

Austrian Federal Ministry of Agriculture,  
Forestry, Environment and Water Management



**Council Regulation (EC) No 199/2008 of 25 February 2008**  
concerning the establishment of a Community framework for the collection, management and  
use of data in the fisheries sector and support for scientific advice regarding the Common  
Fisheries Policy

**Commission Regulation (EC) No 665/2008 of 14 July 2008**  
laying down detailed rules for the application of Council Regulation (EC) No 199/2008

**Commission Implementing Decision (EU) 2016/1251 of 12 July 2016**  
adopting a multiannual Union programme for the collection, management and use of data in  
the fisheries and aquaculture sectors for the period 2017-2019

# **Austrian Work Plan for data collection in the fisheries and aquaculture sectors 2017-2019**

Vienna, October 2016

# CONTENTS

- SECTION 1: BIOLOGICAL DATA ..... 3
  - Pilot Study 1: Relative share of catches of recreational fisheries compared to commercial fisheries ..... 3
- SECTION 1: BIOLOGICAL DATA ..... 4
  - Pilot Study 1a: Data collection of whitefish stocks in three Austrian alpine lakes ..... 4**
- SECTION 1: BIOLOGICAL DATA ..... 5
  - Text Box 1E: Anadromous and catadromous species data collection in fresh water ..... 5
- SECTION 1: BIOLOGICAL DATA ..... 6
  - Pilot Study 2: Level of fishing and impact of fisheries on biological resources and marine ecosystem ..... 6
- SECTION 1: BIOLOGICAL DATA ..... 7
  - Text Box 1G: List of research surveys at sea ..... 7
- SECTION 2: FISHING ACTIVITY DATA ..... 8
  - Text Box 2A: Fishing activity variables data collection strategy ..... 8
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 9
  - Text Box 3A: Population segments for collection of economic and social data for fisheries 9
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 10
  - Pilot Study 3: Data on employment by education level and nationality ..... 10
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 10
  - Pilot Study 3a: Socio-economic data in the fisheries and aquaculture sectors in Austria ..... 10**
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 13
  - Text Box 3B: Population segments for collection of economic and social data for aquaculture ..... 13
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 14
  - Pilot Study 4: Environmental data on aquaculture ..... 14**
- SECTION 3: ECONOMIC AND SOCIAL DATA ..... 16
  - Text Box 3C: Population segments for collection of economic and social data for the processing industry ..... 16
- SECTION 4: SAMPLING STRATEGY FOR BIOLOGICAL DATA FROM COMMERCIAL FISHERIES ..... 17
  - Text Box 4A: Sampling plan description for biological data ..... 17

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

*Not applicable – Austria is a landlocked country*

2. Duration of pilot study

-

3. Methodology and expected outcomes of pilot study

-

*(max 900 words)*

## SECTION 1: BIOLOGICAL DATA

### **Pilot Study 1a: Data collection of whitefish stocks in three Austrian alpine lakes**

*General comment: This Box fulfills Article 2 and Article 4 paragraph (3) point (a) of this Decision.*

#### 1. Aim of pilot study

For a long-term and effective management of commercially used fish stocks (whitefish) it is of the utmost importance to not only keep catch statistics, but also to regularly collect data on population structure and stock size. With such regularly collected data, it is possible to suitably analyse changes in fish stocks and to timely respond to changes. Age and length structures, growth, condition factor and age at maturity constitute important and essential fish biological basic data in this context. To estimate the amount of fish that can be taken sustainably, a hydroacoustic assessment of fish biomass is essential. It is the aim of the proposed pilot study to create a suitable starting point for ensuring optimum response in the event of landlocked countries being subject to a mandatory collection of socio-economic data in the future.

#### 2. Duration of pilot study

The main fish species exploited commercially in the Austrian lakes is whitefish, and, accordingly, whitefish stocks are subject to high fishing pressure. Thus, for the period 2017-2019, the examination of whitefish stocks of three Austrian lakes (Lake Wolfgangsee, Lake Attersee and Lake Hallstättersee) is planned. The collection takes place annually in late September/early October respectively.

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

The fish (appr. 150 animals per examination year) are caught using a fleet of gill nets with 9 different mesh sizes (15, 20, 25, 30, 35, 45, 55 and 70 mm) or with standardised Nordic multi-mesh nets. The aim in this context is to catch, to the extent possible, all age groups equally well. In order to be able to compare the samples of the different lakes, the catches are performed as CPUE (catch per unit effort). The caught fish are measured, weighed and tested for abnormalities (damage caused by hooks, injuries, parasites, etc.). Moreover, scale samples (whitefish) are taken for determination of age, sex and maturity stage age.

Age determination will be made by counting annuli from projected slide images of dried and cleaned scales. Two independent readers, to whom information such as length or weight will not be available, have to age each fish three times. The most frequent age-value will be used for further calculations.

The results are represented in histograms or plots in the form of growth curves. age and length structures as well as plots representing maturity stage.

The overall fish biomass of the lakes is estimated with a scientific echo sounder (SIMRAD EK 60 with a 7°x7°

composite split beam transducer). Surveys are conducted exclusively during night hours along zigzag transects three times (autumn to winter) per lake. The acoustic data is analysed with Sonar 5 Pro post-processing software. Based on these data overall fish biomass as well as mean size distribution in 2 cm classes will be calculated.

Owners of fishing rights will be involved in the monitoring programme and provided with yearly data on stocking and harvest.

At the end of this monitoring programme profound ecological data sets on the development of age and length structure, maturity and growth of the fish will be available. Age and length structure can be used to draw conclusions about fishing pressure and reproduction success. Data on age and length at maturity allow verification of the used mesh size and/or of the existing minimum size limit. Based on the data of growth and condition factor changes in food supply and problems with dense populations can be derived.

Moreover, after the study has been completed, data on the overall fish biomass will be available for each lake as a basis to size up sustainable yield.

A short annual report will be prepared after finishing the yearly surveys and a final report at the end of the study. The final report will contain recommendations how to optimise the fisheries management of the investigated lakes.

## 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.

Not applicable

Austria has no relevant stocks for relevant Anadromous and relevant Catadromous species in Austrian fresh water

*(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.*

1. Aim of pilot study

no sampling for biological data at sea - Austria is a landlocked country

2. Duration of pilot study

-

3. Methodology and expected outcomes of pilot study

-

*(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

no research surveys at sea - Austria is a landlocked country

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

-

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

-

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

-

5. Explain where thresholds apply

-

*(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.

*Not applicable - no fishing activity above threshold*

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

-

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

-

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

-

*(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

*Not applicable - no fishing activity above threshold*

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

-

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

-

4. Description of methodologies used for estimation procedures

-

5. Description of methodologies used on data quality

-

*(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

Not applicable

2. Duration of pilot study

-

3. Methodology and expected outcomes of pilot study

-

*(max 900 words)*

SECTION 3: ECONOMIC AND SOCIAL DATA

**Pilot Study 3a: Socio-economic data in the fisheries and aquaculture sectors in Austria**

*General comment: This Box fulfills paragraph 6 point (a-b) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (c) of this Decision. It is intended to specify data to be collected under Table 6, 7 und 9 of the multi-annual Union programme.*

Proposal for a pilot study on collecting and/or possibilities for collecting socio-economic data in the Austrian fisheries and aquaculture sectors

1. Aim of pilot study

Being a landlocked country, Austria is currently largely exempt from data collection in the fisheries and aquaculture sectors. This is why for this sector, when compared with other member states, only few data sets are available and/or there is comparably little knowledge on the development potential of existing social and economic data sets that could be evaluated for the sector. By way of a pilot project on the collection of socio-economic data, a comprehensive picture of data availability regarding the Austrian fisheries and aquaculture

sectors is to be created, and, moreover, possibilities for collecting currently not yet (sufficiently) existing data sets are to be pinpointed and, to the extent possible, made operational (first pilot collections going beyond feasibility). This way, not only the basic possibility of collecting data and generating pilot data sets and/or a political monitoring system, but also the practicability, proportionality as well as the technical optimisability of data collection are to be identified.

The aim of the proposed pilot study is the creation of a suitable starting point for ensuring optimum response in the event of landlocked countries being subject to mandatory collection of socio-economic data in the future.

## 2. Duration of pilot study

The implementation period of the pilot study is scheduled for appr. 18 months. The pilot study is to be completed, in any event, at the end of 2018.

## 3. Methodology and expected outcomes of pilot study

The basis for the pilot study is constituted by the variables given in *Table 6: Social variables for the fishing and aquaculture sectors* and *Table 7: Economic variables for the aquaculture sector*, by taking into account *Table 9: Segmentation to be applied for the collection of aquaculture data* of the Annex to the Commission Implementing Decision adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019.

In a first step, existing databanks and databases are screened to identify the availability of the mentioned variables and/or the respective modification/evaluability of these databases. In this process, the following databases are important in particular:

- Labour Market Database (AMDB) of the Austrian Public Employment Service (AMS) and of the Federal Austrian Ministry of Labour, Social Affairs and Consumer Protection (BMAK) (based on a pooling of insurance data of the Main Association of Austrian Social Security Institutions (HVSV) and AMS data)
- Coordinated labour statistics (including published indicators from the areas of demographics, education, labour statistics as well as households and families)

For those data for which no database exists, a suitable collection method is to be considered in a next step. In this process, different methods may be used:

- Additional information may be collected e.g. by way of direct interviews with companies (on-site, over the phone or through the post) (presumably mainly concerning cost data). To keep collection costs as well as the effort expended by the companies low, the prerequisite for and significance of a suitable sample are to be verified in this context (concentration sample).
- Another option is constituted by the collection of data by way of contribution-margin calculations, as they are currently carried out e.g. for agricultural holdings featuring cash crop production, cattle farming or pig farming. The possibilities for application of the methods are to be assessed in the course of study implementation.

In particular with regard to the area of employment data for gainfully employed persons, valid and comparably easy-to-collect data sets are expected, as the Labour Market Database – that provides information on the employment status of all persons who have a registered address in Austria – constitutes a reliable and comprehensive instrument.

The pilot study also is to serve the purpose of assessing and subsequently minimising the effort caused by longer-term data collection regarding the indicators given in Tables 6 and 7 of the Commission Implementing Decision. Thus, it shall be ensured that data collection is designed in such a way as to not entail any disproportionate effort. This is to minimise the risk that the cooperation of companies in terms of data collection is discouraged. It shall also be considered that due to the small-scale nature of the sector in Austria, a collection of company indicators according to the individual predetermined segments (salmon, trout, carp etc. pursuant to Table 9) is to be analysed for usefulness. It is reasonably expected that difficulties will arise mainly with regard to the surveying of unpaid labour.

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

*Not applicable – Austria is looking by Pilot study 3a for methodologies and data sources for the collection of economic and social data for aquaculture*

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

-

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

-

4. Description of methodologies used for estimation procedures

-

5. Description of methodologies used on data quality

-

*(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

- Ecosystem services assessment of Austrian aquaculture
- Assessment of fish mortalities caused by predators focusing on the European otter
- Identifying key factors to increase the national fish production

#### 2. Duration of pilot study

24 months

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

- **Ecosystem services assessment of Austrian aquaculture**

An assessment of the Ecosystem Services (ESS) of Austria's aquaculture will be compiled. The Environment Agency Austria has already developed a methodology for the assessment of ESS in Agriculture. This includes the estimation of different ESS in qualitative, quantitative and monetary terms. For the issue of aquaculture this methodology will be adapted. The Study "Ponds in the landscape – IMPORTANCE, FUNCTION & THREATS" (<http://www.wasseraktiv.at/resources/files/2014/9/10/6668/teiche-landschaft-ebook.pdf>) provides the data basis for the ESS assessment.

The main outcome will be values for different ESS, as example provisioning functions (production), regulation functions (i.a. water protection), cultural functions (i.a. recreation) or habitat functions (i.a. biodiversity).

The study will also take account of the specific conditions of production in organic aquaculture and its effects on the environment. Therefore the number of organic fish farms, production volume etc. will be collected and processed by official statistics and qualitative interviews with sector experts and representative entrepreneurs.

The ESS of Austria's aquaculture can be compared to the current situation of supply with seawater and freshwater fish from abroad, if related results of studies are available.

- **Assessment of fish mortalities caused by predators focusing on the European otter**

Conflicts arising from otter (*Lutra lutra*) predation on commercial fish are nowadays a common phenomenon in many European countries. At fish farms, damage is usually defined as loss of stocked fish revealed when a

pond is drained. Since a fish farming period expands usually over several months, the recorded losses at the moment of pond draining represent damage accumulated during a longer period. At this time the causes of damage are not necessarily evident any more.

A number of different reasons for losses (other fish predators, fish diseases etc.) exist and the otter is only one of them. Therefore, it is extremely difficult to properly assign the correct amount of damage to the different causes of loss. A standardized method to estimate fish mortalities caused by otters will be applied which provides information on the damage and losses in fish farms due to specific predators.

**Methodological approach:**

- Semi-qualitative questionnaire-based survey among commercial fisheries in Austria
  - Estimation of otter densities in the area of 3-5 selected and representative fish farms
  - Estimation of fish mortalities taking into consideration following factors: Disease, parasites, injuries, fishery, predators
  - Assessment of the effects on fish populations caused by predators, particularly the otter
  - Comparison between the survey and the empiric investigation
- 
- **Identifying key factors to increase the national fish production**

In 2014 Austria adopted the strategy paper “Aquaculture 2020 – Austrian strategy to increase the national fish production”. The key target within this strategy is to raise the degree of self-supply with freshwater fish from then 34 % to 60 % until 2020. At present it seems that this objective cannot be attained. There are various reasons discussed, but none of these reasons is verified. A survey as described below will identify key factors and barriers for the sustainable increase of production.

**Methodological approach:**

- Quantitative questionnaire-based survey among authorizing authorities of Austrian Provincial Governments
- Semi-qualitative questionnaire-based survey among commercial fisheries and business sector representatives in Austria
- Identifying key factors (and barriers) to increase national fish production.

*(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

*Not applicable - no collection of economic and social data for the processing industry is planned 2017-19*

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

-

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

-

4. Description of methodologies used for estimation procedures

-

5. Description of methodologies used on data quality

-

*(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

*Not applicable – no data sampling for biological data necessary*

*(max 900 words per Region)*