Baltic sea trout, European eel
<b>Stratification:</b> The survey covers the spawning season (October-December) of sea trout, and May-October for eels.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> Stock related variables will be collected during monitoring of commercial catches and landings. It is planned to collect 100 samples of sea trout from three rivers in northern Poland (Parseęta, Słupia, Rega). Salmon catches are incidental and there is no fishery targeting this species.
<b>Is the sampling design compliant with the 4S principle?:</b> NA
<b>Regional coordination:</b> N
<b>Link to sampling design documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf</a>
<b>Compliance with international recommendations:</b> Y ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <a href="https://doi.org/10.17895/ices.pub.7925">https://doi.org/10.17895/ices.pub.7925</a>
<b>Link to sampling protocol documentation:</b> <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf</a>
<b>Compliance with international recommendations:</b> Y

ICES. 2021. Baltic Salmon and Trout Assessment Working Group (WGBAST). ICES Scientific Reports. 3:26. 331 pp. <https://doi.org/10.17895/ices.pub.7925>

### **Sampling implementation**

#### **Recording of refusal rate:**

NA

#### **Monitoring of sampling progress within the sampling year:**

The sample stratification and digitization process is monitored on an on-going basis.

### **Data capture**

#### **Means of data capture:**

Data is recorded in the field and stored in the excel file.

#### **Data capture documentation:**

N

Details are provided in this textbox.

#### **Quality checks documentation:**

N

Details are provided in this textbox.

### **Data storage**

#### **National database:**

NA

#### **International database:**

NA

#### **Quality checks and data validation documentation:**

N

Details are provided in this textbox.

### **Sample storage**

Storage description:

Collected data are stored on the servers of the National Marine Fisheries Research Institute in Gdynia. Scale samples are dried and stored in the paper envelopes with biological information about each specimen.

Sample analysis:

Data is analyzed with the use of statistical tools.

### **Data processing**

#### **Evaluation of data accuracy (bias and precision):**

N

Details are provided in this textbox

#### **Editing and imputation methods:**

N

Details are provided in this textbox

#### **Quality document associated to a dataset:**

There is no document summarising the estimation process followed.



**Validation of the final dataset:**

Data are provided each year following the data call of ICES Baltic Salmon and Trout Assessment Working Group (WGBAST). Quality of the data provided are discussed and verified during the group meeting.

**AR comment:** Indicate any deviations or developments. Do not change the text already adopted in the work plan.  
No deviations

**Sampling scheme identifier: Trap\_eel**

<b>MS : POL</b>
<b>Region: Baltic Sea</b>
<b>Sampling scheme identifier: Trap_eel</b>
<b>Sampling scheme type: Diadromous (scientific)</b>
<b>Observation type: Self water body</b>
<b>Time period of validity: 2022-2024</b>
Short description (max 100 words): The main goal of the survey is to obtain indicators of natural recruitment and yellow eel density.
<b>Description of the population</b>
<b>Population targeted:</b> The target species is European eel ( <i>Anguilla anguilla</i> ) in Vistula and Oder EMU.
<b>Population sampled:</b> Yellow eel.
<b>Stratification:</b> Sampling takes place from April to November at fixed locations on Slupia river and lagoons.
<b>Sampling design and protocols</b>
<b>Sampling design description:</b> The so-called trough traps are used to catch the young yellow eels. The construction scheme of this gear is based on traps used in Germany (own information), and is consistent with traps used in other countries (e.g. Legault, 1992; Solomon and Beach, 2004; Anon., 2011). It consists of an angled trough that fish climb up and a trap section that collects them. The bottom of the trough is lined with artificial substrate in the form of rows of plastic brushes. A few traps, however, of those used in the past in Smółdzino and Rejowice, were lined with plant material (branches and grass). The trap part of a trough trap is usually a barrel, which apart from the inlet opening, through which eels enter with the water, has numerous small openings allowing the constantly flowing water to flow out. The eels are lured to enter the trap area by water. This is supplied by gravity, or by a pump, through hoses to the beginning of the trough. Some of it flows down the trough where the fish climb. The rest of the water is directed to the trap section, where it enters through a funnel with a hose along with the flushed fish. Traps are set at presumed locations of aggregation or migration of eels below the dams, usually at the side of turbine outflows or at weir overflows. All fish caught are measured and weighed. Survey fyke nets without a selection sieve were used to catch yellow eels, allowing the entire length spectrum to be captured. The location of the fyke nets has been fixed since 2016, making it possible to analyse the eel abundance trend in the Szczecin Lagoon and the Vistula Lagoon.

**Is the sampling design compliant with the 4S principle?:**

NA

**Regional coordination:**

N

**Link to sampling design documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)

**Compliance with international recommendations:**

Y

**Link to sampling protocol documentation:**

All catch is emptied from research gear for 2-3 days and then stored at low temperature. It is successively measured and weighed in the laboratory. For eels over 40 cm, ichthyological analyses are performed. The data is recorded on the measurement and analysis cards. Otoliths are placed in special tubes. Age is read from thin slices.

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)

**Compliance with international recommendations:**

Y

#### **Sampling implementation**

**Recording of refusal rate:**

NA

**Monitoring of sampling progress within the sampling year:**

NA

#### **Data capture**

**Means of data capture:**

Measuring boards, dissection equipment, tubs & buckets, different sampling protocols, processing software. Biological data (length, weight, sex,.) are recorded in the internal database, and transferred annually during WGEEL datacall.

**Data capture documentation:**

[https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign\\_diad\\_Inland.pdf](https://dcf.mir.gdynia.pl/wp-content/uploads/2021/06/SamplingDesign_diad_Inland.pdf)

**Quality checks documentation:**

N (2022)

#### **Data storage**

**National database:**

Data is stored in the internal database

**International database:**

ICES WGEEL database

**Quality checks and data validation documentation:**

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

### **Sample storage**

Storage description:

Otoliths from surveys and commercial sampling are stored in the archive of the National Marine Fisheries Research Institute in Gdynia. The collection includes otoliths and scales collected from the 1960s (their exact number is unknown - depending on the species it ranges from several dozen thousand to over 150 thousand).

Sample analysis:

Biological analysis of the different stocks follows the guidelines established by ICES WGBIOP and associated workshops: <https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx> and ICES WGBIFS

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37133>

### **Data processing**

#### **Evaluation of data accuracy (bias and precision):**

N (2022)

#### **Editing and imputation methods:**

N – not performed at national level but at end-user level (ICES).

ICES Data validation is performed upon data submissions and produces data quality reports with quality flagged data for the submitter to verify if the data need any correction. Quality is also assessed by WGEEL

#### **Quality document associated to a dataset:**

N

#### **Validation of the final dataset:**

The data does not need to be specifically checked for quality as it only relates to the numbers of fish caught in the research catches. The biological data passed to the end user are processed in accordance with the datacall, The data is checked and validated during the WGEEL integration procedure.

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

No deviations

### **Sampling scheme identifier: cod\_recr\_at\_sea**

**MS :** POL

**Region:** Baltic Sea

**Sampling scheme identifier:** cod\_recr\_at\_sea

**Sampling scheme type:** recreational (on site surveys)

**Observation type:** SciObsAtSea

**Time period of validity:** 2022-2024

Short description (max 100 words): sampling aiming at collecting at sea data on retained and discarded part of the catch (in numbers and weight) by fish species during recreational trips directed at cod; also collecting biological data on cod (individual mass, length, sex, maturity, stomach fullness, age) and biological data (length, individual mass) on by-caught fish species; number of anglers (fishing rods) also collected. The scheme covers coastal and open waters of the southern Baltic Sea. As a standard procedure, if bycatch occurs during at sea sampling data on bycatch is collected.

<p><b>Description of the population</b></p> <p><b>Population targeted:</b> all the recreational trips registered in Maritime Offices of the harbours located along the Polish coast.</p> <p><b>Population sampled:</b> mostly recreational trips of the charter boats will be sampled; private - small boats, will not be reached due to insufficient space on-board to accommodate observers on-board.</p> <p><b>Stratification:</b> population is stratified by three geographical units (ICES Sub-divisions) corresponding to commercial sampling schemes of the cod catches, and each area is also stratified quarterly what represents seasonal changes in distribution pattern of cod associated with biology of the fish species.</p>
<p><b>Sampling design and protocols</b></p> <p><b>Sampling design description:</b> semi-randomized drawing from the recreational vessel list stratified by area units (ICES Sub-divisions) and seasons (quarters).</p> <p><b>Is the sampling design compliant with the 4S principle?:</b> NA</p> <p><b>Regional coordination:</b> sampling design and protocols were developed on country level only, due to availability of a unique data – registry of recreational trips recorded by Maritime Offices.</p> <p><b>Link to sampling design documentation:</b> ICES. 2014. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 2-6 June 2014, Sukarrieta, Spain. ICES CM 2014\ACOM:37. 662 pp. <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf</a></p> <p><b>Compliance with international recommendations:</b> Y</p> <p><b>Link to sampling protocol documentation:</b> ICES. 2014. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 2-6 June 2014, Sukarrieta, Spain. ICES CM 2014\ACOM:37. 662 pp. <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2020/05/Sampling-Plan-cod-recreational-POL-DCF.pdf</a></p> <p><b>Compliance with international recommendations:</b> Y</p>
<p><b>Sampling implementation</b></p> <p><b>Recording of refusal rate:</b> Y</p> <p><b>Monitoring of sampling progress within the sampling year:</b> sampling allocation is adjusted following recreational fishing fleet redistribution (time and space –harbours within ICES Sub-divisions)</p>
<p><b>Data capture</b></p> <p><b>Means of data capture:</b> Data is collected using, measuring board, scales, microscopes</p> <p><b>Data capture documentation:</b> ICES. 2011. Report of the Planning Group on Recreational Fisheries (PGRFS) , 7-11 June 2010, Bergen, Norway. ICES CM 2010/ACOM:34. 168 pp.</p>

<p><b>Quality checks documentation:</b> Y,  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Data storage</b></p>
<p><b>National database:</b> NPZDR, database is only accessible from the intranet.</p> <p><b>International database:</b> NA</p> <p><b>Quality checks and data validation documentation:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>Sample storage</b></p> <p>Storage description: the samples (cod otoliths) are stored in paper envelopes in cartoons in a dry dedicated room for otolith storage. The access is limited to assigned personnel only. Time of sample storage is unlimited so far.</p>
<p><b>Data processing</b></p> <p><b>Evaluation of data accuracy (bias and precision):</b> Y, ICES. 2017. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 6–10 June 2016, Nea Peramos, Greece. ICES CM 2016/SSGIEOM:10. 76 pp.</p> <p><b>Editing and imputation methods:</b> N</p> <p><b>Quality document associated to a dataset:</b> N</p> <p><b>Validation of the final dataset:</b>  <a href="https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf">https://dcf.mir.gdynia.pl/wp-content/uploads/2019/10/DataQualityCheck_Description.pdf</a></p>
<p><b>AR comment:</b> Indicate any deviations or developments. Do not change the text already adopted in the work plan.  No deviations</p>

## ANNEX 1.2 - QUALITY REPORT FOR SOCIOECONOMIC DATA SAMPLING SCHEME

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

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

*Provide information under each point in all sections. Do not delete any text from the template.*

### **Sampling scheme identifier: Fishing fleet**

<b>Survey Specifications</b>
<p><i>'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.</i></p> <p><i>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</i></p> <p><i>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</i></p> <p><i>'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.</i></p>
<b>Sector name(s): Fishing fleet</b>
<b>Sampling scheme: Census</b>
<b>Variables:</b> All fleet economic and social variables from Tables 7 and 9 of EU MAP Delegated Decision 2021/1167
<b>Supra region(s):</b> Baltic Sea; North Sea; Eastern Arctic; NAFO; extended North Western waters (ICES areas 5, 6 and 7) and extended South Western waters (ICES areas 10, 12 and 14), All supra regions
<b>Survey planning</b>
<p>Provide a short description of the population to which the sampling scheme applies, e.g. <i>'less active vessels using passive gears'</i>.</p> <p>Census, all registered fishing vessels</p>
<b>Survey design and strategy</b>
<p>1. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc. e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc. Fishing vessel register, log books, monthly catch reports (coastal log books), sales notes, questionnaires (financial accounts and social data);</p> <p>2. Describe how the sample sizes were determined.</p>

Census, survey addressed all registered vessels

3. Describe survey methods and distribution;

e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc. Requests and forms (questionnaires) on economic and social variables are sent to all active vessels owners. Replies are accepted by post, designated website or e-mail. Landings, effort, fleet capacity data obtained from administrative datasets (permanent online access).

4. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.

No supportive, auxiliary information needed.

### **Estimation design**

1. Describe method of calculating population estimate from sample.

These data are intend to be complete as they will include information from the whole population (census approach).

2. Describe method of calculating derived data: e.g. imputed values.

Value of physical capital will be calculated using PIM method or using scrapping premiums, depending on availability of the data.

3. Describe treatment of nonresponse.

In case of non-responses in census, estimation will be made based on averages for vessels that provided data and information known for a whole population for individual vessels i.e. volume of catches, fishing days, number of vessels within given segment. If there is a lack of information from the whole population (100%), the data are estimated based on the average values of the sample calculated taking into account number of fishing vessels, number of fishing days, number of personnel or catch size (variables known for a whole population).

Phone calls or physical visits to ports (to increase number of responses) are planned to address non response problem.

### **Error checks**

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

A two-stage data (obtained from questionnaires) registration procedure supported by a number of completeness, data type, and range checks in the database application. In the first step a user enters the data into the application forms and saves the data in temporary tables for further verification. In the second step a privileged user can review, update and check the data (using built-in, predefined in the database scripts). A further check is performed after exporting the data to MS Access by a final user (outliers identification, inconsistency between verified data in comparison to preceding year, inconsistency between similar variables eg. fuel costs vs. fuel consumption).

<b>Data storage and documentation</b>
<p>1. Describe how the data is stored.</p> <p>Economic raw data collected under the DCF are entered (and stored) into the database using a dedicated web application accessible only in the institute's network. Once the data for the specific year are completed, they are transferred (exported) for further processing and validation using MS Access and MS Excel.</p> <p>2. Provide link to webpage where additional methodological documentation can be found, if any.</p> <p><a href="https://dcf.mir.gdynia.pl/">https://dcf.mir.gdynia.pl/</a></p>
<b>Revision</b>
<p>1. Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc.</p> <p>No revision envisaged at national level unless common methodology remain unchanged.</p>
<b>Confidentiality</b>
<p>1. Are procedures for confidential data handling in place and documented?</p> <p><a href="https://dcf.mir.gdynia.pl/">https://dcf.mir.gdynia.pl/</a></p> <p>2. Are protocols to enforce confidentiality between DCF partners in place and documented?</p> <p>No other partners involved in economic data collection.</p> <p>3. Are protocols to enforce confidentiality with external users in place and documented?</p> <p>As above.</p> <p>4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation.</p> <p>The questionnaires with economic data are gathered as a part of Polish statistical survey so the general statistical confidentiality regulations apply. This means that data on economic results of national economy entities cannot be made available if a given aggregation consists of less than 3 entities or the share of one entity in a given statement is less than 3/4 of the total.</p>
<p><b>AR comment:</b> Indicate any deviations. Do not change the text already adopted in the work plan.</p> <p>No deviations</p>

### Sampling scheme identifier: Fish processing

<b>Survey Specifications</b>
<p><i>'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.</i></p>



*'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.*

*'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.*

*'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.*

**Sector name(s): Fish processing**

**Sampling scheme: Census**

**Variables: All variables listed in Table 7.1 Processing SocEcon.**

**Supra region(s): NA**

**Survey planning**

1. Provide a short description of the population to which the sampling scheme applies, e.g. *'less active vessels using passive gears'*.

The data are census. The population covers enterprises whose main or additional activity is defined according to the Eurostat definition under NACE Code 10.20: 'products'.

**Survey design and strategy**

1. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.

2. Describe how the sample sizes were determined.

Enterprises are listed in General Veterinary Inspectorate register. The population covers enterprises whose main or additional activity is defined according to the Eurostat definition under NACE Code 10.20: 'products'.

3. Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.

The data are census. Questionnaire forms are sent by post, e-mails or are available to download on website. Replies are accepted by post, e-mail or electronically using dedicated web application (under construction).

4. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.

The financial data delivered on questionnaires can be verified by comparing it with the annual financial statements published in the Register of Business Enterprises (National Court Register). Price validation can be performed by analysing the prices published in EUMOFA

**Estimation design**

1. Describe method of calculating population estimate from sample.

All fish processing companies are expected to return the completed questionnaire forms (legal obligation).

2. Describe method of calculating derived data: e.g. imputed values.

Not applicable

3. Describe treatment of nonresponse.

In case of nonresponse reminders will be sent by e-mail or post. In case of missing data a calculation based on averages will be made using data from the questionnaire forms received. Some financial data (if missing) can be gained from National Court Registry (if published).

#### **Error checks**

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

Each completed questionnaire form is checked for completeness and correctness. In the event of doubt or discrepancy, the data shall be corrected after prior clarification with the person responsible for completing the form via e-mail or phone. Afterwards the data are entered into the database. The next step of validation is cross-checking them with the previous year's data. In case data are delivered using the web application, they are verified and validated in the system. If necessary clarification is made by e-mail or phone and correction is made in the system.

#### **Data storage and documentation**

1. Describe how the data is stored.

All data are entered into the dedicated web application and stored there.

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

<https://dcf.mir.gdynia.pl/>

#### **Revision**

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

Not applicable

#### **Confidentiality**

1. Are procedures for confidential data handling in place and documented?

<https://dcf.mir.gdynia.pl/>

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

No other partners involved in economic data collection.

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

As above.

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

The questionnaires with economic data are gathered as a part of Polish statistical survey so the general statistical confidentiality regulations apply. This means that data on economic results of national economy entities cannot be made available if a given aggregation consists of less than 3 entities or the share of one entity in a given statement is less than 3/4 of the total.

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

No deviations

### Sampling scheme identifier: Aquaculture - PSS

<b>Survey Specifications</b>
<p><i>'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.</i></p> <p><i>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</i></p> <p><i>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</i></p> <p><i>'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.</i></p>
<b>Sector name(s): Aquaculture</b>
<b>Sampling scheme: PSS</b>
<b>Variables: Economic &amp; Social</b>
<b>Supra region(s): NA</b>
<b>Survey planning</b>
<p>1. Provide a short description of the population to which the sampling scheme applies, e.g. <i>'less active vessels using passive gears'</i>.</p> <p>The data about two aquaculture species will be collected: carp and trout. According to Inland Fisheries Institute in Olsztyn survey the number of carp farms (2019) is 894 and trout is 102 (2019).</p>
<b>Survey design and strategy</b>
<p>1. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc.</p> <p>The data source is questionnaire filled in by sampled respondents. Additionally interviews are planned.</p> <p>2. Describe how the sample sizes were determined.</p> <p>Object: farm. The sample is determined by two factors: sampling method and rate of nonresponse. Because of the first sampling time of socioeconomic data under the DCF in Poland the following assumptions were made: random sampling, confidence interval of 85% and a maximum error of 15%. Using nonresponse average rate from marine fisheries in 2018-2020 on DCF in Poland (45%) the total number of sampled farms for both species is planed</p>

of 64.

3. Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc.

Questionnaires send by post or email or/and interviews (phone and directly).

4. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc.

First period of data collection. No auxiliary information planned.

#### **Estimation design**

1. Describe method of calculating population estimate from sample.

Small population. HT estimation based on stratified population of farms.

2. Describe method of calculating derived data: e.g. imputed values.

Where necessary, for the missing data, the following methods of imputation will be used: mean substitution or regression.

3. Describe treatment of nonresponse.

No experience in nonresponse in aquaculture in Poland. Used marine fisheries nonresponse rate.

#### **Error checks**

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

To reduce the risk of errors, standard activities will be carried out, such as: questionnaire tests; training; double-check work.

The sample is not numerous because of focus on data quality issues. Expert validation of collection processing and distribution. Data sets collected under the project H2020 SUCCESS -typical farms approach will be used as a reference and verification point (recommended by PGEcon in 2019).

#### **Data storage and documentation**

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

The data will be stored as database on server and paper forms collection.

#### **Revision**

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

<p>segment, per variable etc.</p> <p>The methodology will be revised twice during collection period. First revision will take place after first year of collection and the second after the last year.</p>
<p><b>Confidentiality</b></p>
<p>1. Are procedures for confidential data handling in place and documented? Y</p> <p>2. Are protocols to enforce confidentiality between DCF partners in place and documented? Y</p> <p>3. Are protocols to enforce confidentiality with external users in place and documented? Y</p> <p>4. Are there any issues with publication of data due to confidentiality reasons? Provide an explanation. Yes if the population in layer is less than 3 or when the turnover of the one farm is more than 75%.</p>
<p><b>AR comment:</b> Indicate any deviations. Do not change the text already adopted in the work plan. No deviations</p>

### Sampling scheme identifier: Aquaculture - IND

<p><b>Survey Specifications</b></p> <p><i>'Sector name' refers to socio economic data on fisheries, aquaculture and any complementary data collection of fishing activity and processing as given in the EU MAP Delegated Decision annex.</i>  <i>'Sampling scheme' refers to survey technique: by census, by sampling, random or non-random, other (with explanation). If sampling, then outline sampling design.</i>  <i>'Variables' refer to Tables 7, 9 and 10 of the EU MAP Delegated Decision annex.</i>  <i>'Supra region' refers to Table 2 of the EU MAP Implementing Decision annex. If the sampling scheme is the same in all supra regions put 'All supra regions'.</i></p>
<p><b>Sector name(s): Aquaculture</b></p>
<p><b>Sampling scheme: IND</b></p>
<p><b>Variables: Economic</b></p>
<p><b>Supra region(s): NA</b></p>
<p><b>Survey planning</b></p> <p>2. Provide a short description of the population to which the sampling scheme applies, e.g. 'less active vessels using passive gears'. The data about number of carp and trout farms will be collected. Survey based on official statistics published.</p>
<p><b>Survey design and strategy</b></p>

<p>1. List data sources; e.g. interviews, registers, log books, sales notes, VMS, financial accounts etc. Main source: Inland Fisheries Institute (IFI) in Olsztyn publication. Verification source: veterinary list published by General Veterinary Inspectorate (GVI) in Poland and Ministry of Agriculture and Rural Development statistics of aquaculture.</p> <p>2. Describe how the sample sizes were determined. Number of farms and its size. No sampling.</p> <p>3. Describe survey methods and distribution; e.g. questionnaire forms by post, by email, on website, by phone etc. access to other datasets etc. Access to published data.</p> <p>4. Describe the role of auxiliary information, if any, in the strategy: e.g. for validation, cross referencing, fall back data source etc. No auxiliary data needed.</p>
<p><b>Estimation design</b></p>
<p>1. Describe method of calculating population estimate from sample. S No estimation –official data.</p> <p>2. Describe method of calculating derived data: e.g. imputed values. Different source of data possible e.g. GVI list.</p> <p>3. Describe treatment of nonresponse. No response needed.</p>
<p><b>Error checks</b></p>
<p>1. Describe potential errors and how and where in the process these are detected, avoided or eliminated e.g., data; duplication, double counting, respondent error, upload error, processing error etc. To reduce the risk of errors, standard activities will be carried out, such as: double-check work. Expert validation of collection, processing and distribution procedures.</p>
<p><b>Data storage and documentation</b></p>
<p>1. Describe how the data is stored.</p> <p>2. Provide link to webpage where additional methodological documentation can be found, if any. The data will be stored as database on server.</p>
<p><b>Revision</b></p>
<p>1. Describe the frequency of the methodology review e.g., revision of; segmentation, survey method per segment, per variable etc. The methodology will be revised once during collection period at the end of year.</p>
<p><b>Confidentiality</b></p>

1. Are procedures for confidential data handling in place and documented?
2. Are protocols to enforce confidentiality between DCF partners in place and documente
3. Are protocols to enforce confidentiality with external users in place and documented?

No confidential data handling.

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

NA

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

No deviations