Ministry of Maritime Economy and Inland Waterways

National Marine Fisheries Research Institute

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

concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy

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

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

Commission Implementing Decision (EU) 2016/1251 of 12 July 2016

adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019

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

2017-2019

Version [1]

Gdynia, 31.10.2016

CONTENTS

SECTION 1: BIOLOGICAL DATA

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

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

Aim of pilot study 1 - coastal and marine waters

Development of a map of the Polish Exclusive Economic Zone with spatial and temporal distribution of salmon, seatrout and eel recreational fisheries by species and fishing techniques. This should allow to determine areas and time with highest recreational fisheries activities (hot spots) which, in turn, will serve to design a appropriate monitoring and sampling programme enabling estimates of fishing effort as well as catch volume and composition for recreational fisheries for salmon, seatrout and eel.

Duration of pilot study

Based on the recent observations, depending on the target species and fishing techniques used in recreational fisheries in the Polish maritime waters, the pilot study should cover period from late winter to late autumn.
It is planned to conduct pilot study in 2017 and it is anticipated that it will last 10-11 months. In case the results of a survey are unsatisfactory, i.e. planned goal is not achieved, it is anticipated that a new or modified pilot study, based on the experience gained in 2017, will be conducted for another 10-11 months in 2018.

Methodology and expected outcomes of pilot study

Due to the differences in time and techniques of recreational fisheries targeting salmon, seatrout and eel, study is divided into two main modules.

Module 1

This module is dedicated to monitoring of recreational fisheries of salmon and trout conducted at sea with the use of trolling technique (trolling boats), over the periods from late winter to early spring and in the autumn.
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,
Other boats, taking occasionally on board recreational fishermen holding individual fishing permits
Three 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 known as the most important for salmon and seatrout recreational fishery (Gdynia, Hel, Jastarnia) and at least small harbour equipped with facilities for launching boats and pontoons;
- on-site and off-site questionnaire interviews
- entering into contracts with trolling boats' skippers/owners for filling an annual fishing logbooks.

Preliminary results of the study on the use of remote CCTV cameras for monitoring of recreational salmon trolling fishery effort (presented at the 2016 ICES Annual Science Conference) revealed that remote cameras proved to be a cost-efficient method providing accurate fishing effort estimates helping to reduce bias in recreational catch estimates.
In order to determine catch composition and to collect basic biological data, observers from National Marine Fisheries Research Institute (NMFRI) will participate in trolling cruises targeting salmon and seatrout.
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.
Fisheries Inspectorates along the Polish coast will be contacted and/or visited in order to collect data on the number of recreational fishing permits/licenses issued and on structure of those permits/licenses (interim or full-year).

Module 2
This module is dedicated to monitoring of coastal (from the shore) recreational fisheries of eel and seatrout from the shore with the use of fishing rods, over the periods from late winter and early spring to late summer. The main methods applied to monitor this segment of the recreational fishery will be on-site and off-site questionnaire interviews and field observations by the observers from NMFRI. Estimated catch size declared in the off-site questionnaire interviews will be verified by the direct field observations.
Expected outcomes of the Pilot Study include:

- identification of categories of the Polish recreational fisheries,
- estimates of the catch volume and composition and catch per unit effort,
- spatial and temporal distribution of the salmon, seatrout and eel recreational fisheries,
- size and composition of the recreational fishery fleet (the share of the commercial trolling boats in the total number of trolling boats),
- number and structure of the recreational fishing permits issued annually,
- socio-economic information on recreational fishery,
- development of methods for effective monitoring of recreational fisheries, taking into account local conditions,

Aim of pilot study 1 - 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 Assosiation (PAA) usage range. Currently, the only source of information on the level of angling catches is catch registers maintained by particular PAA districts. Unfortunately, the data obtained from the records are incomplete. This is due to the different level of recovered records in particular districts, the lack of information on catches of visiting anglers and the problem of reliability of data entered into registers. The aim of this pilot study 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.

Duration of pilot study

The pilot study should cover all year period execept closed season.
It is planned to conduct pilot study in 2017 and it is anticipated that it will last 9 months. In case the results of a survey are unsatisfactory, i.e. planned goal is not achieved, it is anticipated that a new or modified pilot study, based on the experience gained in 2017, will be conducted for another 9 months in 2018

Methodology and expected outcomes of pilot study

Three rivers of different size have been selected for a pilot study, i.e. Słupia and Rega 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 catches. 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.
- Involvement of local anglers, one for each of the rivers. Their task will be to collect information about the caught individuals through the so-called angling exchange and direct surveys by the water. During the peak season, a series of questionnaires at the most popular sections of the rivers is expected.
- Analysis of the two most popular angling online forums dedicated to salmonids. Preparation of a questionnaire.
- Confrontation of angling data with information obtained from automated meters (Słupia and Ina - Riverwatcher) and data from the catch points (Rega and Słupia).

Effect/Results of pilot study

- Development of methods for data collection and verification of angling catches on the basis of direct angling surveys and through online queries.
- Calibration of a method based on data from meters and river fish catches.
- Study on the possibility of extending activities to further sea trout rivers in Poland.

References

ICES 2015. Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 1–5 June 2015, Sukarrieta, Spain. ICES CM 2015\SSGIEOM:10. 111 pp.

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.

Wołos A. 2008. Register of angling catches with the need for rational fisheries management on the example of selected districts of Polish Angling Association (PAA). Fisheries User – A new reality. PAA: 102-119.

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

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

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 (RCM Baltic 2016). 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) 2016/1251 data collection for two Polish EMU`s (Oder and Vistula) will consist of:

- catch quantities derived from inland and marine commercial fisheries (logbooks and official statistical questionnaires)
- biological variables – age, length, weight, sex and life stage.
- the abundance of recruits – catch data obtained from eel ladders set in Pomeranian rivers, data on stocking from statistical questionnaires and resellers.
- the abundance of the standing stock – calculated by mathematical modelling, supplemented by data from scientific non selective fyke nets set in lagoons and electrofishing in 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 logbooks (marine waters) and special questionnaires (inland waters).
Stock related variables will be collected during at-sea monitoring of commercial catches and landings in marine and inland waters.

Information on abundance of salmon smolt and parr and number of ascending individuals is not relevant. There are no wild salmon rivers in Poland. At the moment the estimation of stock status is made by executing the assessment model for 17 wild salmon stocks and by expert evaluation in 25 wild salmon rivers. Accidental catch of salmon parr will be noted during sea trout electrofishing survey.

The present EU MAP regulation does not recognize the need of sea trout parr density data that is obtained by electrofishing surveys in rivers. By now, these surveys are in many countries conducted outside the EU data collection. However, as these data gives the basis for the ICES advice, a solid foundation for the relevant river surveys should be established in the EU MAP in order to guarantee the continuation of parr density data series at least in a minimum scale in each assessment unit (RCM 2016). Poland will perform standard electrofishing surveys in 30 sites on 13 rivers. Data will be delivered to WGBAST annually.

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

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

No sufficient input information available at a present stage to set a credible Pilot Study. It shall be based on the end-users needs and expected results agreed upon at the marine regions, which is not a case yet.

However, in 2014 and 2015 the National Marine Fisheries Research Institute realized the project (funded through sources not related to the DCF) dedicated to:

- determine the potential scale of the of birds by-catch in areas, time and for the fishing gear with the highest risk of incidental by-catch of birds,
- determine a potential sampling schemes for an effective birds by-catch monitoring.

The results of the project mentioned above are under preparation and should be published shortly. These results, as well as the collective results of monitoring of the incidental by-catches of cetaceans (implemented under COUNCIL REGULATION (EC) No 812/2004) should be helpful in developing strategies for data collection to assess the impact of fishing on the marine environment at the regional level.

Text Box 1G: List of research surveys at sea

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

Baltic International Trawl Surveys – BITS-1Q and BITS-4Q

Objectives of the survey

The aim of the surveys is an evaluation of *Gadus morhua* and *Platichthys flesus* and, to some extent, *Sprattus sprattus* and *Clupea harengus* recruiting year classes strength (abundance index) and analysis of their distribution during winter (BITS-1Q) and autumn (BITS-4Q) in the bottom zone of the southern Baltic.

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

A set of control hauls (with the use of a standard bottom trawl) and hydrological parameters measurements at randomly selected stations.

ICES Manual for BITS surveys : *ICES. ADDENDUM 1: SERIES OF ICES SURVEY PROTOCOLS; SISP manual for the Baltic International Trawl Surveys (BITS); March 2014; Gdynia, Poland*
(http://dcf.mir.gdynia.pl/?page_id=367)

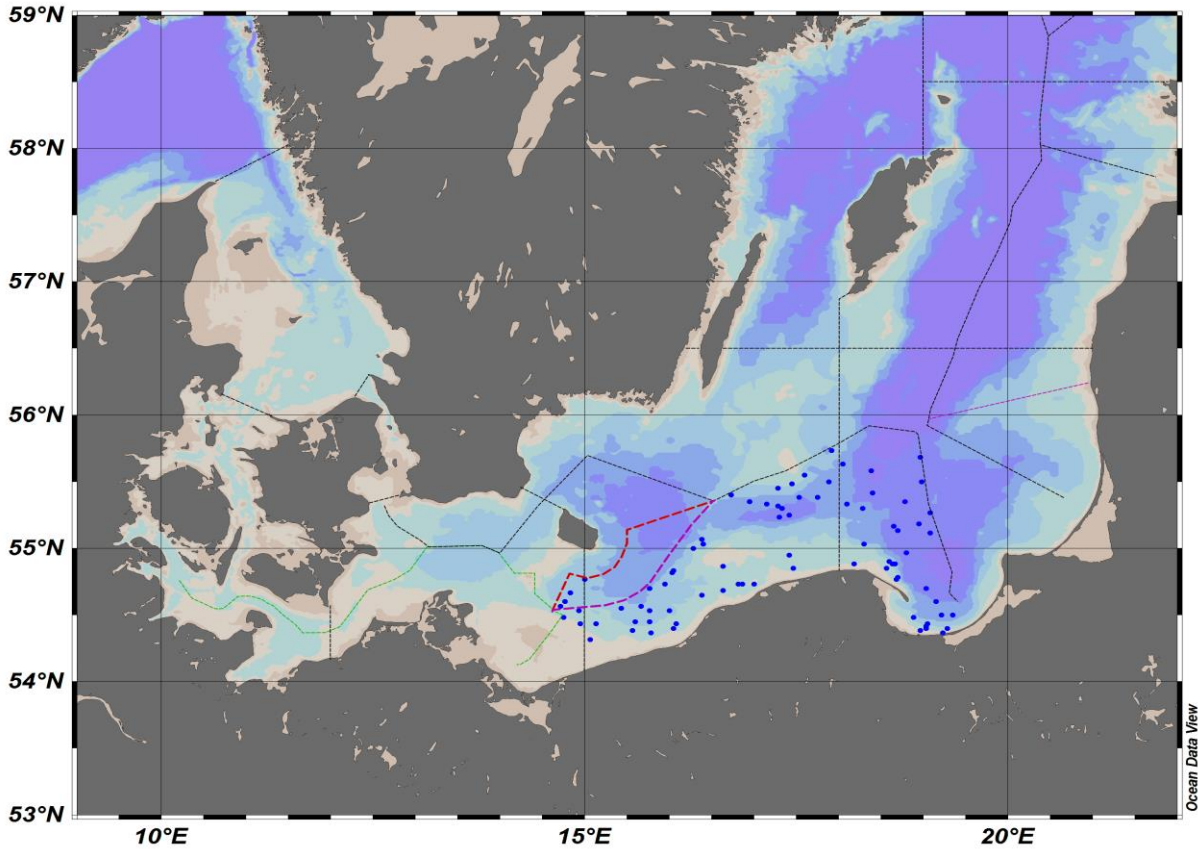

Fig. 1.1. *Location of the bottom trawl hauls and the hydrological standard stations to be performed by the r.v. "Baltica" during the BITS-1Q survey in the Polish part of the southern Baltic.*

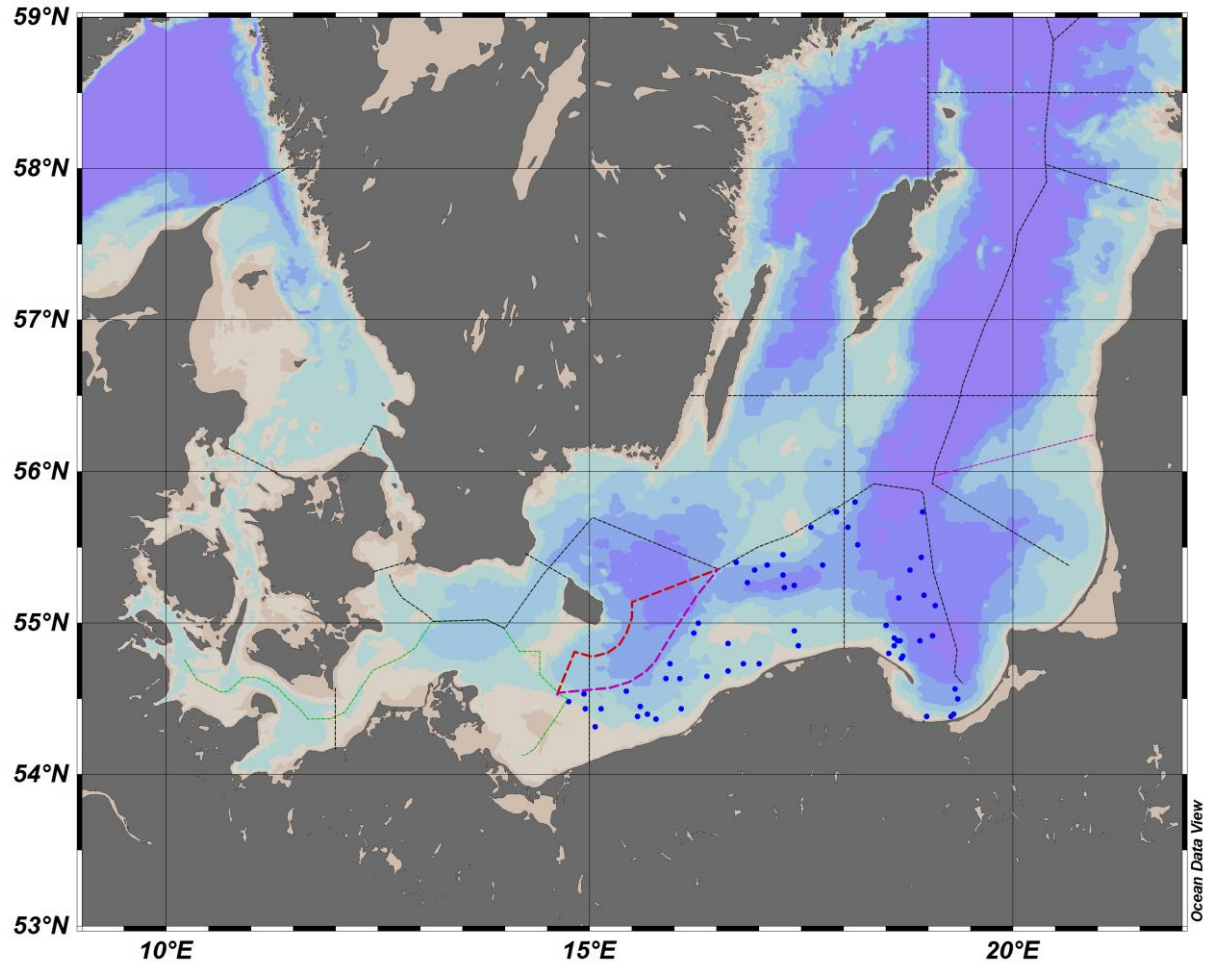

Fig. 1.2. *Location of the bottom trawl hauls and the hydrological standard stations to be performed by the r.v. "Baltica" during the BITS-4Q survey in the Polish part of the southern Baltic.*

For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey
BITS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS).
MS participating in BITS-1Q surveys: DEU; DNK; LTU; LVA; SWE
MS participating in BITS-4Q surveys: DEU; DNK; EST; LTU; LVA; SWE

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

Following recommendations of WGBIFS, each participating MS executes surveys primarily in their respective EEZs. No cost sharing agreements in place yet.

Explain where thresholds apply
N.A.

Baltic Acoustic Surveys – SPRAS and BIAS
The description below refers to two Baltic acoustic surveys of similar scope and methodology: SPRAS - Sprat Acoustic Survey (known also as BASS – Baltic Acoustic Spring Survey) and BIAS - Baltic International Acoustic Survey.
Objectives of the surveys
The aim of the SPRAS surveys an estimation of the stock indices of *Sprattus sprattus* in May, whereas 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.

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

In case of both types of surveys, a set of control hauls (fish catch-stations) with the use of herring small-meshed pelagic trawl is performed as well as echo-integration records (S_A = NASCs; Nautical Area Scattering (Strength) Coefficient) are collected along the pre-selected acoustic transects on the distance of about 830 NM.

BIAS & BASS Surveys Manual: ICES. ADDENDUM 2: SERIES OF ICES SURVEY PROTOCOLS, VERSION 1.02; SISP MANUAL OF INTERNATIONAL BALTIC ACOUSTIC SURVEYS (IBAS); 28-03-2014, GDYNIA, POLAND (http://dcf.mir.gdynia.pl/?page_id=367)

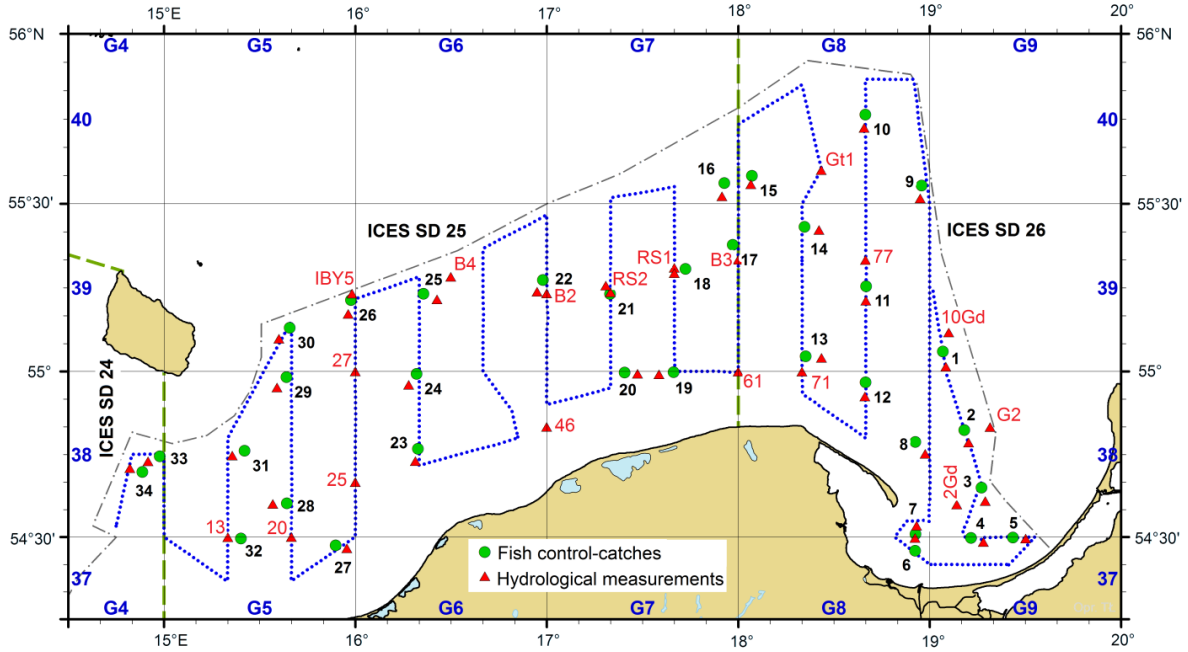

Fig. 1.3. *Location of the echointegration track, pelagic control haul and hydrologic stations during the SPRAS (May) and BIAS (autumn) surveys in the Polish Exclusive Economic Zone on board r/v Baltica.*

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

SPRAS and BIAS surveys are coordinated by the ICES Working Group on Baltic International Fish Survey (WGBIFS).

MS participating SPRAS surveys: DEU; EST; LTU; LVA.

MS participating in BIAS surveys: DEU; DNK; EST; FIN; LTU; LVA; SWE

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

Following recommendations of WGBIFS, each participating MS executes surveys primarily in their respective EEZs. No cost sharing agreements in place yet.

Explain where thresholds apply

N.A.

SECTION 2: FISHING ACTIVITY DATA

Text Box 2A: Fishing activity variables data collection strategy

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

1. Description of methodologies used to cross-validate the different sources of data.
Catch data are compared with the landings data on a trip level in the range of catch composition and catch/landing weight. Fishing locations registered in logbooks are checked with the VMS data.

2. Description of methodologies used to estimate the value of landings.
The value of landings for each species is estimated for the whole year by multiplying the total landings weight by average price per kg. The average annual exchange rate is used to calculate the value in EUR.

3. Description of methodologies used to estimate the average price.
Average price is obtained from the sales notes data. It is estimated for the whole year for each species by dividing the total value by total weight.

4. Description of methodologies used to plan collection of the complementary data.
Not applicable.

SECTION 3: ECONOMIC AND SOCIAL DATA

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

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

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

Economic and social data regarding the fishing fleet will come from administrative documents (fishing logs, landing declarations, first sale documents, Fishing Fleet Register) and statistical questionnaires filled out by fishing vessel owners.

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

The study will be census and questionnaire with economic and social variables will be sent to all active vessels owners. For social variables there will be non-probability survey.

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

All data are intend to be collected for a whole population on the basis of census data.

4. Description of methodologies used for estimation procedures

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).

5. Description of methodologies used on data quality

These data are intend to be complete as they will include information from the whole population. If any fishing vessel owners fail in their obligation to return the statistical questionnaires, the values of the missing parameters for the missing population will be determined based on averaged data from the questionnaires received. Defined as the ratio of number units for which data for at least same variables have been collected to the total number of units designed for data collection.

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

General comment: This Box fulfills paragraph 5 point (b) and paragraph 6 point (b) of Chapter III of the multi-annual Union programme and Article 2 and Article 3 paragraph (3) point (c) of this Decision. It is intended to specify data to be collected under Table 6 of the multi-annual Union programme.
Data collection on employement by eduaction level and nationality has been collected and will be continued in the next period.

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

General comment: This Box fulfills paragraph 6 points (a) and (b) of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Tables 6 and 7 of the multi-annual Union programme.
Based on the data until 2015, according to classification of aquaculture activities by Eurostat statistics, Poland has no marine aquaculture sector. Hence, no sampling is planned.

Pilot Study 4: Environmental data on aquaculture

General comment: This Box fulfills paragraph 6 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (d) of this Decision. It is intended to specify data to be collected under Table 8 of the multi-annual Union programme.
Based on the data until 2015, according to classification of aquaculture activities by Eurostat statistics, Poland has no marine aquaculture sector. Hence, no sampling is planned.

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

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

1. Description of methodologies used to choose the different sources of data
A questionnaire will be used to collect all data.

2. Description of methodologies used to choose the different types of data collection
The study will be census and questionnaire with economic variables will be sent to all processing firm. For social variables there will be non-probability survey.

3. Description of methodologies used to choose sampling frame and allocation scheme
The study will include all legal business entities, including legal personalities and organizational units without legal personality and individuals operating fish and other aquatic animal processing facilities that are listed as meeting the standards of Council Regulation (EC) no. 853/2004 of April 29, 2004, which sets forth detailed requirements regarding hygiene in foodstuffs of animal origin, Appendix IIII Section VIII Fisheries Products. Also included will be entities listed as qualified to make direct sales in accordance with the regulation of the Minister of Agriculture and Rural Development of December 29, 2006 regarding veterinarian requirements during the production of products of animal origin for direct sale (Journal of Laws of 2015 No. 0 pos. 1703). Participation in the study is obligatory for all fish processing facilities according to the regulation of June 29, 1995 on public statistics (Journal of Laws 2016 No. 0, pos. 1068).
The population cover enterprises whose main activity is defined according to the Eurostat definition under NACE Code 10.20: ‘products’. ”Processing and preserving of fish, crustaceans and mollusks ” and also enterprises that carry out fish processing but not as a main activity.

4. Description of methodologies used for estimation procedures
It is assumed that all processing facilities obliged to return completed questionnaires will comply.

5. Description of methodologies used on data quality
Unit response rate will be used as indicator of accuracy. Defined as the ratio of number units for which data for at least same variables have been collected to the total number of units designed for data collection. According to article 38 Law issued on 29 June 1995 on official statistics it shall not be allowed to publish or disseminate obtained in statistical surveys of official statistics statistical information which can be linked or can identify natural persons or individual data characterizing business entities, especially if the aggregated data consist of less than three entities or the share of one entity in the compilation is higher than the three-fourths of the total.

SECTION 4: SAMPLING STRATEGY FOR BIOLOGICAL DATA FROM COMMERCIAL FISHERIES

Text Box 4A: Sampling plan description for biological data

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

A new sampling plan will be implemented by Poland, starting from 2017, in order to move gradually from metier based and purely opportunistic sampling towards the plan based on statistics, with the aim to reach statistically sound sampling scheme (4S) in two-three years time.
The following approach was applied to new sampling plan:

Scheme - determination of the sampling schemes for Baltic Sea region was based on the main types of fisheries exploiting fish stocks subject to sampling requirements, with the use of a combination of at-sea and on-shore schemes, *e.g*. "*Demersal at sea and on shore*", "*Pelagic at sea and on shore*", etc. For sampling biological data from recreational fishery for Baltic cod, as well as for fisheries in regions outside Baltic Sea, the "at sea" sampling scheme was chosen, as the only one practically possible.

Stratifications - as the main purpose is to collect biological data in support of different fish stocks assessment, stratification is based on the type of vessels (fishing technique) exploiting given fish stock, *e.g*. "*Baltic demersal trawlers targeting western cod*" or "*Balctic gillnetters targeting western cod*".

Sampling frame – as the first step to define a sampling frame, a list of all ports where landings from given stock and by the type of vessel (demersal or pelagic trawlers, gilnetters, longliners, etc.) was created and, as a second step, those ports were ranked by the total volume of landings from that given stock. As a result of ranking only those ports were selected for sampling for given stock and given type of vessels where minimum 90% of landings took place (average over the reference period). Thus Sampling Frame is defined as a total number of vessels of a given type (trawlers, gilnetters, etc.) which, over the reference period, ever landed fish from a given stock in one of the port from the selected group of ports representing 90% of landings from that stock and by that type of vessel.

Coverage – assuming that the target population consists of all vessels exploiting given fish stock (irrespective of the fishing technique and port of landings), through the stratification and sampling frames design described above, the combined coverage of target populations by the sampling frames associated with that populations, (i.*e*."targeting" given stock) varies between 61 and 97%.

Primary Sampling Unit (PSU) is "*vessel trip*".

Sampling intensity –in order to maintain the continuity of the sampling intensity compared to the previous years, the annual number of samples to be collected during 2017-2019 period is at the same level as during the previous multiannual program (2014-2016). Both at sea and on shore sampling will be continued. In order to obtain independent, scientific data on discards and in order to maintain the practice of previous years, about 40-50% of sampling activity will be conducted through at sea observers trips.

Time stratification – for those stocks for which biological data are required on a quarterly basis, the total annual number of samples for that stocks will be distributed proportionally to the quarterly distribution of landings from that stock.

Sample selection – for each quarter and for each sampling frame a vessel trip will be randomly selected from a survey population. After each drawing of a particular vessel, this vessel will be returned to a drawing list before next drawing is performed. This procedure will be applied until the desired number of vessels to sample is reached. 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). In case of lack of contact with the vessel or refusal to take observer on board or provide landed fish for sampling on shore, the supplementary drawing will be performed to maintain the desired number of vessels trips to sample.

Data archiving and quality checks - Data entered to the national database are verified in the two-stage validation process supported by a number of completeness, data type and range checks. Export procedures which prepare data sets for external databases (like RDB FishFrame or InterCatch) also perform basic checks. Additionally, a number of quality reports were developed to improve the completeness and reliability of the data.

Until 2016, sampling programme was based on an opportunistic approach. Due to the confidentiality of personal data, the Institute executing the DCF had no full register of the fishing vessels' owners with contact details. Sampling was based on the cooperation with the owners of over 100 vessels (c.a. 12% of all Polish vessels), built over the years on the basis of trust. Efforts are being made for access to the full register of vessels' owners. The list of contact details to vessels' owners systematically expands but the process is extended in time. Therefore, the main expected difficulties in execution of the sampling programme is high level of non-response and/or refusals.