

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

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

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

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

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

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

Commission Implementing Decision (EU) 2021/...

laying down rules on the format for the submission of work plans and annual reports for data collection in the fisheries and aquaculture sectors

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

2022 - 2024

Version 1 – 2021

Bratislava, November 2021

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SECTION 1: GENERAL INFORMATION

Data collection framework at national level

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Sector of aquaculture in Slovakia is under threshold of 1 % of the EU aquaculture production. Total aquaculture production in the EU in 2017 was 1 400 000 tons. Slovakia has in 2017 total production of aquaculture by EUROSTAT 3 272 tons. The EU aquaculture data for 2019 are by EUROSTAT confidential. Slovakian production of aquaculture is by EUROSTAT 2 688 tons, what is less than in previous years. We are already collecting data about production, employment and aquaculture facilities. Under DCF framework we are planning continue with pilot study on environmental data in pond systems under point 1a. After three rounds of approval procedure, monitoring committee finally agrees with the text of pilot study on 27th May 2021. This approval cause delay in next realisation of pilot study.

Text Box 1a: Test studies description

General comment: This text box fulfils Chapter II, section 1.2 of the EU MAP Delegated Decision annex.

1. Aim of pilot study Environmental monitoring and creation of a database on the state of pond farming in Slovakia (“pilot study”)

The main objectives of the proposed pilot study, corresponding with the global developments in this area, are:

- monitoring the occurrence of microplastics, pesticides, hormones, toxic metals, pharmaceuticals, drugs and their metabolites in water and sediments of selected ponds in Slovakia
- monitoring the possible distribution of micropollutants from water and sediments of selected ponds into fish
- evaluating the possible occurrence of selected types of micropollutants, the description of their dominant sources, their distribution into fish and the environmental risk for the aquatic ecosystem in Slovakia and the on consumer.

Based on these findings, a detailed report with recommendations for farmers, electronic brochure for fish farmers and pond owners will be produced and also the audiobook will be created for disadvantaged group of society.

Aquatic ecosystem contains many different micropollutants, such as pesticides, pharmaceuticals and drugs, which may have a dangerous impact on the aquatic environment and the organisms living there. Some types of pharmaceuticals, drugs and their metabolites are capable of affecting the behaviour, reproductive capacity and other properties of aquatic organisms even in small quantities. Currently, a significant portion of foreign studies focuses on the behaviour of these micro pollutants in the environment. Scientific studies over the past five years have indicated the presence of particular drugs not only in wastewater, surface

water or groundwater, but also in the bodies of aquatic organisms. In addition, some of these substances are able to accumulate in the environment as well as in the bodies of aquatic organisms and get into the food chain.

In this pilot study, we would like to contribute not only to the most recent scientific findings, but also to their practical use and greater protection of the environment and also get information about final fish product produced in pond environment.

However exist few data about this topic, proposed pilot study is first and unique project in Slovakia that covers all the pond-aquaculture's sector. Pilot study on the collection of environmental data and assessing the risk of micropollutants distribution into the pond aquaculture environment, a comprehensive picture of data regarding the Slovak pond aquaculture sector is to be created.

The aim of the proposed pilot study is to create a suitable starting point to ensure an optimal response for landlocked countries that are subject to mandatory environmental data collection in the future, including monitoring of the occurrence of micropollutants in water and sediments.

2. Duration of the test study

2022 – 2024 (29 months)

The project will proceed in two stages. In the first stage sampling and analysis will be carried out (22 months), followed by an evaluation of results, creation of a report and audiobook (7 months).

3. Methodology and expected outcomes of the test study

Pilot study will investigate the occurrence and possible penetration of selected species of aquatic ecosystem micro pollutants into common carp (carp) in production ponds in Slovakia using highly sensitive analytical instruments and methods. Specifically, it will be the monitoring of the occurrence and possible penetration of groups of micropollutants such as pesticides, hormones, pharmaceuticals, drugs and their possible metabolites, toxic metals or compounds from the PCB group. The monitoring will be carried up to 60 carp production ponds, the water of individual ponds (dominantly decanted samples), sediment below 5 mm and selected fish species (carp) will be analysed. During the pilot study up to 180 samples of water (the volume of one sample will be 2 liters), up to 60 samples of pond sediments (the dry weight of the sediments will be 100 g), and up to 300 pieces of selected fish (a sample of 100 g of muscle from each subject) will be analysed. The environmental impact will be compared with possible impact on carp muscle and on the consumer.

Carp will be collected in live weight range 2-3 kg. From one production pond maximum 5 carps will be collected. (approx. 300 fish to be examined). The carp will be subjected to analytical methods to evaluate the occurrence of selected specific groups of micropollutants (hormones, pharmaceuticals, drugs and their metabolites, pesticides, PCBs, toxic metals and microplastics) which can enter into fish from pond environment.

From a scientific point of view, it is essential that the method development and data collection on Slovak production ponds is subject up to 60 ponds to make a relevant statistical statement. Because of the different nature conditions, there are influences on the results of

the survey, which cannot be determined in advance. These factors can only be determined and taken into account adequately when interpreting data in a statistically sufficiently secure data situation. Data sets from smaller amount of ponds cause higher statistical uncertainties and may therefore lead to misinterpretation of data and results.

The analysis of individual types of micropollutants groups will be carried out using several analytical techniques:

- GC and LC-MS / MS (analysis of pesticides, hormones, pharmaceuticals, drugs and their metabolites or compounds of the PCB group),
- UV-VIS spectrophotometer (selected metals, some PCBs),
- Atomic absorption spectroscopy (AAS) (selected toxic metals)
- FTIR / Raman spectroscopy, fluorescence and SEM electron microscopy (microplastics and nanoplastics),

Also the possible hormonal (estrogen) activity of the obtained samples will be investigated.

SECTION 6: ECONOMIC AND SOCIAL DATA IN AQUACULTURE

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

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

1. Description of the threshold application

Please provide a percentage for the Member State's production from the latest EU aquaculture production reported to EUROSTAT.

Total aquaculture production in the EU in 2017 was 1 400 000 tons. Slovakia has in 2017 production by EUROSTAT 3 272 tons. The EU aquaculture data for 2019 are by EUROSTAT confidential. Slovakian production of aquaculture by EUROSTAT reached 2 688 tons, what is less than in the previous years.

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

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

(max. 900 words)