

Ministry of Agriculture Forestry and Food of the Republic of Slovenia

and

Fisheries Research Institute of Slovenia

Regulation (EU) 2017/1004 of 17 May 2017

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

Commission 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

# **Slovenia Work Plan for data collection in the fisheries and aquaculture sectors**

2018-2019

Version 1 – 2018

(Our Ref. No.: 342-6/2016/94)

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## SECTION 1: BIOLOGICAL DATA

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

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

#### 1. Aim of pilot study

To assess the share of catches from recreational fisheries in relation to commercial catches

#### 2. Duration of pilot study

Two years. Slovenia is going to start planning and designing the pilot study and perform it until the end of December 2018. The resultant data is to be available by end of May 2019.

#### 3. Methodology and expected outcomes of pilot study

Recreational fishery data collection will include two data sources:

1. Recreational fishery landing data (for recreational fisherman members of the recreational fishery societies).
2. Data collected with observers (for recreational fisherman who are not members of recreational fishery societies)

Data from both sources will be analysed and compared with the data derived from commercial fisheries. Comparison of data from recreational fisheries and those from commercial fisheries will give a figure of the relative share of catches of recreational fisheries.

The target population will consist of all recreational fishing, including activities carried out on shore (eg. angling, spearing and fish caught using harpoons) and onboard vessels.

The target population also includes recreational fishing from the shore in order to assess the potential share of catches in relations to commercial catches of this type of fishing. If found insignificant it will be omitted from future data collection schemes.

*(max 900 words)*

## SECTION 1: BIOLOGICAL DATA

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

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

Method selected for collecting data.

Anadromous and catadromous species data collection in fresh water will not be performed due to following reasons:

1. *Anguilla anguilla* is protected species in Slovenia and it is not fished.

In Slovenia eel is present in Adriatic hydrographic basin. The species is protected under Decree on protected wild animal species (OJ RS, No. 46/04, 109/04, 84/05, 115/07, 32/08 – Constitutional Court's Decision, 96/08, 36/09, 102/11 and 15/14). It is prohibited to intentionally damage, kill, take from nature, catch, take and retain or agitate eels. It is also prohibited to have eels in captivity, to transport, to sell or trade eels taken from the nature. Therefore it is not fished neither by commercial neither by recreational fisherman. Because of this Slovenia can not collect data on eel as specified in EU MAP III.2.c. In cases of incidental catch of eel in freshwater or marine fisheries, the data on number and weight are regularly recorded.

2. *Salmo salar* is not present in Slovenian waters.

3. *Salmo trutta* in Slovenia is represented by subspecies *Salmo trutta fario* which is not anadromous.

*(max 250 words per Area)*

## SECTION 1: BIOLOGICAL DATA

### **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.*

Following the 2016 Recommendation of RCM Med&BS-LP on pilot studies for the assessment of incidental catches of birds, mammals, reptiles and fish and the 2017 Recommendation of the RCG Med&BS on pilot studies on incidental catch of vulnerable species, the RCG Med&BS 2017 has agreed to carry out the following pilot studies:

- 2018: Pilot study for assessing incidental catches of vulnerable species from bottom trawlers
- 2019: Pilot study for assessing incidental catches of vulnerable species from longlines
- 2020: Pilot study for assessing incidental catches of vulnerable species from set nets (gillnets).

The proposed metiers and year of sampling are in agreement with the GFCM planned incidental catch sampling programme which will be performed in the period 2018-2020 (Mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries ).

#### 1. Aim of pilot study

The aim of the pilot studies is to assess the impact of main fisheries on the vulnerable species and to collect accurate information on these species in terms of quantities, gears, temporal and spatial areas.

#### 2. Duration of pilot study

Each pilot study related to selected metier will have a duration of one year.

#### 3. Methodology and expected outcomes of pilot study

In overall, the methodology that will be followed for collecting data on incidental catch includes the collection of data from:

- Observer programmes for the identified fleet
- Logbook completion by fishers
- Interviews with fishers.

The guidelines for monitoring incidental catch of vulnerable species and processing the collected data, will be based both on the outputs of the EU MARE/2014/19 project for the Med&BS, and the GFCM guidelines on incidental catch (under preparation). Data to be collected will include: identification of species, number and weight (when possible) of individuals, gear specifications, location and timing of catches.

#### Expected outcomes

With the implementation of the planned pilot studies, it is expected that accurate information will be collected on the species incidentally caught, as well as their quantities, locations and the timing of such catches. This information will increase the knowledge on incidental catch in the region. Based on the results, systematic monitoring programme may be proposed for certain metiers/areas.

The knowledge gained under the pilot study and possible future systematic sampling will be very useful for the formulation of possible management measures for minimising incidental catch of vulnerable species in the region.

*(max 900 words)*

## SECTION 1: BIOLOGICAL DATA

### Text Box 1G: List of research surveys at sea

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

#### 1. Objectives of the survey

Objective of International bottom trawl survey in the Mediterranean (MEDITS) is to produce biological data on the demersal resources in the Mediterranean Sea.

The aim of the survey is to monitor demersal species (spatial and temporal distribution, abundance indices) in the sea fishing area of the Republic of Slovenia following the MEDITS Instruction Manual.

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

The survey is performed in one day with the MEDITS bottom trawl net, performing two samplings in sea fishing area of the Republic of Slovenia.

All captured fish that are not target species are counted and weighed altogether, MEDITS survey target species are taken to our laboratory, weighed, measured, and their sex and sexual maturity are determined. Therefore ecosystem indicators 4 are collected. The data are stored in the national database.

Manual: [http://www.sibm.it/MEDITS%202011/docs/Medits Handbook 2016 version 8 042016.pdf](http://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2016_version_8_042016.pdf). Map is included in the manual.

#### 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 performed in one day using Italian research vessel. Slovenian scientists are present during entire survey on the vessels, all specimens are taken and analysed by Slovenian scientist. For details see manual.

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

MEDITS is conducted on board of Italian vessel. Slovenia, as the part of the survey is very short in its fishing area (less than 1 day), does not participate in the vessel costs. Samples are taken and analysed by Slovenia. Costs of Slovenian scientist and data analysis, storage, handling, processing and reporting are paid by Slovenian data collection programme.

Land and maritime border between the Republic of Slovenia and the Republic of Croatia is determined based on the final and binding arbitration award of 29th June 2017 (in accordance with the Arbitration agreement between the government of the Republic of Slovenia and the Government of the Republic of Croatia signed on 4 November 2009).

#### 5. Explain where thresholds apply

NA

*(max 450 words per survey)*

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

1. Objectives of the survey

Mediterranean International Acoustic Survey (MEDIAS). The aim of the echo-survey is to monitor small pelagic species (spatial and temporal distribution, abundance indices) in the sea fishing area of the Republic of Slovenia following the MEDIAS protocol.

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

All captured fish that are not target species are determined, counted and weighted altogether, following the MEDIAS protocol. MEDIAS survey target species are counted and weighted, measured, their sex is determined, their sexual maturity is determined and up to 10 specimens from each length class are prepared for otolith reading in the laboratory in Ancona.

Data (echo-track) is stored in the Italian database for the joint survey of northern Adriatic Echo-survey, and the results of two samples of fish caught in Slovenian waters are (besides Italian) also stored in the Slovenian database.

Manual: <http://www.medias-project.eu/medias/website/handbooks-menu/handbooks/MEDIAS-Handbook-March-2015.pdf/>.

Map: <http://www.medias-project.eu/medias/website/map/mediasmap.html>.

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

The survey in the sea fishing area of the Republic of Slovenia is a small part of joint North Adriatic Echo-survey performed by Italian scientists from CNR ISMAR of Ancona (<http://www.ismar.cnr.it/>) with the research vessel G. Dallaporta each year, usually in September or October. The survey is performed in one day by echo-sounding the track of the protocol for Northern Adriatic including two samplings with MEDIAS pelagic trawl net in sea fishing area of the Republic of Slovenia.

MEDIAS is covered by Mediterranean EU Member States (Spain, France, Italy, Malta, Slovenia, Croatia and Greece).

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

MEDIAS is conducted on board the Italian vessel. Slovenia, as the part of the survey is very short in its sea fishing area (less than 1 day), does not participate in the vessel costs. Italy takes also in charge analysis and reporting of the data of all the samples collected. Costs of Slovenian scientist participating in the survey are paid by Slovenia.

Land and maritime border between the Republic of Slovenia and the Republic of Croatia is determined based on the final and binding arbitration award of 29th June 2017 (in accordance with the Arbitration agreement between the government of the Republic of Slovenia and the Government of the Republic of Croatia signed on 4 November 2009).

5. Explain where thresholds apply

NA

*(max 450 words per survey)*

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

1. Objectives of the survey

Rapido trawl survey in the Northern Adriatic Sea (SoleMon). The aim of the survey is to monitor benthic species (spatial and temporal distribution, abundance indices) in the sea fishing area of the Republic of Slovenia following the SoleMon protocol.

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

The catches of the two gears towed simultaneously are analysed separately for “RAPIDO A” and “RAPIDO D”. The whole catch of each gear is weighted and sorted for all finfish species, rays, sharks, cephalopods and commercially important shellfish and crustaceans, total weight by species is collected. A sub sample for the epibenthos/benthos species and debris (shells, litter, wood, etc.) is analysed fresh on board, weight and number is recorded for each of the individuals identified to the lowest taxonomic level possible.

Manual is in the appendix and it includes also map.

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

The survey in sea fishing area of the Republic of Slovenia is a small part of joint North Adriatic survey performed by Italian scientists from CNR ISMAR of Ancona (<http://www.ismar.cnr.it/>) with the research vessel G. Dallaporta each year, usually in November. The survey is performed in one day by rapido trawl in sea fishing area of the Republic of Slovenia.

SoleMon is covered by Mediterranean EU Member States (Italy, Slovenia and Croatia).

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

SoleMon is conducted on board the Italian vessel. Slovenia, as the part of the survey is very short in its sea fishing area (less than 1 day), does not participate in the vessel costs. Italy takes also in charge analysis and reporting of the data of all the samples collected. Costs of Slovenian scientist participating in the survey are paid by Slovenia.

Land and maritime border between the Republic of Slovenia and the Republic of Croatia is determined based on the final and binding arbitration award of 29th June 2017 (in accordance with the Arbitration agreement between the government of the Republic of Slovenia and the Government of the Republic of Croatia signed on 4 November 2009).

5. Explain where thresholds apply

NA

*(max 450 words per survey)*

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

Monitoring of fisheries resources with otter bottom trawl in the fishing sea of the Republic of Slovenia.

1. Objectives of the survey

The aim of the survey is to monitor exploitation of demersal species in Slovenian waters independent and irrespective of data available on commercial fisheries. This data will serve as the basis of monitoring of the state of demersal stock and ensuring of sustainable fish stock exploitation in the sea fishing area of the Republic of Slovenia

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

Sampling will be performed by Fisheries Research Institute of Slovenia and conducted with hired fishing vessel 4-times per year at the three systematically pointed places in Slovenian waters (in total 12 hauls). All catches will be sorted on board. Organisms of all categories will be counted, weighted and identified to the lowest taxonomic level possible. Fishes, cephalopods and crustaceans will be taken in the laboratory, where individual specimen will be measured for: body length, weight, sex and sexual maturity.

Map:

page 2, of the following link;

[http://www.vlada.si/fileadmin/dokumenti/si/projekti/2010/Arbitrazni\\_sporazum/merged\\_0\\_.pdf](http://www.vlada.si/fileadmin/dokumenti/si/projekti/2010/Arbitrazni_sporazum/merged_0_.pdf)

Land and maritime border between the Republic of Slovenia and the Republic of Croatia is determined based on the final and binding arbitration award of 29th June 2017 (in accordance with the Arbitration agreement between the government of the Republic of Slovenia and the Government of the Republic of Croatia signed on 4 November 2009).

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 performed in every quarter of the year by otter bottom trawl in the fishing sea of the Republic of Slovenia.

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

NA

5. Explain where thresholds apply

NA

*(max 450 words per survey)*

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

Monitoring of catch composition with otter bottom trawl (type "volantina") in the specific stretch between 1.5 and 3 nautical miles from the coast in Slovenian waters

1. Objectives of the survey

The aim of the survey is to monitor catch composition of demersal species in the specific stretch between 1.5 and 3 nautical miles from the coast in Slovenian waters with focus on species from Annex III of Council Regulation (EC) No 1967/2006 and cephalopods. This data will serve for monitoring of derogation in terms of the minimum distance from the coast and the minimum sea depth for "volantina" trawlers fishing in the territorial waters of Slovenia demonstrating the share of catches of species from Annex III of Council Regulation (EC) No 1967/2006 and cephalopods.

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

Sampling will be performed by Fisheries Research Institute of Slovenia and conducted with hired fishing vessel once every two months with two hauls (in total 12 hauls per year) in the stretch between 1.5 and 3 nautical miles from the coast in Slovenian waters. All catches will be sorted on board aiming to provide data on: catch composition, data on retained/ discarded length composition by species and share and composition of juvenile organisms of bottom trawler mainly fishing in the zone between 1,5 NM and 3 NM.

Map:

page 2, of the following link;

[http://www.vlada.si/fileadmin/dokumenti/si/projekti/2010/Arbitrazni\\_sporazum/merged\\_0\\_.pdf](http://www.vlada.si/fileadmin/dokumenti/si/projekti/2010/Arbitrazni_sporazum/merged_0_.pdf)

Land and maritime border between the Republic of Slovenia and the Republic of Croatia is determined based on the final and binding arbitration award of 29th June 2017 (in accordance with the Arbitration agreement between the government of the Republic of Slovenia and the Government of the Republic of Croatia signed on 4 November 2009).

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 performed in every two months per year with two hauls (in total 12 hauls per year) by demersal otter trawls in the stretch between 1.5 and 3 nautical miles from the coast in Slovenian waters.

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

NA

5. Explain where thresholds apply

NA

*(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.

Fishing activity data (Capacity, effort and landings data) are collected for all vessels active at any point in time of the year. Capacity data are collected for vessels registered on 31. December of reference year. Data are collected under Regulation (EU) No. 1224/2009.

Fishing capacity data are part of the Fleet Vessel Register Module of the information system InfoRib. The Fleet Register data will be integrated with other sources of data in order to obtain data at the level of fleet segments and at the level of métiers. In order to obtain the data according to Table 4 of the multi-annual Union programme two data sources will be used: Fleet Vessel Register data and Logbook data.

Effort data will be collected for all vessels active at any point in time of the reference year. The data will be collected from the logbooks. All Slovenian vessels, also those under 10 meters, are obligated to submit the logbooks.

The target populations for the landing data will be all vessels from the Slovenian Fleet (also those under 10 meters). The data will be collected and crosschecked from 3 sources; the logbooks, sales notes and questionnaires.

The quality of the data is ensured since all vessels are taken into account. As a type of data collection Slovenia will use census. All parameters will be gathered with the help of more sources which guarantees the cross-checking of data.

The prices of fish will be collected through questionnaires and sales notes. For cross-checking purposes the data from AJ PES (Agency of the Republic of Slovenia for Public Legal Records and Related Services) – income and quantity of catch acquired from logbooks will be used (total income / total catch = price per kg).

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

The data on the quantity of landings will be collected from the logbooks, while the price of the fish will be collected from the sales notes and through the use of a survey questionnaire.

On the basis of both kinds of data the value of all landings in Euros per species will be calculated and namely for the métiers as well as for fleet segments.

There was no specific action taken for vessels under 10 meters. Because we are collecting all data in same way regardless of the vessel length.

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

Average price per species – prices in Euros per kilo live weight without the VAT; the data will be collected from sales notes and through the use of a survey questionnaire. Slovenia will use weighted average prices.

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

Slovenia collecting complete sets of data for all of the fishing vessels (also for vessels under 10 meters) so no other methodologies for collecting the complementary data are not planned.

*(max 900 words per Region)*

## 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

Bases for the collection of the economic and social variables are Table 5A and 6 of the multi-annual Union programme. Collection of this variables combines use of the information from three main resources:

1. Questionnaire information returned on a voluntary basis,
2. The Slovenian data base InfoRib,
3. The annual accounts of business enterprises.

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise. Most of the data will be cross-checked, e.g. value of landings from InfoRib will be checked with Income from annual accounts, landings from log book will be checked with sales in kg from sales notes, all costs from questionnaires will be checked with the costs from annual accounts etc. For checking the data will also be used databases from other public services such as Statistical Office of the Republic of Slovenia, Chamber of Commerce and Industry of Slovenia etc.

The economic and social variables will be collected for all vessels regardless of their activity (also for vessels under 10 meters). All economic variables will be collected for active vessels. For inactive vessels only capacity indicators and capital value and costs will be collected

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

As a type of data collection Slovenia will use census. In the case of a census with non-responses, Slovenia will estimate variables using method of extrapolation. Extrapolation is based on the assumption that trends in the observations will continue outside the rang for which data are known. Slovenia will extrapolate data for each segment separately, so that there will be no errors due to different values in different segments.

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

Because of the census used, the whole population is covered.

#### 4. Description of methodologies used for estimation procedures

As a type of data collection Slovenia will use census. In the case of a census with non-responses, Slovenia will estimate variables using the method of extrapolation. Extrapolation is based on the assumption that trends in the observations will continue outside the range for which data are known.

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

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise.

The target population is entire fishing sector in Slovenia. A survey (questionnaire) will be carried out on an annual basis. All enterprises will be given questionnaire, developed by group of experts. Questionare will cover the entire population (census).

With the combination of the data from census questionares and official registers we expect to obtain good and reliable quality data.

Regarding data quality some accuracy indicators will be calculated;

- Response rate; achieved number of respondents who supplied data / frame population number
- Coverage rate; total value of production of the respondent units / total value of production of the frame population
- Coefficient of Variation (CV); only in case of response rate <70%

*(max 900 words per Region)*

## SECTION 3: ECONOMIC AND SOCIAL DATA

### **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

To analyse the feasibility of collecting social variables as indicated in Table 6 of the EU-MAP Regulation, separately for the fisheries and aquaculture sectors on a triannual basis starting in 2018.

To test the research process and protocol.

To develop and test the efficacy of research instruments and protocols.

To estimate statistical parameters for later analyses.

#### 2. Duration of pilot study

One year, starting in 2017.

#### 3. Methodology and expected outcomes of pilot study

Pilot studies will be based on quantitative and qualitative methods. The first phase of a pilot will involve in-depth interviews with focus groups to establish the issues to be addressed in a large-scale questionnaire survey. Next the questionnaire, e.g. the wording and the order of the questions, or the range of answers on multiple-choice questions, will be piloted. A final pilot will be conducted to test the research process, e.g. the different ways of distributing and collecting the questionnaires. The main participants in the research will be fisherman, Employment Service of Slovenia and Pension and Disability Insurance Institute of Slovenia.

One of the outcomes of a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated. The pilot study will also give an answer of feasibility of the research.

After first year the methodology will be updated following the guidelines that will be provided by PGECON during 2017 in this regard.

*(max 900 words)*

## SECTION 3: ECONOMIC AND SOCIAL DATA

### **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

Bases for the collection of the economic and social variables are Table 6 and 7 of the multi-annual Union programme. The target population is entire marine aquaculture sector in Slovenia. Collection of this variables combines use of the information from three main resources:

1. Questionnaire information returned from the aquaculture sector on a voluntary basis,
2. Data base: 'Central register of aquaculture and commercial fish pond infrastructure' from MAFF (Ministry of Agriculture, Forestry and Food),
3. The annual accounts of business enterprises.

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise. Most of the data will be cross-checked, e.g. all costs from questionnaires will be checked with the costs from annual accounts, income from questionnaire will be checked with the income from annual accounts, etc. For checking the data also databases from other public services such as Statistical Office of the Republic of Slovenia, Chamber of Commerce and Industry of Slovenia etc. will be used.

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

As a type of data collection Slovenia will use census.

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

Because of the census used, the whole population is covered.

#### 4. Description of methodologies used for estimation procedures

As a type of data collection Slovenia will use census. In the case of a census with non-responses, Slovenia will estimate variables using method of extrapolation. Extrapolation is based on the assumption that trends in the observations will continue outside the rang for which data are known. Slovenia will extrapolate data for each segment separately, so that there will be no errors due to different values in different segments.

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

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise. The target population is all marine aquaculture sector in Slovenia. A survey (questionnaire) will be carried out on an annual basis to provide data on all the parameters. All enterprises will be given lengthy questionnaire, which will be developed by experts. Data will be collected on the whole population so we do not expect any problems in achieving good quality of the data.

With the combination of the data from census questionares and official registers we expect to obtain good and reliable quality data.

Regarding data quality some accuracy indicators will be calculated:

- Response rate; achieved number of respondents who supplied data / frame population number
- Coverage rate; total value of production of the respondent units / total value of production of the frame population
- Coefficient of Variation (CV); only in case of response rate <70%

*(max 1000 words)*

## SECTION 3: ECONOMIC AND SOCIAL DATA

### **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*

To assess the feasibility of collecting the environmental data indicated in Table 8 of the EU-MAP Regulation through sub-sampling and extrapolating it to the whole population.

To test the research process and protocol.

To test an intervention strategy and identify the components that are most important to the facilitation of the intervention.

To test methodological changes to implementation or administration of an instrument and train personnel on the administration of instruments.

To develop and test the efficacy of research instruments and protocols.

To estimate statistical parameters for later analyses.

#### *2. Duration of pilot study*

Duration of the pilot study is estimated at one year. Start will be in 2018 because the collection of this data is required every two years. Therefore, PGECON and RCM Med&BS have the opportunity to discuss these pilot studies in 2017, in preparation for the year 2018.

#### *3. Methodology and expected outcomes of pilot study*

Pilot studies will be based on quantitative and qualitative methods. The first phase of a pilot will involve in-depth interviews with focus groups to establish the issues to be addressed in a large-scale questionnaire survey. Next the questionnaire, e.g. the wording and the order of the questions, or the range of answers on multiple-choice questions, will be piloted. A final pilot will be conducted to test the research process, e.g. the different ways of distributing and collecting the questionnaires. The main participants in the research will be marine aquaculture enterprises and Administration of the Republic of Slovenia for Food Safety, Veterinary Sector and Plant Protection (UVHVVR)

One of the outcomes of a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated. The pilot study will also give an answer of feasibility of the research.

*(max 900 words)*

## SECTION 3: ECONOMIC AND SOCIAL DATA

### **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

Basis for the collection of economic and social data on processing industry is Table 11 of the multi-annual Union programme. The target population will be entire fish processing companies in Slovenia. Data will be collected on the whole population of processing enterprises. The national program for collection of economic data for the processing industry combines information from three main resources:

- Questionnaire information returned from processing companies on a voluntary basis,
- The data from Veterinary Administration of the Republic of Slovenia (VARs),
- The annual accounts of business enterprises.

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise. Most of the data will be cross-checked, e.g. all costs from questionnaires will be checked with the costs from annual accounts, income from questionnaire will be checked with the income from annual accounts, etc. For checking the data will also be used databases from other public services such as Statistical Office of the Republic of Slovenia, Chamber of Commerce and Industry of Slovenia etc.

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

As a type of data collection Slovenia will use census.

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

Because of the census used, the whole population is covered.

#### 4. Description of methodologies used for estimation procedures

As a type of data collection Slovenia will use census. In the case of a census with non-responses, Slovenia will estimate variables using method of extrapolation. Extrapolation is based on the assumption that trends in the observations will continue outside the range for which data are known. Slovenia will extrapolate data for each segment separately, so that there will be no errors due to different values in different segments.

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

The data collected from all sources are combined in such a way that a complete set of accounting items is compared for each business enterprise. The target population is all fish-processing sector in Slovenia. A survey (questionnaire, with personal contact) will be carried out on an annual basis to provide data on all the parameters. All enterprises will be given lengthy questionnaire, which will be developed by the experts.

With the combination of the data from census questionnaires and official registers we expect to obtain good and reliable quality data.

Regarding data quality some accuracy indicators will be calculated;

- Response rate; achieved number of respondents who supplied data / frame population number
- Coverage rate; total value of production of the respondent units / total value of production of the frame population
- Coefficient of Variation (CV); only in case of response rate <70%

*(max 1000 words)*

## 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.*

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

Samples will be gathered at the fishing port by purchasing the boxes directly from the randomly selected boats. We will take one randomly selected box of *Sardina pilchardus* and one randomly selected box of *Engraulis encrasicolus* from purse seiners each month.

The total length will be measured from the tip of the snout to the tip of the longer lobe of the caudal fin with the lobes compressed along the midline. The measurement precision is one millimetre.

Weighing will be performed after most of the liquid drains off with measurement precision of 0,1 gram.

The sex will be defined macroscopically during dissection following three categories: male, female, and undetermined (impossible to determine).

Age will be determined by macrostructural-level otolith (sagitta) reading. The reading is carried out with a stereomicroscope under reflected light. Counting of bands or rings is always carried out from the central zone to the marginal zone. Both otoliths of an individual are read and the readings are carried out by at least two separate readers. If, on comparison, the readings results are non-homogenous, a third reader is required (Morales-Nin, 1987).

The weight at age, length at age, maturity at age and sex ratio at age for the landing is assumed to be the same as for the sample and will be calculated as the sample mean for each age.

*(max 900 words per Region)*