Institute of Food Safety, Animal Health and Environment BIOR, Latvia

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

Commission Implementing Decision (EU) 2019/909 of 18 February 2019

establishing the list of mandatory research surveys and thresholds for the purposes of the multiannual Union programme for the collection and management of data in the fisheries and aquaculture sectors

Commission Delegated Decision (EU) 2019/910 of 13 march 2019

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

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

2021

Version [2] – 2020

[Riga, Latvia – 03.11.2020]

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

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

1. Aim of pilot study

Aim of pilot study is to estimate the relative share of recreational fisheries in total catches. The main focus will be on 4 species – salmon, sea trout, eel and cod. However, pilot study will provide important information also for estimation of the total catches of several other species like flounder, pike-perch, pike where interest of the recreational fishermen is the highest. It should be highlighted that in Latvia the recreational fishery could be explicitly divided into two parts. One part are the fishermen which are using commercial gears the number of which is limited. According to Fisheries rules in Latvia these fishermen are obliged to fill logbooks both fishing in the coastal zone and inland waters. Therefore there is exhaustive information on their catches. The samples collected from commercial fishermen could be applied to these catches because the fishing gears are the same. Therefore the pilot study will be devoted to the second part of recreational fishermen who catch the fishes with different angling tools for which the last inquiry was performed in 2007. For later period we have only information that is presented by organisers of the licenced angling in the inner waters that includes also angling on salmon and sea trout.

2. Duration of pilot study

It is planned to continue pilot study what was started in 2018. According to first results of the pilot study, recreational fishery (angling) of cod in Latvian waters is on low level. Therefore in next years pilot study will be targeted to salmon trolling, where possible by-catch will be estimated. Results of the pilot study will be presented to ICES WGRFS.

Additional information from angling from seashore will be collected from field trips in fishing season and collecting information from angling competitions.

3. Methodology and expected outcomes of pilot study

The appropriate methodology will be selected from the reports of Working Group on Recreational Fisheries Surveys (WGRFS). It will include several kinds of inquiries and also visiting of the angling sites. The Pilot study will allow to estimate the volume of catches by anglers for the main target species paying significant attention to salmon, sea trout, eel, cod as well as flounder. Together with the available data on recreational fishery catches with commercial gears it will be possible to judge whether these catches are important that a regular surveys should be performed.

(max 900 words)

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

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

Method selected for collecting data.

The wild salmon population in the river Salaca has been monitored by smolt trapping since 1964 and by parr electrofishing since 1993. The Salaca is regarded as salmon index river in the Eastern Baltic. Smolt trap in the river Salaca is usually operated from the end of April till 3rd decade of May at least 3 weeks annually, however the sampling period could differ depending from hydro-meteorological conditions. All caught smolts are measured, 200 – 500 tagged by streamer tags and released upstream from the trap for total smolt run (smoltproduction) calculation.

Salmon parr electrofishing carried out in permanent monitoring sites anually. Part of the sites fished three times to calculate the parr densities at 100 m2 of habitat. All caught salmon parr are measured. Electrofishing is carried out regarding standard LVS EN 14011:2003 established on the basis of CEN standard.

Salmon and sea trout samples in fresh water are collected from commercial fisheries by signing agreement with fishermen, who are instructed how to collect samples correctly. In 2021 it is planned to collect salmon samples from new longline fishery in the open sea by signing agreement with fishermen which was started at the end of 2018. Number of samples is provided in table 1C.

Part of eel samples in freshwater are collected by commercial fishermen using trap net (side arm 50 m, mesh size 30 mm in the cod end) near by the river Daugava mouth, by fyke nets 0,5 km upstream form the river Daugava mouth and by trap net closing the lake Lilaste outlet.

The set of 4 small mesh size (8 – 10 mm from knot to knot) fyke-nets used in the lower part of the largest Latvian river Daugava to catch silver eel and undersize young yellow eel. Trap net with side arms closing the lake Lilaste outlet (mesh sizes 20- 14 mm) used to catch yellow eel migrating from the lake to the Gulf of Riga. Number of days in operation and number of eel caught registered in the logbook. All caught eel from river Daugava and lake Lilaste outlet are hold alive in net – cage until sampling procedure. All caught eel from this gear analyzed at harbor, part of them tagged with Carlin tags and released to estimate mortality in different types of fisheries.

Eel samples also were collected independent methods by electrofishing in the Latvias EMU lakes and rivers by electrofishing.

Electrofishing in the Latvias EMU lakes and rivers carried out annually in at least 60 sites (accessible for eel), fished area, time in electrofishing and number of eel caught registered. All caught eel analyzed.

Eel samples in fresh water (Nmin=50) collected from commercial fisheries and also by commercial fisheries independent methods (fykeneting and electrofishing). Total length, weight, sex, eye diameter, pectoral fin length registered and otoliths collected. Life stage of eel recognized by Silvering Index calculated from length, weight, pectoral fin length and eye diameter according to Durif et al., 2009.

According to WGBAST recommendation collect data of ascending salmon in all salmon index rivers it is planned to continue in 2021 counting ascending salmon by using VAKI counter in Salaca River to increase amounts of basic biological data. As a results full-history data (smolt and spawner counts, additional electrofishing sites) will be collected in Salaca River.

(max 250 words per Area)

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.

1. Aim of pilot study

Assess the impact of fishing gear on marine benthic habitats.

2. Duration of pilot study

It is planned to performe an additional survey in 2021 (approx. 3 working days at sea).

3. Methodology and expected outcomes of pilot study

It is planned to continue the pilot study to assess the impact of fishing gear on marine benthic habitats in cooperation with Latvian Institute of Aquatic Ecology. Pilot study was started on 2020 and it is planned to continue it in the 2021. It will consist of trawl surveys with commercial fishing gears to evaluate the direct impact of bottom fishing on biological resources and marine ecosystem in Latvian EEZ. Trawl surveys will be performed in cooperation with local commercial fisherman's and will include benthos sampling and video recording of benthic habitats before and after hauls.

After second year of the survey the first estimation will be done and preliminary results will be evaluated.

(max 900 words)

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 Survey in the first quarter (BITS Q1)

1. Objectives of the survey

The survey will be conducted in February-March on the rented research vessel. The primary purpose of the survey is to produce abundance estimates and indices of recruitment for cod and flounder in the Eastern Baltic (Sub-divisions 25-32) that are necessary for tuning VPA and prediction of the recruitment. Other species are also intensively investigated to support ecosystem analyses.

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

The data will be collected according to "Manual for the Baltic International Trawl Surveys (BITS). Version 2.0" (WGBIFS, 2017, https://bit.ly/2Pe12tB).The trawling is performed during daylight. The trawling is performed using standard scientific trawl TV-3#-930. Vessel speed during trawling should be 3.0 knots, each first control-haul duration should be 30 minutes however, at location with very dense fish shoals catching will be reduced to 15 minutes. Trawling is performed accordingly to the ICES WGBIFS determined catch-stations scheme (Fig.G.1). Each consecutive fish catch should be sorted out by species in separate boxes or baskets and weighted. The sorted and weighed fish are then used for the length, age and maturity sampling and measurements. Biological sampling procedure and length measurements are performed for cod and flounder. Length distribution should be recorded for all other species from every trawl-station, but with less intensity. For all species the total number and weight is recorded. Sampling level for all species is stratified on the ICES Sub-division level. The age determination is performed in national laboratory. During the survey also the basic hydrological parameters (temperature, salinity, oxygen content) will be measured, collection of ichthyoplankton samples and samples of stomachs of cod will be collected as well as information about marine litter. Collecting the data from the echo-integration conducted during the haul time and between hauls locations will be performed. Collected data are stored in ICES database DATRAS, as well as in the local database BIODATA.

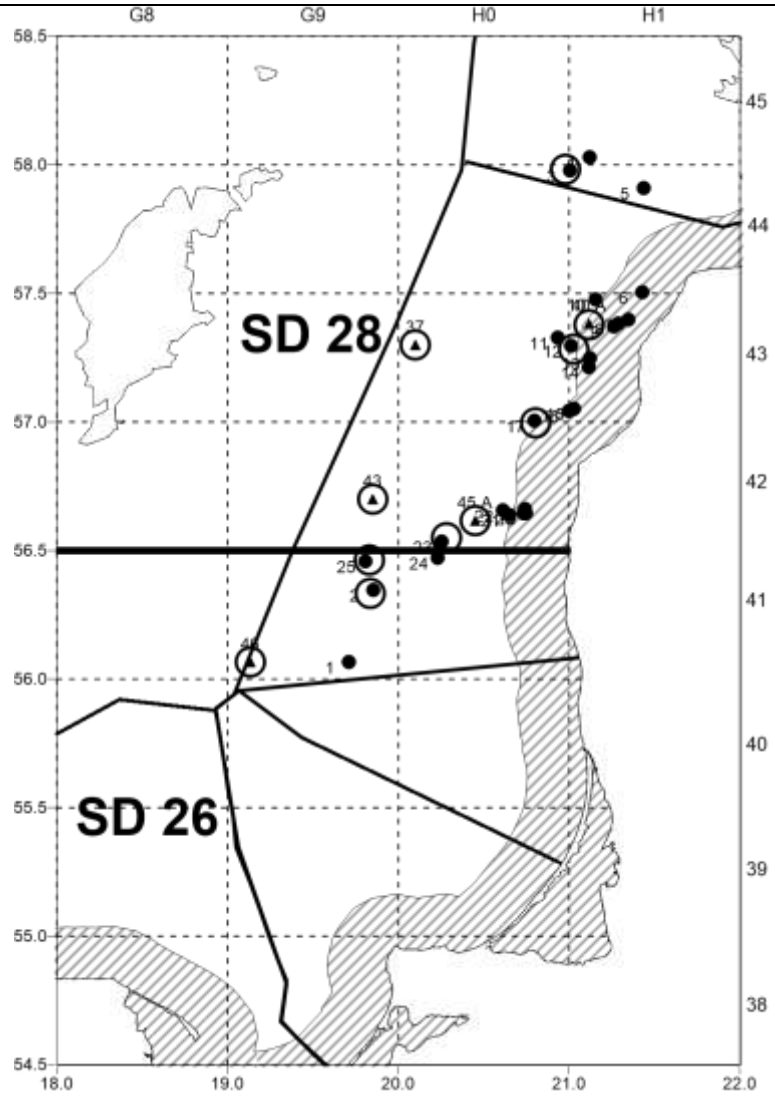


Figure G.1. Location of the realized fish control-hauls (marked with black dots) and the HELCOM standard hydrological stations (marked with black triangles), ichthyoplankton stations (marked with black circles, black lines - national fishing zone borders (BITS 2018, March).

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

The survey is conducted in collaboration with national institutes from Denmark, Germany, Poland, Lithuania and Sweden within the framework of ICES. Survey is part of the Baltic International Trawl Surveys (BITS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

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

From 2006, Latvian BITS survey is carried out on the rented Polish r.v. “Baltica”. No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Baltic International Trawl Survey in the fourth quarter (BITS Q4)

1. Objectives of the survey

The survey will be conducted in November-December on the rented research vessel. The primary purpose of the survey is to produce abundance estimates and indices of recruitment for cod and flounder in the Eastern Baltic (Sub-divisions 25-32) that are necessary for tuning VPA and prediction of the recruitment. Other species are also intensively investigated to support ecosystem analyses.

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

The data will be collected according to "Manual for the Baltic International Trawl Surveys. Version 2.0" (WGBIFS, 2017, https://bit.ly/2Pe12tB) with the same methodology used in Baltic International Trawl Survey in the first quarter (BITS Q1). Trawling is performed accordingly to the ICES WGBIFS determined catch-stations scheme (Fig.G.2). Collected data are stored in ICES database DATRAS, as well as in the local database BIODATA.

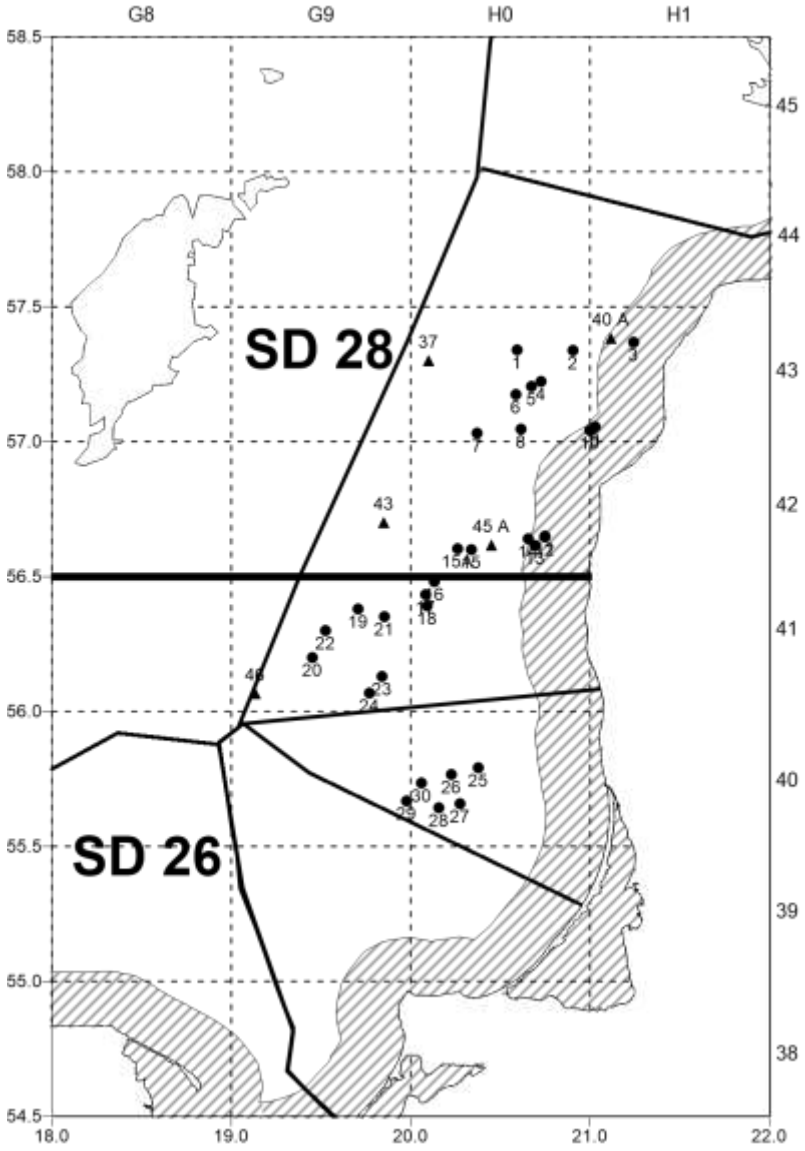


Figure G.2. Location of the realized fish control-hauls (marked with black dots) and the HELCOM standard hydrological stations (marked with black triangles), black lines - national fishing zone borders (BITS 2018, December).

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

The survey is conducted in collaboration with national institutes from Denmark, Germany, Poland, Lithuania, Estonia and Sweden within the framework of ICES. Survey is part of the Baltic International Trawl Survey (BITS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

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

From 2006, Latvian BITS survey is carried out on the rented Polish r.v. "Baltica". No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Baltic International Acoustic Survey – BIAS

1. Objectives of the survey

The survey will be performed in September-October. The survey will be performed on a rented research vessel. The main aims of the survey are to obtain abundance estimates of herring and sprat which are used for tuning VPA for the assessment of herring in Sub-divisions 25-29, +32 and of sprat in Sub-divisions 22-32 of the Baltic Sea.

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

The survey will be carried out in Sub-divisions 26 and 28. The survey will be performed also in the 12 nm zone of Latvian economic zone. The survey track is standard Trawling is performed accordingly to the ICES WGBIFS determined catch-stations scheme (Fig.G.3.1).

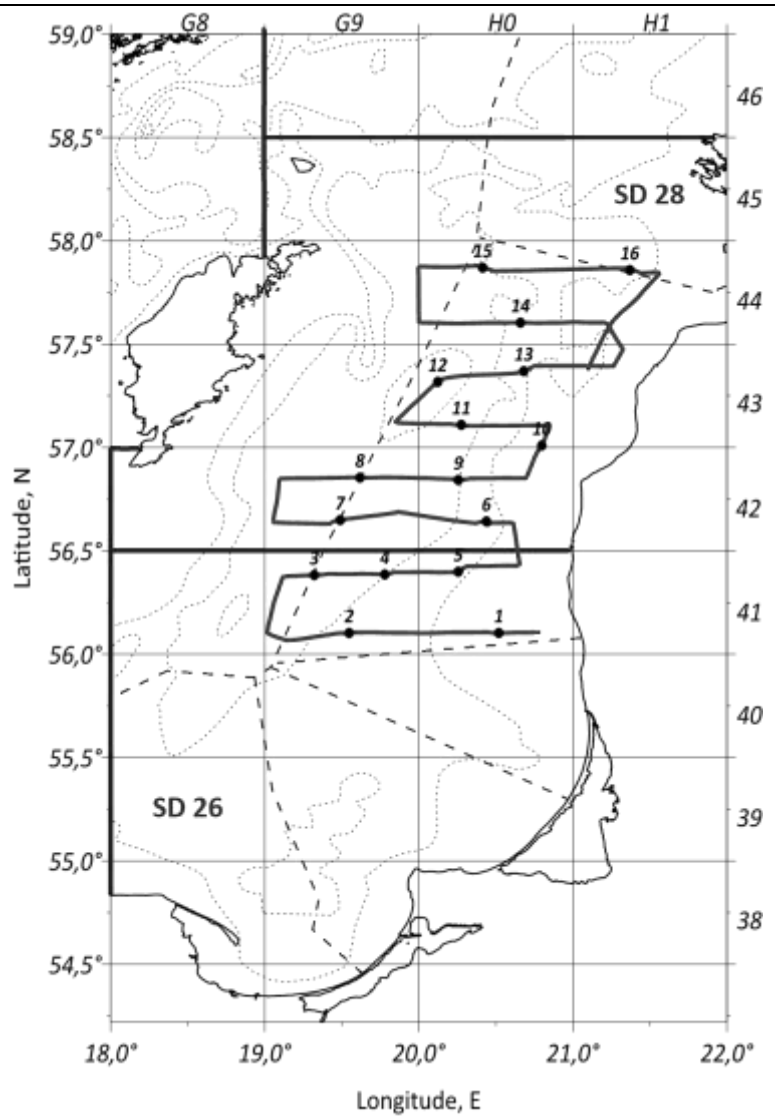


Figure G.3.1. Cruise track design and trawling positions of the Latvian hydro acoustic survey on the f/v "Ulrika" in the period of 17.-26.10.2018. Black curved line describes survey tracks, black dots with numbers above shows trawling stations.

The data will be collected according to Manual for the Baltic International Acoustic Survey (BIAS) Version 2.0. (WGBIFS, 2017, https://bit.ly/2MI3p6o). From each trawl the length, weight, sex and maturity of herring and sprat are determined and otoliths for age determination are taken. During the survey also the basic hydrological parameters (temperature, salinity, oxygen content) will be measured, and samples of zooplankton will be collected Trawling is performed accordingly to the ICES WGBIFS determined catch-stations scheme (Fig.G.3.2). Collected data are stored in ICES databases BAD1, as well as in the local database BIODATA.

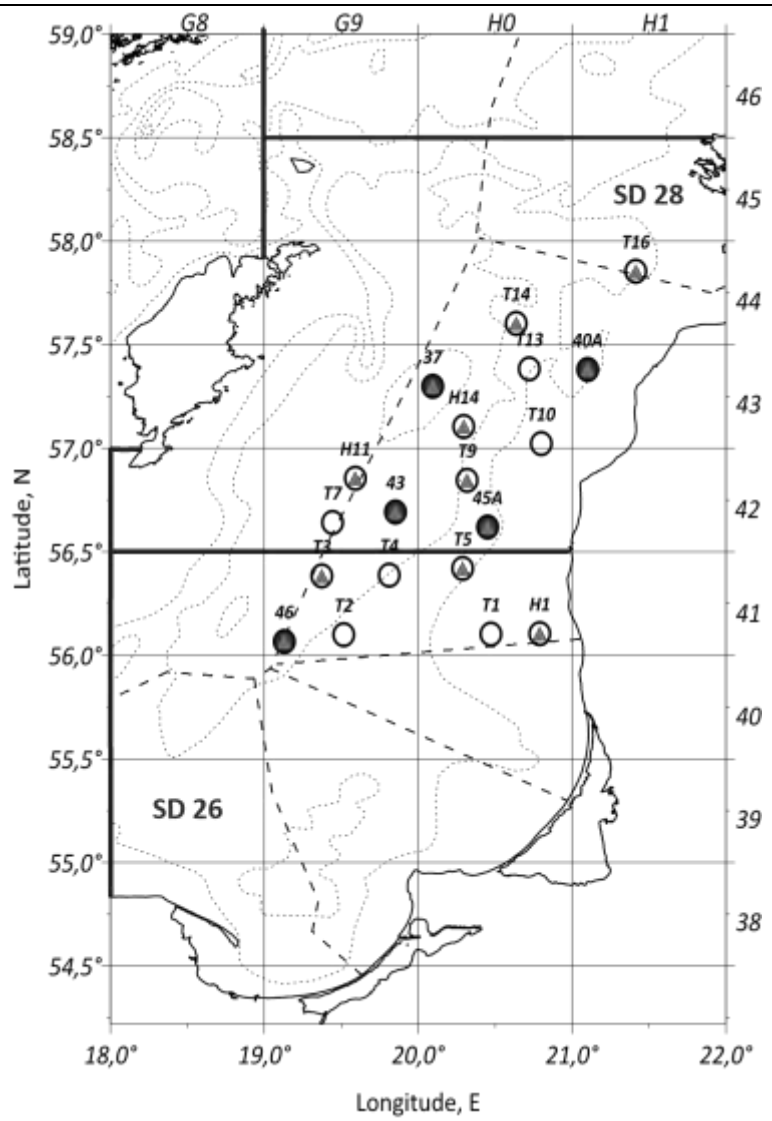


Figure G.3.2. Locations of the realized hydrological and zooplankton stations performed during the Latvian BIAS on the f/v "Ulrika" in the period of 17.-26.10.2018. Rings describes hydrological stations only, rings with triangles inside shows stations where both hydrology and zooplankton samples were taken, dark dots with triangles inside marked international standard or HELCOM stations.

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

The survey is conducted in collaboration with national institutes from Finland, Germany, Poland, Estonia, Lithuania and Sweden within the framework of ICES. Survey is part of the Baltic International Acoustic Survey (BIAS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

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

From 2005, Latvian BIAS survey is carried out on the rented Polish r.v. “Baltica”. No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Gulf of Riga Acoustic Herring Survey – GRAHS

1. Objectives of the survey

The survey will be performed in July-August on a rented fishing vessel in the Gulf of Riga (Subdivision 28.1). The main aim of the survey is to obtain abundance estimates of the Gulf of Riga herring which are used for tuning VPA for the assessment of the Gulf of Riga herring (separate assessment unit).

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

The data will be collected according to Manual for the Baltic International Acoustic Survey (BIAS) Version 2.0. (WGBIFS, 2017, https://bit.ly/2MI3p6o). From each trawl the length, weight, sex and maturity of herring and otoliths for age determination are taken. During the survey also the basic hydrological parameters (temperature, salinity, oxygen content) are measured, and the samples of zooplankton will be collected Trawling is performed accordingly to the ICES WGBIFS determined catch-stations scheme (Fig.G.4). Collected data are stored in national database BIODATA.

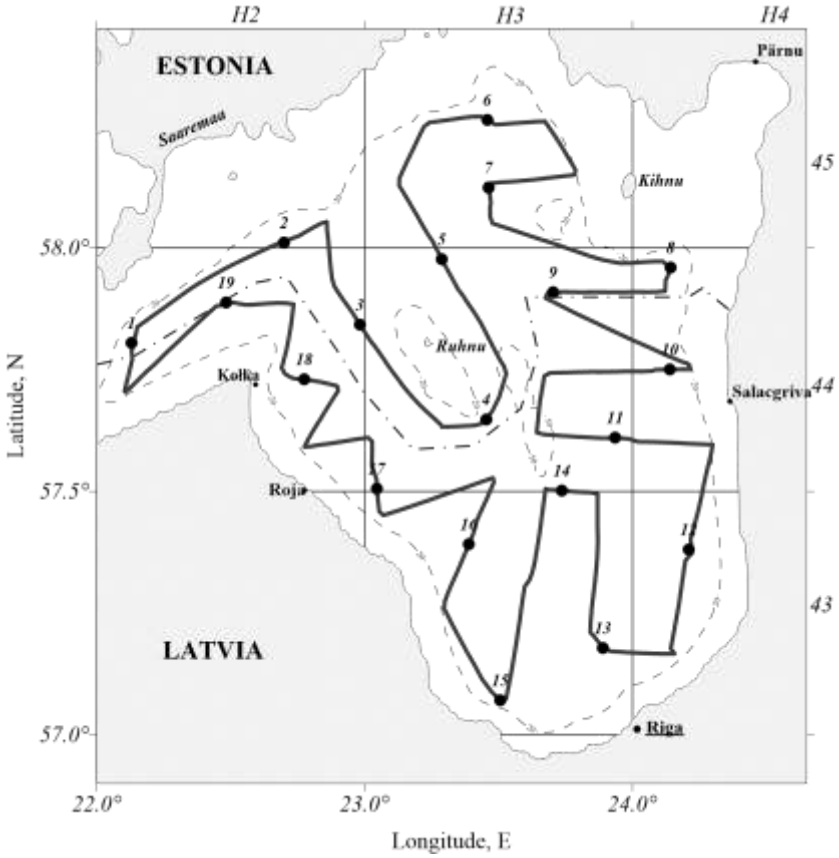


Figure G.4. Cruise track design and trawling positions of the Latvian-Estonian hydro acoustic survey in the Gulf of Riga in the period of 25.-31.07.2018. Black curved line describes survey tracks, black dots with numbers above show trawling stations. Hydrological stations are made in the positions of trawling.

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

The survey is conducted in collaboration with national institute from Estonia within the framework of ICES. Survey is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

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

Survey is carried out on the rented fishing vessel. Cooperation is based on the agreement between the Institute of Food Safety, Animal Health and Environment "BIOR" in Riga and Latvian commercial fishing company

selected at procurement procedure. During the survey Latvian scientists work together with Estonian colleagues from Estonian Marine Institute (EMI). No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Sprat Acoustic Survey – SPRAS

1. Objectives of the survey

The survey will be performed in May on rented research vessel or a rented trawler. The main aim of the survey is to obtain abundance estimates for sprat. The data are used for maturity not available from other sources. Collected data are stored in ICES databases BAD1, as well as in the local database BIODATA.

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

The data will be collected according to Manual for the Baltic International Acoustic Survey (BIAS) Version 2.0. (WGBIFS, 2017, https://bit.ly/2MI3p6o). From each trawl the length, weight, sex and maturity of herring and sprat are determined and otoliths for age determination are taken. During the survey also the basic hydrological parameters (temperature, salinity, oxygen content) will be measured, and samples of zooplankton, and ichthyoplankton will be collected. The survey track is standard (Fig.G.5; Fig.G.6).

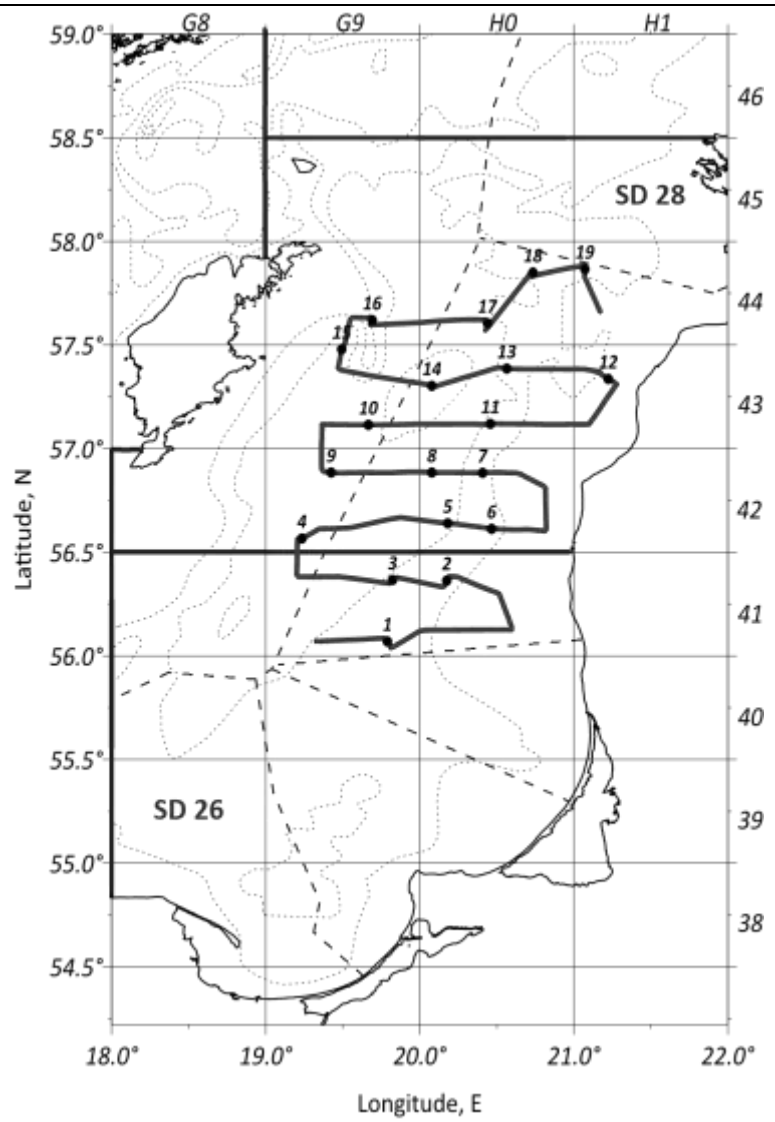


Figure G.5. Cruise track design and hauls of the Latvian-Polish joint Baltic Acoustic Spring Survey on the r/v "Baltica", 18-25.05.2018. Black curved line describes survey tracks, black dots with numbers above show trawling stations.

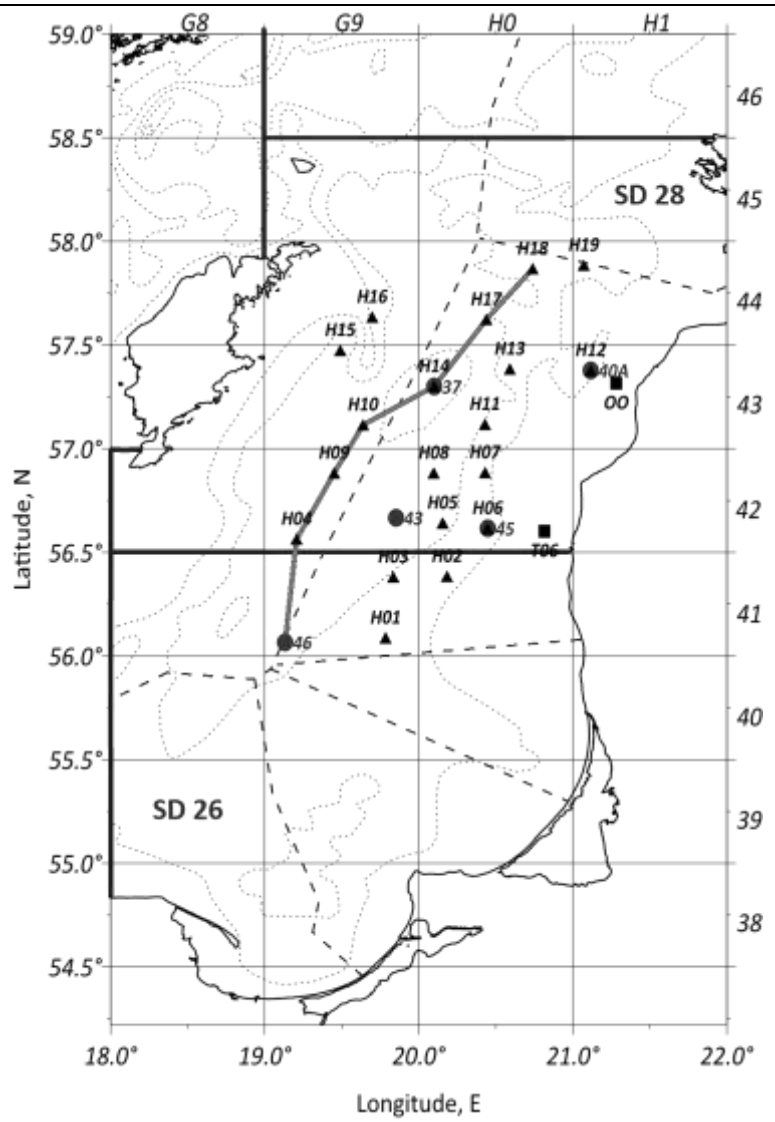


Figure G.6. Hydrological, ichthyoplankton and zooplankton stations performed during Latvian-Polish joint sprat acoustic survey (SPRAS or BASS) in May 2018 on r/v "Baltica" (triangles - trawling positions, squares - turning points of acoustic track, circles - positions of HELCOM standard stations, line- hydrological transect).

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

The survey is conducted in collaboration with national institutes from Germany, Estonia and Lithuania within the framework of ICES. Survey is part of the Baltic International Sprat Acoustic Survey (SPRAS), which is coordinated by the ICES Baltic International Fish Survey Working Group [WGBIFS].

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

No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Latvian Flatfishes Juvenile Survey

1. Objectives of the survey

The survey will be performed from May to October in the coastal zone of the Baltic Sea. The main aim of the survey is to obtain abundance estimates of flatfish (flounder and turbot) juveniles.

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

The data will be collected with beach seine (mesh size in cod-end 8 mm) from the coast in surf zone of the Baltic sea on the main nursery area of flatfishes. The sampling area is approximately 4000 m2, the distance from the coastline is approximately 130 m. In every sampling area (Kolka - Gulf of Riga, Kolka – Irbe Strait, Lielirbe, Jurmalciems, Pape – Baltic Sea) 5 samples will be collected (Fig.G.7). Other species (fish and nektobenthos) are also intensively investigated to support ecosystem analyses. During the survey the basic hydrological parameters (temperature, salinity, and oxygen content) will be measured.

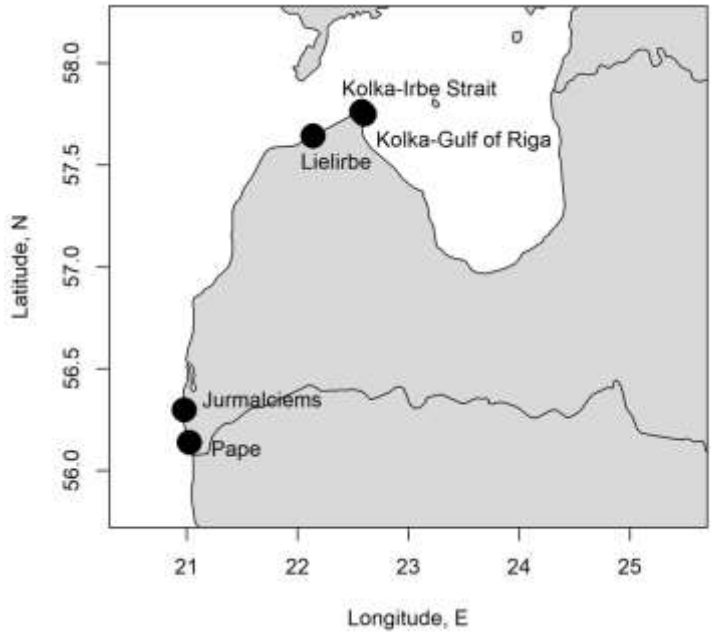


Figure G.7. Sampling places for the Latvian flatfishes juvenile survey in 2018. ● – sampling places.

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

This is not an internationally coordinated survey.

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

No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Gulf of Riga Demersal Fish survey

1. Objectives of the survey

The survey is performed three times in a year - in May, August and October on a rented MRTK type fishing trawler in the Gulf of Riga (Sub-division 28.1). The primary purpose of the survey is to produce abundance estimates of benthic fish species and get hydrological (temperature, salinity, oxygen content) and zooplankton samples in the trawling stations during the survey. The observations of the survey provide data on biological diversity changes in the Gulf of Riga.

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

The data will be collected according to "Manual for the Baltic International Trawl Surveys (BITS). Version 2.0" (WGBIFS, 2017, https://bit.ly/2Pe12tB). Stations cover the Gulf of Riga area from 8 m coastal zone till 56 m depth in locations that are selected on appropriate soil basis for benthic trawling (Fig.G.8). Trawling is performed with a special demersal trawl 18 m wide and 1.5 m high when in action and with 17 mm - 6 mm mesh size. Vessel speed during trawling is 3.0 knots, hauls duration is 30 minutes however, at location with very dense fish shoals catching will be reduced to 15 minutes. All benthic fishes and invertebrates are separated in the catch and analyzed.

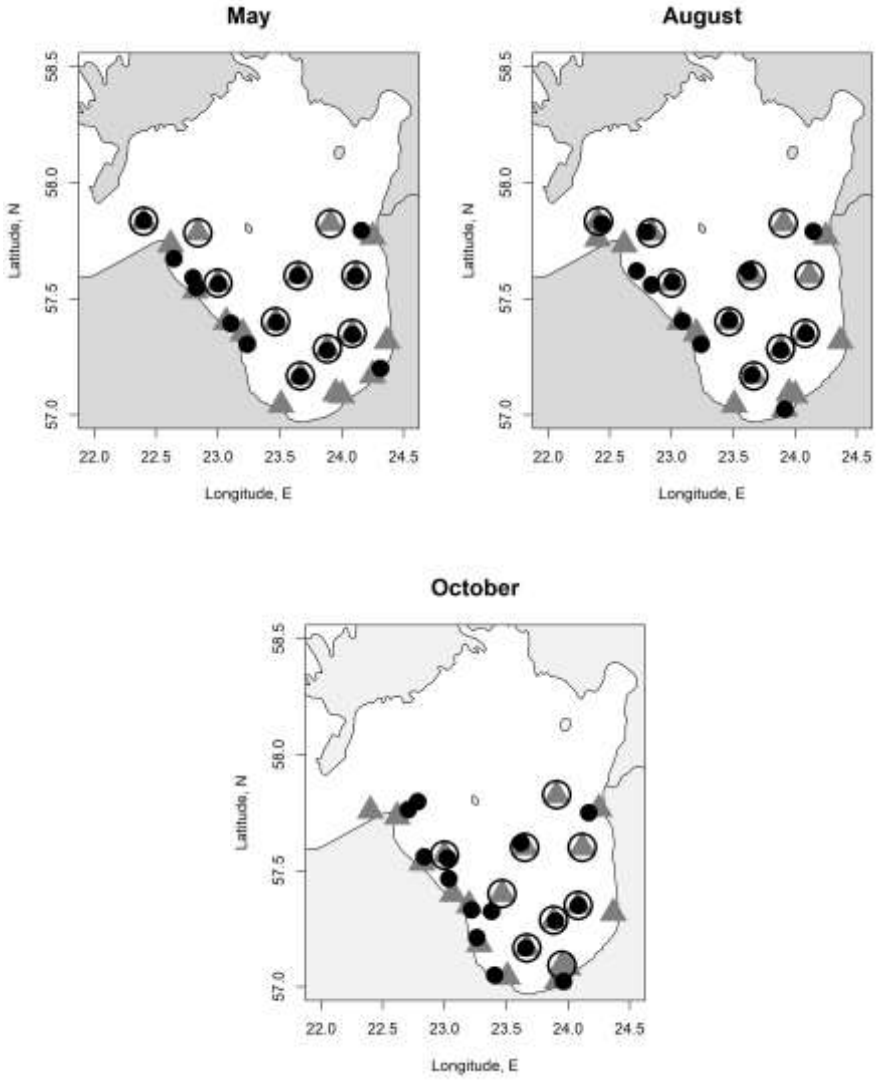


Figure G.8. Realized stations during Gulf of Riga Demersal Fish surveys (● trawling positions, ▲oceano-graphic stations, O plankton stations (May, August, October 2018).

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

This is not an internationally coordinated survey.

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

No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

Coastal fish monitoring

1. Objectives of the survey

The objective of survey is to monitor changes in the fish communities in relation to the impact of eutrophication, habitat alteration, climate change, toxic substances, alien species and fishery. The results of the survey are used for the management of fishery in the Latvian coastal zone.

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

Data are collected in Latvian coastal area at 3-5 m depth using Nordic coastal multi-mesh gillnets (Guidelines for Coastal Fish Monitoring Sampling Methods of HELCOM, 2015; https://bit.ly/2Pfhv0o.These nets are 45 m long and made up of 9 parts which have different mesh sizes (from 10 to 60 mm). Monitoring will be performed one (Jurkalne, Daugavgriva) and two (Pape) times per year, but in the rest of areas – once (Salacgriva) andr twice (Liepaja, Plienciems) per month, from March until November (Fig.G.9). Length and weight of all fishes is measured and other information like weather conditions, depth, water temperature, salinity and Secchi depth are recorded.

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

This is not an internationally coordinated survey however, it is performed by methodology of the HELCOM and it is performed in other countries of the Baltic Sea. No cost sharing agreement is used.

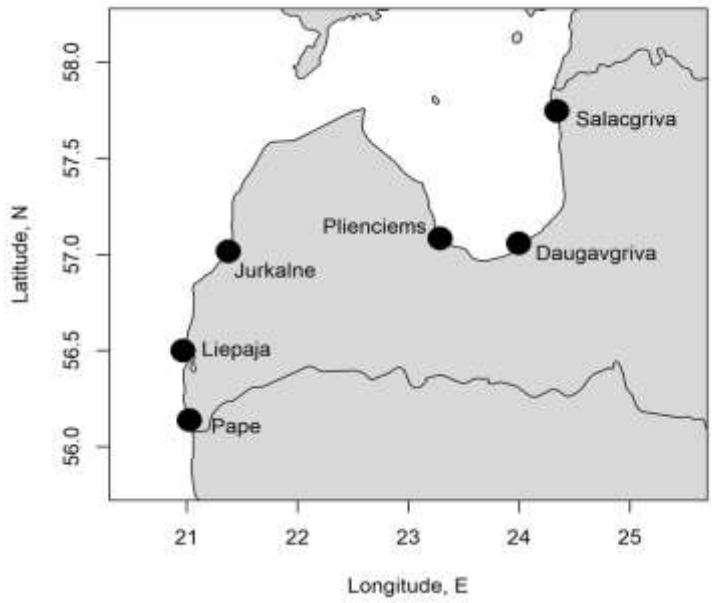


Figure G.9. Sampling places for the Latvian coastal fish monitoring in 2018. ● – sampling places.

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

No cost sharing agreement is used.

5. Explain where thresholds apply

No thresholds were applied for this survey.

(max 450 words per survey)

SECTION 2: FISHING ACTIVITY DATA

Text Box 2A: Fishing activity variables data collection strategy

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

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

The capacity, effort and landing data are collected under *Regulation (EU) No 1224/2009*.

The Capacity data are derived from the FVR (Fishing Vessel Register) which is the part of Latvian Ship Register integrated into the ICIS Information System and among other contain following information on technical parameters:

- Age of the vessel;
- Power of main engine;
- Total vessel length (LOA);
- Tonnage GT.

A small-scale fleet (attributed to the segment VL0010) included in the Fleet Register deal with two types of activity: commercial coastal zone fishery and recreational coastal zone fishery.

According to the Latvian legislation, a special coastal fishing permit (licence) should be received by the enterprise deal with commercial activities and fishing in coastal zone. The licence provides the permission for the fishing enterprises to fish, tranship and sell the catch. The information about the company, fishing licence, vessels, gears, landings and fishing days should be provided monthly in the coastal logbook as well as the information about each fishing operation should be reported. The commercial fishing companies obligated to use the vessels registered in the Fleet Register.

The main reason for the inclusion of recreational vessels to the Fleet Register is an obligation for the recreational fishermen to fill coastal logbooks in connection with obtaining special fishing permission (licence) for the "self-consumption fishery".

The "self-consumption fishery" licence has following limitations:

- The catch could not be sold;
- During the fishing operation is permitted to use only one type of fishing gear: hooks (HOK) or fixed gillnets (GNH) or fish nets (NET) or Eelpout trap nets (FYK);
- Cod volume is less than 10% from total catch.

Such type of permission define that the natural persons have to be registered in the Marine and Inland Waters Administration of the State Environmental Service as well as could use the vessel from the Fleet Register. The permission also obligate the recreational fishermen to fill monthly the coastal logbooks where information is reported about each fishing operation.

Is important to mention that the same small-scale vessels from the Fleet Register could be used for both activities - commercial and recreational. There were 14 such vessels reported in 2019. For the data transmission and analysis these vessels capacity data will be attributed to the commercial fishery data. The capacity data for vessels engaged in recreational fishing will not be transmitted into end user due to the ban on commercial activity for that type of fishery.

The vessels listed in Fleet Register but not reported the fishing operations in the logbooks during the reference year considered inactive.

The base for the calculation of the Efforts and Landings will be data from logbooks. All Latvian commercial fishermen including all vessels <10 m according to the Latvian legislation have to fill logbook for every fishing trip they make. The filled logbooks are stored in the ICIS information system and include all mandatory information from *Commission Delegated Decision 2019/910* Table 4 (Fishing Activity Variables). The ICIS information system and coastal logbooks contain also data about recreational fishery performed with the permission (licence) for the "self-consumption fishery". These data are collected according to the internal Latvian legislation. Only information on fish species being obligatory under *Commission Delegated Decision 2019/910* for recreational fisheries (Table 3) will be provided to end user and all information listed in Table 4 for the commercial fishery.

The additional data collection source (questionnaire) is used for the collection of the price per commercial species and Days at sea. The data about prices are collected from Sale notes and state questionnaire form "1-Fishery". The delivered price data are analysed and the most reliable prices used in the calculation of average price per species. The Days at sea collected by questionnaire form "1-Fishery are used for data cross-validating with the data received from logbooks.

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

For the calculation of the Value of landings per species, the average prices delivered from Sale notes and questionnaires will be multiplied with the landed weight delivered from logbooks.

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

The data about price are collected from Sale notes and state questionnaire form "1-fishery". The delivered price data are analysed by experts and the most reliable prices are used for the calculation of average price.

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

The data from state statistical form/questionnaire "1-Fisheries" is received from Central Statistical Bureau of Latvia (CSB). The primary information about prices and landed weight are provided annually from owners of fishing firms by species. The information about Days at sea grouped by fleet segments received annually from the same questionnaire. The data covers all members of the population involved in the economic activity. Despite the fact that price per species and Days at sea data collection is based on the questionnaire form, participation of the respondents is obligatory according to the Latvian legislation. All collected data are stored in the CSB database. Type of data collection for Latvian fishing fleet is "Census". The data collection Response rate is 100%.

(max 900 words per Region)

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

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

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

The economic data collection according to *Commission Delegated Decision 2019/910* table 5A is implemented for all fishing companies involved in commercial fishery. The economic variables are collected by the Central Statistical Bureau of Latvia (CSB) by state statistical form/questionnaire "1-Fisheries" where economic information is aggregated by fleet segments. Primary economic information will be received annually from owners of fishing firms by the state statistical form/questionnaire "1-Fisheries". The collected economic information is based on the annual balance sheet.

The data about prices per commercial species are collected from two data sources: Sale notes and state questionnaire form "1-Fishery". The collected prices data are analysed and the most reliable prices used in the calculation of average price. The Days at sea are collected additionally by questionnaire form "1-Fishery. The received data are used for data cross checks with the data received from logbooks.

It is planned to commit the social data collection started from autumn on 2020. The first social data for the commercial fishery could be received in April 2021 and the data will be collected for 2020. The detailed information about social data collection provided in the Text Box "Pilot Study 3".

The economic and social data for recreational fishery are not collected but some parameters such as value of landing, fuel costs, repair and maintenance costs could be calculated based on collected economic data for the commercial enterprises. The share of the Baltic Sea recreational fishery value and weight were 0.4% and 0.1% respectively in the total Latvian landings value in weight in 2019. These values are negligible and cannot influent to the economic situation in Latvia.

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

Economic data collection covers all members of the population involved in the commercial activity. Despite the fact that economic data collection is based on the questionnaire form, participation of the responders is obligatory according to the Latvian legislation. All economic data are stored in the CSB database. Type of data collection for Latvian fishing fleet is "Census". The Response rate for the collected data is 100 %.

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

The Target population is represented by number of vessels included in the Fleet Register for each fleet segment at the 31st of December of the sample year.

4. Description of methodologies used for estimation procedures

For the calculation of the Value of landings per species as well as Gross value of landings, the average prices will be multiplied with landed weight.

For the calculation of the Value of unpaid labour data about average personal costs in the segment and number of unpaid persons for each segment will be used.

The data for Consumption on fixed capital and Value of physical capital will be collected by questionnaires and also derived from PIM. The variables: historical value, annual depreciation costs and vessel current value are included in the annual questionnaire. The information provided in questionnaires is based on the bookkeeping information. The estimates for the calculation of current vessel value based on the information available in the company's documentation. The values from the survey could be used for the cross checks with

the results received by the Perpetual Inventory Method (PIM). The formulas for the PCU (Price per capacity unit) calculation are taken from the COUNCIL REGULATION (EC) No 2792/1999, where the formulas for compensation for the vessel decommissioning are provided. The formulas determine the vessel current value which theoretically is higher than 2nd hand market price due to the compensation for the excluding vessels from the Fleet Fishing Register should covered the potential price for the vessel in the market. Liner depreciated scheme could be used due to the long service life for the vessels equipment and average vessels age 30 years. The applied shares in total investment and depreciation rates are recommended by OECD. Share in total investment: Hull – 46%, Engine – 25%, Electronics -2%, Other equipment 27%. Linear depreciation rates: Hull – 4%, Engine – 10%, Electronics – 20%, Other equipment – 16%, Rest value hull – 2.5%. Age schedules: Hull – 25, Engine – 10, Electronics -5, Other equipment 7.

The Financial position will be calculated based on the collected data about Gross debts and total company assets attributed to the fishery.

The Energy consumption calculation will be based on collected average price for fuel and data collected for Energy costs.

The FTE national will be calculated based on the collected data about total employment and days at sea as it was recommended by Study No FISH/2005/14 Calculation of labour including FTE in fisheries.

The data for quota or other fishing rights has a zero value due to the absence of fishing rights market in Latvia.

The definitions and methodology for other variables will be applied according to the definitions provided by the document from PGECON 2019 report "Definition and methodologies for the socio-economic data described in EU-MAP".

5. Description of methodologies used on data quality

The economic data collection will be implemented for all members of the population and for each fishing company involved in commercial fishery. The Response rate and Achievement sample rate for economic data collection is planned to be 100%. The coastal fishery (fleet segment VL0010) has a separation for the commercial and recreational fishery. The vessels for the both types of coastal activities are included in the Fleet Register. The economic data collection will not be implemented for the recreational fishery. However, for the recreational fishery biological data will be collected according to the *Commission Delegated Decision 2019/910* table 3 (Species to be collected for recreational fisheries).

The following quality indicators will be calculated for the data collection type "Census":

- Accuracy indicator for type of error Bias:
  - Coverage rate;
  - Response rate;
  - Achievement sample rate;

- Accuracy indicator for type of error Variability (only in cases when Response rate is less than 70%):
  - Coefficient of Variation.

In order to protect data confidentiality it is planned not to submit to end user the following collected data sets:

- for inactive vessels the collected data for the Consumption on fixed capital and Value of physical capital, if the number of vessels is less than 10 vessels in segment;
- the collected economic data for less than 10 long distance sea vessels operated in Atlantic region in each segment separated by fishing area;
- the collected economic data for less than 5 companies with the long distance sea vessels operated in Atlantic region in each segment separated by fishing area. (The vessels operating in Atlantic region cannot be clustered with the Baltic Sea fleet due to significant differences in type of fishing activities and operating areas.).

(max 900 words per Region)

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

General comment: This Box fulfills paragraph 5 point (b) and paragraph 6 point (b) of Chapter III of the multi-annual Union programme and Article 2 and Article 3 paragraph (3) point (c) of this Decision. It is intended to specify data to be collected under Table 6 of the multi-annual Union programme.

1. Aim of pilot study

The social data collection based on pilot study results is incorporated to the three-annual data collection. The pilot study results provide reliable data on employment variability. Furthermore the received social data could be included into subsequent forecast for the development of Latvian fishing fleet. The data will be collected according to the Commission Delegated Decision Table 6 and Table 10 where the following variables for the three sectors (fisheries, aquaculture, fish processing) should be collected:

- employment by gender;
- FTE by gender;
- unpaid labour by gender;
- employment by age;
- employment by education level;
- employment by nationality;
- employment by employment status;
- FTE National.

2. Duration of pilot study

The social parameters included in the planned survey will be in line with defined by PGECON 2017 and PGECON 2019 reports. The survey itself will be performed by a firm that is specialised on running social inquiries. The firm will be selected by procurement procedure that will be organised in the first half of the winter of 2021. The survey itself will be started in winter of 2021 and will last till summer 2021. The results of the survey will be analysed from June to September 2021.

3. Methodology and expected outcomes of pilot study

The social data collection will be based on Probability sample survey. The survey will be implemented based on questionnaires forms. The questionnaires will be distributed between fishing companies. The coverage rate for the survey is planned around 20% of companies in each sector (fisheries, aquaculture, fish processing). The social parameters will be collected for 2020.

(max 900 words)

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

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

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

Data on aquaculture in Latvia could be obtained only from economically active enterprises which farm market size fish for sale or produce young fish for restocking and on growing. There is only freshwater aquaculture in Latvia and there are no net-cage farms in sea and freshwater sites.

The main activities of the Latvian aquaculture enterprises are as follows:

- Fish cultivation in freshwater earth ponds and land based farms in special tanks and growing up for market sale;
- Short- term fish cultivation in freshwater ponds for commercial angling;
- Fish cultivation in household ponds for self-consumption or hobby angling;
- Artificial breeding of young fish for restocking in coastal seawater and inland freshwater. The government program is implemented and one government institution is involved in the restocking process.

The total volume and value of freshwater aquaculture production in Latvia were less than 1% between 2015 and 2018 and were around 0.07% and 0.12% respectively on average from the total available Union production reported to EUROSTAT (according to the Regulation (EC) No 762/2008). Although the freshwater aquaculture data collection is not mandatory (according to the *Commission Delegated Decision 2019/910* Chapter III Data Requirements section (6) some economic variables will be collected. The list of variables is presented in Table 3B Population segments. The economic data collection will be carried out for the basic information which could provide an overview of the aquaculture sector, as well as serve as a basis for the calculation of the sector's economic efficiency. The economic variables are collected by the Central Statistical Bureau of Latvia (CSB) by state statistical form/questionnaire "1-Aquaculture". Apart from economic data the questionnaire includes information on production by species in tonnes and value, total area of fish ponds, volume of rearing tanks and number of employment.

The social data in aquaculture will be collected for 2020. The detailed description about the social data collection provided in Text Box "Pilot Study 3".

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

Primary economic information from state statistical form/questionnaire "1-Aquaculture" is received annually from owners of fishing firms. Type of data collection for Latvian aquaculture is "Census". All received economic data are stored in the CSB database. The Response rate for the collected data is 100 %.

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

The questionnaires should be filled in by each company involved in commercial activity during the sampling year. Due to the small number of aquaculture enterprises, collected data could be presented only as a segment "Other methods" and a species as an "Other freshwater fish". The data cannot be disaggregated by categories by the number of persons employed.

4. Description of methodologies used for estimation procedures

For the calculation of the Value of unpaid labour will be used data about average personal costs and number of unpaid people.

The definitions and methodology for other variables will be applied according to the definitions provided by the document from PGECON 2019 report "Definition and methodologies for the socio-economic data described in EU-MAP".

5. Description of methodologies used on data quality

The following quality indicators will be calculated for the data collection type "Census":

- Accuracy indicator for type of error Bias:
  - Coverage rate;
  - Response rate;
  - Achievement sample rate;

- Accuracy indicator for type of error Variability (only in cases when Response rate is less than 70%):
  - Coefficient of Variation.

(max 1000 words)

Pilot Study 4: Environmental data on aquaculture

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

1. Aim of pilot study

The *Commission Delegated Decision 2019/910* Chapter III Data Requirements section (6) defines that social, economic and environmental data collection is optional for freshwater aquaculture. As there is no aquaculture in sea or in coastal waters and the freshwater production is on the low level in Latvia it is not planned to collect environmental data in aquaculture sector. The pilot study is not planned.

2. Duration of pilot study

Only freshwater aquaculture. The pilot study is not planned.

3. Methodology and expected outcomes of pilot study

Only freshwater aquaculture. The pilot study is not planned.

(max 900 words)

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

According to the *Commission Delegated Decision 2019/910* Table 10 the processing industry data collection could be carried out on a voluntary basis. However, the data concerning processing industry in Latvia are collected for the EUROSTAT database. The same data could be provided also for Data collection needs. The data collection for the fish processing industry is based on questionnaires/statistical forms and State Revenue Service information. The data is provided to Central Statistical Bureau of Latvia by fish processing enterprises in accordance with their bookkeeping information.

The social data in fish processing will be collected for 2020. The detailed description about the social data collection provided in Text Box "Pilot Study 3".

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

All economic active enterprises having the EUROSTAT classification according to definition NACE Code 10.20. 'Products' "Processing and preserving of fish, crustaceans and mollusks" are involved in the surveys. The participation of the responders is obligatory according to the Latvian national legislation. All economic data are stored in the CSB database. Type of data collection is "Census". The Response rate for the collected data is 100%.

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

The questionnaires should be filled in by each company involved in commercial activity during the sampling year.

4. Description of methodologies used for estimation procedures

For the calculation of the Value of unpaid labour data about average personal costs and number of unpaid persons will be used. The definitions and methodology for other variables will be applied according to the definitions provided by the document from PGECON 2019 report "Definition and methodologies for the socio-economic data described in EU-MAP".

5. Description of methodologies used on data quality

The following quality indicators will be calculated for the data collection type "Census":

- Accuracy indicator for type of error Bias:
  - Coverage rate;
  - Response rate;
  - Achievement sample rate;

- Accuracy indicator for type of error Variability (only in cases when Response rate is less than 70%):
  - Coefficient of Variation.

(max 1000 words)

Text Box 4A: Sampling plan description for biological data

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

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

Baltic Sea

Data will be collected for all fleet segments in the Baltic Sea. Collected material contains data from open sea vessels and coastal area boats (vessels < 12 m). Primary sampling unit for all segments is vessel trip. The sampling effort will be allocated taking into account the recommendation that metier should be sampled monthly if the fishing trips are less than two weeks long. The duration of fishing trips of all metiers in the Baltic is less than two weeks long therefore they all will be sampled on monthly basis. However, e.g. in herring trapnet fishery, the samples are collected more often because these data are used as tuning fleet in the assessment.

In 2019, 43 trawlers and 2 gillnetters were fishing in the open part of the Baltic Sea. Trawlers belong to two segments: 12-< 18 m operating in the Gulf of Riga and 24-<40m operating in the Baltic Sea and the Gulf of Riga. The most numerous segment is the small vessels with length <12 m with polyvalent passive gears, operating in the coastal zone.

Information for each year about open sea vessels will be obtained from Fisheries Department in Ministry of Agriculture. In the end of each year, the Department establishes a list for the next year with fishing vessels which have the right to carry out commercial fishing in the Baltic Sea and the Gulf of Riga outside the coastal waters. Information in this list is split by species and fishing areas for each individual vessel.

Using information from this list and logbook data from last year three separate vessel lists will be created:

- List with ships that can perform pelagic fishery in the Baltic Sea;
- List with ships that can perform demersal fishery in the Baltic Sea;
- List with ships that can perform pelagic fishery in the Gulf of Riga.

Part of the vessels depending from the gear used and fishing area can be in different lists. For these three kinds of fisheries probability sample survey, in which data are collected from randomly selected units of a population, will be used. Excel function Ran between will be used for random selecting of ships from the list.

Random ship selection from the corresponding list will be used for pelagic and demersal fishery in the open sea. Vessel selecting protocol should note the following information:

- The name of selected vessel;
- Type of fishing / segment;
- Is able to enter into contact with the ship's representative - (negotiation date, time, contact person, phone);
- Does the ship is available for data collection on the next voyage (yes / no, if "no" then the reason why it is not possible);
- Does the ship is suitable for the observer to work (yes / no);
- Do contact with a representative of the fishing vessel is successful (yes / no);
- Has the journey taken place on the selected ship (yes / no).

If is not possible to carry out the planned trip, the selection process is repeated and next ship from the list is selected.

Biological data collection from the pelagic fishery in the Gulf of Riga will be performed using random draw from vessels and the samples will be collected from the selected vessels by observers on-board or in the harbours.

In the coastal (small scale) fisheries non-probability sample survey, in which data are collected from non-randomly selected units of a population will be used. In the coastal fishery we will conclude contracts with several fishermen for the self-sampling and collection of biological samples. These fishermen will evenly cover the coastal area. The sampling will include also separate on-board visits to fisherman and comparison with the self-sampling data.

Biological information length, age, weigh, sex ratio and sexual maturity will be collected for 10 species: *Anguilla anguilla, Clupea harengus, Gadus morhua, Perca fluviatilis, Platichtys flesus, Psetta maxima, Salmo salar, Salmo trutta, Sander lucioperca and Sprattus sprattus*. Problems with maturity determination for *Salmo salar, Salmo trutta, Sander lucioperca* can be in the coastal fishery. Fishermen's sell fishes ungutted. Maturity stage can be determined by season. Target species in the pelagic fishery in the Gulf of Riga is *Clupea harengus*. Target species in the pelagic fishery in the Baltic Sea are *Sprattus sprattus and Clupea harengus*. Target species in the demersal fishery in the Baltic Sea are *Gadus morhua and Platichtys flesus*. Target species in the coastal fishery are all selected species for biological data collection except *Sprattus sprattus*.

During the on-board sampling comprehensive sampling of all species will be performed. It should be highlighted that in the Baltic Sea most of the metier perform rather clean fishery and the by-catch of non-target species is low or could be absent at all. The on-board sampling will be used for demersal fishery where the discard level for flounder should be determined. In metiers where discards are low on-board sampling or sampling in harbours will be applied except trawl fishery targeting *Sprattus sprattus* where additionally on-board sampling will be performed to estimate the by-catch of herring. During the on-board sampling data are collected from each fishery act.

Quality of obtained biological and length data are accessed by calculating precision for each species, quarter, gear and length/sex/age class using bootstrap method to see if the collected sample size is sufficient to achieve precision of 5% or 20%.

Eastern Arctic

There are two Latvian vessels fishing in the Eastern Arctic. The fishing quota is acquired in exchange between NAFO and NEAFC. The vessels are targeting Atlantic cod (*Gadus morhua*) and Shrimp (*Pandalus borealis*) with beam or otter trawl. No sampling is planned due to unpredictable timing and geographical scope of fishing trips. It is planned to find solution by signing bi or multilateral agreement with other countries which fleet is operating in the same area.

Other regions (CECAF area Central East Atlantic)

Started from 2019 only two vessels are operating in CECAF area. Both vessels are fishing with pelagic trawl and targeting assemblage of small pelagic fishes: *Trachurus spp., Scomber spp., Sardina pilchardus and Sardinella maderensis.* The discard level is low. Starting from 2012 the sampling of pelagic fisheries is performed on the basis of multi-lateral agreement between Germany, Latvia, Lithuania, the Netherlands and Poland by observers. The sampling results are presented in the Annual report of the Poland.

AMENDMENT TO:

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)

September 2020

This Amendment replaces the original end-date of the multi-lateral agreement and extends the time-frame for this multi-lateral agreement. The extension of the time-frame commences 1st of January 2021.

The Multi-lateral agreement between Germany, Latvia, Lithuania, The Netherlands and Poland for biological data collection of pelagic fisheries in CECAF waters, as signed by all countries named in 2017 for 2018-2020 is amended as follows from 1st January 2021 onwards:

Basis:
The basis for the agreement is updated to the latest regulations. Following EU regulation 1004/2017 and EU Delegated Decision 2019/910: Germany, Latvia, Lithuania, The Netherlands and Poland hold the obligation to collect representative biological data from the fisheries for small pelagics by freezer trawlers in the CECAF area.

Term:
The multi-lateral agreement is extended beyond its initial end date of 31 December 2020. The new end date is 31 December 2023.

Costs:
The cost share of the total costs and maximum costs remain unchanged.

Governance:
This agreement is covered under the remit of the RCG LDF. Substantial changes to requirements, staff costs and/or substantial legal and/or financial amendments automatically lead to a review of this agreement.

Signatures for agreement

Member State	Name	Function	Date and signature
Germany	Christoph Stransky	National Correspondent	Date: 16 Oct 2020 C. Stransky
Latvia	Aivars Bērziņš	Director, Institute of Food Safety, Animal Health and Environment BIOR	Date:_____
Lithuania	Vilda Griūnienė	Ministry of Agriculture of the Republic of Lithuania Fisheries unit Chief specialist	Date:_____
Poland	Ireneusz Wójcik	Head of Department (NMFRI), DCF Coordinator	Date: 27/10/2020
The Netherlands	Sieto Verver	Head Centre for Fisheries Research	Date: 27/10/2020

(max 900 words per Region)