



## METHODOLOGICAL EXPLANATION FISHERIES STATISTICS

***This methodological explanation relates to the data releases:***

- Marine fishing, Slovenia, annually (First Release)
- Aquaculture, freetime and sport fishing, Slovenia, annually (First Release)
- Fisheries – persons in employment and production facilities, Slovenia, annually (First Release)

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## 1 PURPOSE

The published data represent economic and environmental protection characteristics of fisheries in Slovenia. Economic characteristics of fisheries are represented with data on the physical extent of commercial fishing and aquaculture, the value of landing and aquaculture, production facilities and the number of persons in employment in these activities. Data on the quantity and species of water organisms caught, including data on recreational and sport fishing, data on fishing areas and the quantity of fishing discards, are the basis for assessing the environmental protection characteristics of fishing.

### »Marine fishing«

Data on landing of fish products on the territory of the Republic of Slovenia and data on catch of marine organisms in the FAO 37.2.1 fishing region (northern part of the Adriatic Sea), which is the fishing region of the Slovene fishermen, show the mass of landed fishery products (i.e. caught marine organisms), in live weight equivalent, by species of marine organisms, their average purchase prices and total value of landing.

### »Aquaculture, freetime and sport fishing«

Data on aquaculture in marine and inland waters in the Republic of Slovenia show the mass of water organisms bred for human consumption, by species, their purchase prices and the estimated value of their total production. Additionally, the data on the mass of fish caught in freshwater angling and the data on the mass of marine organisms caught in freetime fishing are also published.

### »Fisheries – persons in employment and production facilities«

Data show statistics on persons in employment in fishery in Slovenia (marine commercial fishing and aquaculture), on registered fishing vessels and on production facilities in aquaculture.

In the SI-STAT Database data on **fishing discards from fishing vessels** registered for commercial fishing are also shown.

## 2 LEGAL BASIS

- [Annual Programme of Statistical Surveys \(LPSR\)](#) (only in Slovene)
- [National Statistics Act](#) (OJ RS, No. 45/95 and 9/01)
- Regulation (EC) No. 1921/2006 of the European Parliament and of the Council on the submission of statistical data on landings of fishery products in Member States
- Regulation (EC) No. 216/2009 of the European Parliament and of the Council on the submission of nominal catch statistics by Member States fishing in certain areas other than those of the North Atlantic (recast)
- Regulation (EC) No. 762/2008 of the European Parliament and of the Council on the submission by Member States of statistics on aquaculture
- Regulation (EC) No. 26/2003 of the European Parliament and of the Council on the Community fishing fleet register

- 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
- Agreement for the implementation of the provisions of the UN Convention on the Law of the sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks, New York, 1995, Annex 1
- Marine Fishing Act (OJ RS, No. 115/2006) and Rules on Leisure Sea Fishing (OJ RS, No. 64/2008)
- Freshwater Fishing Act (OJ RS, No. 61/2006) and Rules on Fisheries Register and Records in Fisheries (OJ RS, No. 18/2008)
- Rules of the central register of aquaculture facilities and commercial ponds and on the collection of data on livestock and production from aquaculture (OJ RS, No. 3/11)
- Other legal bases

Data on catch, landing and the value of landing, aquaculture and the value of production in aquaculture, and vessels and production facilities in aquaculture are internationally comparable. Other data are not internationally comparable, because for these data there is no common methodology at the EU level.

Data and deadlines for publication are determined based on determined international and national needs for data and determined deadlines for their transmission to Eurostat and FAO.

### **3 UNIT DESCRIBED BY THE PUBLISHED DATA**

In releases »Marine fishing« the unit described by the published data is the landed fishery product (type of water organism, mass, purchase price).

In releases »Aquaculture, freetime and sport fishing« the unit described by the published data is the water organism in the sea or inland waters bred for human consumption or marine or freshwater organism caught in recreational fishing.

In releases »Fisheries – persons in employment and production capacity« the units described by the published data are persons in employment in fishery, registered fishing vessels and aquaculture facilities. For every particular person in employment above all we are interested in the frequency of his/her work (full-time, part time work). The main characteristics of fishing vessels are their length, tonnage and power of main engine. Regarding the aquaculture facilities we monitor, among other, the area and the volume of water bodies used for rearing water organisms.

### **4 SELECTION OF OBSERVATION UNIT**

In all fishery statistics we observe all units of every particular population except the statistics on fishing discards.

For statistics on landing, catch and fishing discards observation units are active fishing vessels of fishing enterprises, self-employed fishermen and farmers engaged in commercial marine fishing. Active fishing vessels are vessels with landing and sale of

fishery products in the reference year. Based on the records of the Ministry of Agriculture, Forestry and Food (MAFF), it is possible to cover in landing and catch statistics all active observation units (all active vessels). In the past five years on average around 85 fishing vessels were active. In 2017 in Slovenia there were 171 vessels registered for economic fishing.

Active fishing vessels are also observation units for data on average prices of landed fishery products, which are estimated for all species of caught and sold products (around 100 species a year).

All active vessels in commercial marine fishing are the sampling frame for selecting units for the sample for estimating the species and quantities of fishing discards. Selected for the sample are those vessels that catch with the most commonly used fishing tools on fishing vessels. The survey is conducted by the Fisheries Research Institute of Slovenia (FRIS).

For aquaculture statistics, observation units are aquaculture facilities or commercial ponds for market production of marine or freshwater fish or shells for human consumption. For statistics on the fish eggs and juveniles production and statistics on aquaculture facilities for commercial production, the observation unit is aquaculture facility for human consumption commercial production or the facility for repopulation of inland waters. The production unit could have more different water areas and could use them regarding the particular rearing phases of water organisms. In the past three years around 130 such units were entered in the Central Register of Aquaculture Facilities and Commercial Ponds at the Ministry of Agriculture, Forestry and Food. Aquaculture facilities are managed by business entities that have permission to use water for breeding water organisms and that in the reference year breed water organisms (around 100 legal and natural persons). They are reporting units which could report for more observation units at one time. In Slovenia around 25 species of fish and shells are bred for sale.

For statistics on the number of persons in employment in fishery, the observation unit is a business entity with at least one active vessel in the reference year (active business entity in commercial fishing) or a business entity that is active in aquaculture. An active business entity in aquaculture is the one with at least one aquaculture facility or commercial pond in the reference year and engaged in market production of water organisms. The mentioned active business entities represent the population for statistics on persons in employment in Slovenia.

For statistics on freetime and sport fishing at sea or in inland waters, the observation unit is a natural person with a licence for sport fishing by the fishing Association of Slovenia or a holder of freetime fishing licence by the Sea Sport Fishing Federation of Slovenia.

For statistics on fishing vessels, the observation unit is a vessel registered for fishing as a commercial activity. A registered aquaculture facility or commercial pond is the observation unit for statistics on production facilities in aquaculture.

## 5 SOURCES AND METHODS OF DATA COLLECTION

All data on fishery statistics are collected from secondary sources: administrative (MAFF database "InfoRib", MAFF database "The Central Register of Aquaculture Facilities and Commercial Ponds", FRIS database "The Fishery Cadastre") and statistical data (statistical survey SRDAP at SURS, statistical survey on the state of marine fishing in Slovenia – FRIS).

Data on landing (species of caught organisms, mass, average purchase prices) and data on catch of marine organisms (species of caught organisms, mass) are collected from all active fishing vessels. Data from log-books are collected and entered into the »InfoRib« database of the Fisheries Research Institute, managed by the Ministry of Agriculture, Forestry and Food.

Data on average prices of landed fishery products are collected by the Fisheries Research Institute with The questionnaire on the socioeconomic situation of marine fishing in Slovenia for the reference year (n-1), (Council Regulation (EC) No. 199/2008).

The Fisheries Research Institute conducting the survey on fishing discards collects the data on board of the fishing vessel selected for the sample.

Data on aquaculture production are collected with a prescribed form, with direct access to the MAFF database, by regular mail or by telephone from all active commercial aquaculture facilities entered in the Central Register of Aquaculture Facilities and Commercial Ponds. Data on species, quantities and purchase prices of organisms bred are collected. The source of data is the Ministry of Agriculture, Forestry and Food. Data on all active production facilities (area and volume of these facilities) are collected by MAFF, too.

Data on all active business entities in marine fishing and aquaculture (administrative data) are linked with data from the Statistical Register of Employment (SRDAP) and thus the number of persons in employment in fishery in Slovenia is estimated. More information on SRDAP is accessible in Methodological explanations for the statistical survey "Labour force". The source of data is SURS.

Data on freetime and sport fishing at sea or in inland waters are the data on species of caught water organisms and their mass in kg are collected. The source of data for sport fishing in inland waters is FRIS as well as for the data on freetime fishing at sea – up to 2015. From 2016 onward the data source is the Ministry of agriculture, forestry and Food.

Data on registered fishing vessels and production capacity in aquaculture are annual data from abovementioned sources of the Ministry of Agriculture, Forestry and Food as of 31 December of the reference year (n-1).

## 6 DEFINITIONS

**Commercial marine fishing** is an economic activity (NACE 3.110) that covers catching of marine organisms and their landing on the national territory.

**Aquaculture** is an economic activity (NACE 3.2) that covers breeding of water organisms. Aquaculture statistics (mass of water organisms bred and purchase prices of these products) covers only breeding of water organisms for human consumption.

**Mariculture** is part of aquaculture production and refers to the market oriented breeding of marine animals (NACE 3.210).

**Sport fishing in inland waters (angling)** is the catch of freshwater fish in a sporting way as regulated in the Freshwater Fishery Act, the Rules on Fisheries Register and Records in Fisheries and the regulations of the Fishing Association of Slovenia.

**Freetime fishing at sea** is the catch of marine water organisms as regulated in the Marine Fisheries Act, the Rules on Leisure Sea Fishing and the regulations of the Sea Sport Fishing Federation of Slovenia. Data include: marine sport fishing based on the annual licence, marine sport fishing with underwater fishing gun, recreational fishing with daily or weekly licence and data from organized sport competitions.

**Landing** means the mass of all fishery products landed on the Slovene territory, including the data on the value of this landing in EUR.

**Unit landed value** means the value at first sale of the fishery products landed and divided by the quantity landed (EUR/kg).

**Landing value** is the product of the landed mass of fishery products in kilograms and the unit value, which is the average price of product in EUR/kg.

**Aquaculture value** in euro is the product of the mass of bred water organisms sold in kilograms and the average price of product in EUR/kg.

For calculating **average prices of fishery products** the purchase prices are used. Purchase prices do not include VAT.

Catch data are acquired from landing data which are recalculated into live weight of the landed marine organisms and represent the **data on the nominal catch**.

**Because the caught marine organisms are not processed on the Slovene fishing vessels (they are not eviscerated, filleted, iced, etc.), the data on landing are at the same time the data on the nominal catch of marine organisms.**

FAO considers the sum of the nominal catch data and data on sport and recreational catch as the catch data. Scientific and research organizations additionally consider the data on discards.

**Coldwater fish** live in waters rich in oxygen with the temperature under 20 °C.

**Warmwater fish** live in waters that in the summer reach the temperature of up to 30 °C.

**Marine fish** live in salty or brackish waters.

**Fishing discard** is live weight of marine animals thrown away by fishermen engaged in marine fishing due to the immaturity, low market value or other reasons.

**Surface of basins and ponds** is only the area of the facilities that is under water.

**Ponds** are relatively shallow and usually small bodies of still water or water with a low refreshment rate, most frequently artificially formed, but can also apply to natural pools, tarns, meres or small lakes. For the needs of FAO classification this category is additionally divided into ponds and barrages, the latter being artificially formed water bodies.

**Commercial pond** is stagnant water intended to be used for commercial sport fishing activity and from which the migration of fish to water is hindered. Fish sold in commercial ponds are considered as water organisms bred in aquaculture.

**Tanks and raceways** are artificial units constructed above or below ground level capable of high rates of water interchange or with a high water turnover rate and highly controlled environment but without water recirculation.

**Recycling systems** are breeding facilities in which after special treatment water is reused for production.

**Cages** are open or covered enclosed structures constructed with net, mesh or any porous material allowing natural water interchange. These structures may be floating, suspended or fixed to the substrate but still permitting water interchange from below.

**Shell farming area** is the area determined for shell farming with the concession contract.

**Fishing vessels** are vessels that fly under the Slovene flag and are registered for commercial fishing.

**Tonnage** is the volume of a ship's space determined according to a defined method.

**Gross tonnage (GT)** is the volume of all spaces of a vessel multiplied by the factor that depends on the ship's size. It is a number without the unit of measure.

**Engine capacity** indicates the driving capacity of the main engine expressed in kW.

**Vessel length** is the maximum length of the vessel.

**Persons in employment in fishery** are all employed and self-employed persons who have compulsory pension and health insurance, who have an employment contract and work in Slovenia, who are at least 15 years old and are not retired. The employment contract could be for a fixed or unspecified period of time and either full time or part time. Persons working under copyright contracts, contracts for work/service and unpaid family members are not covered (methodology of the Statistical Register of Employment).

Persons in part-time employment are also those persons who do not have compulsory pension and health insurance as persons in employment in marine fishing or in aquaculture but they are registered as farmers or self-employed persons and have marine fishing licence or registered fish farms (activities in fishery are supplementary economic activity).

All persons in employment in fishery should be engaged in active business entities in terms of having landing or aquaculture production in the reference period.

**Categories of frequency of work** are defined according to the weekly number of working/insurance hours. The category »**full-time employment**« covers employed and self-employed persons with employment contracts for 36 or more working/insurance hours per week. The category »**part-time employment**« covers persons with employment contracts for fewer than 36 working/insurance hours per week.

## 7 EXPLANATIONS

### 7.1 CLASSIFICATIONS

For classifying water organisms and products thereof the FAO international classification ASFIS is used (FAO List of Species for Fishery Statistics Purposes: <http://www.fao.org/fishery/statistics/en>). For classifying fishing areas the FAO international classification of fishing areas for statistical purposes is used. It is accessible at the same link as ASFIS.

Regulation (EC) No. 1921/2006 of the European Parliament and of the Council also contains a **list of fishery products** on the basis of which landed fishery products are additionally classified. In Slovenia landed products are only fresh whole fish and other fresh marine animals. These products are intended for human consumption or the purpose of use is not known.

For classifying production capacity in aquaculture the classification from Regulation (EC) No. 762/2008 of the European Parliament and of the Council on the submission by Member States of statistics on aquaculture is used.

### 7.2 DATA PROCESSING

The main processing of data on the mass of landing/catch, average purchase prices of landed products, vessels, mass of fishing discards and freetime and sport fishing is done by the Fisheries Research Institute.

The main processing of data on the mass of bred water organisms (market breeding), average purchase prices of these products and production facilities in aquaculture is done by the Ministry of Agriculture, Forestry and Food.

The number of persons in employment in fisheries is estimated by SURS.

In statistical data editing a combination of systems corrections and data imputation is implemented.

Missing data on the mass of bred water organisms are replaced by historical data or by an estimate of breeding regarding the capacity of breeding facilities. For processed fishery products, the calculation into live weight is done in the following way: for gutted fish the coefficient is 1.3 and for filleted fish the coefficient is 2.

For missing data on the prices of fishery products, average prices of the same or related fishery products (water organisms) are used, taking into account annual trends in the prices of fishery products.

The total number of persons in employment in fishery is the sum of all persons who have compulsory pension and/or health insurance regarding work performed in commercial fishing or aquaculture. If an active unit doesn't have persons insured in this way, it will be considered to have at least one person in permanent part-time employment. Regarding the status in employment these persons are classified as self-employed persons except persons, who work for fishing associations or similar organizations (part-time employed persons).

Data on sport fishing in inland waters are the sum of data collected with fishing permits (no imputation of missing data).

Data on freetime fishing at sea are expert estimations based on data collected with fishing permits and imputation of missing data.

### **7.3 OTHER EXPLANATIONS**

Letter »z« is used if the data are suppressed to protect the reporting unit. The data that are suppressed for confidentiality reasons are not published but replaced with letter "z".

Caught unidentified water organisms are classified into »other fish« (these are mostly water organisms caught in freetime fishing).

## **8 PUBLISHING**

Data are published:

### **Annually:**

- SiStat Database: Environmental and natural resources – Agriculture and Fishing – [Fishery](#). Data are published as absolute figures.
- First Release (Agriculture, forestry and fishery, Fishery and aquaculture): »Marine fishing, Slovenia, annually«,
- First Release (Agriculture, forestry and fishery, Fishery and aquaculture): »Aquaculture, freetime and sport fishing, Slovenia, annually«,
- First Release (Agriculture, forestry and fishery, Fishery and aquaculture): »Fishing – persons in employment and production capacity, Slovenia, annually«.
- Stat'o'book.
- Statistical Office of the European Union (Eurostat), Food and Agriculture Organisation of the United Nations (FAO).
- Other releases.

## **9 REVISION OF THE DATA**

### **9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA**

Only final data are published.

## 9.2 BREAKS IN TIME SERIES

### Change in nomenclature

In 1998 and 2001 the list of names of water organisms used in collecting data on the catch of marine animals in commercial fishing was expanded by including new marine animals and by monitoring individually the species of fish that used to be treated in one category (instead of the category “whiting, poor cod, European hake” from 1998 on each species is monitored separately; the same happened with the category “Common sole, Turbot and European flounder”). Later, the nomenclature was also changed considering the new species in the catch/landing data.

### Changes in the calculation of average purchase prices

Up to 2009, the Statistical Office of the Republic of Slovenia collected the data on average prices of fishery products only for these categories:

- European pilchard (PIL)
- European anchovy (ANE)
- Other pelagic fish, total (SPR, MAC, MAS, JAX, GAR, BFT, BON, FRZ, LEE, AMB)
- Gilthead seabream (SBG) – the prices of caught fish were not separated from prices of bred fish
- European seabass (BSS) – the prices of caught fish were not separated from prices of bred fish
- Whiting (WHG)
- Other white fish, total
- Cephalopods, total
- Clams and gastropods, total – the prices of caught clams were not separated from prices of bred clams

For the category “Crustaceans, total“, in which the Spottail mantis squillid (MTS) dominates, the average price was determined as the ratio between European pilchard and Spottail mantis squillid (1:3.5). The comparison of data can be assured by combining the data by individual species as they were combined up to 2009. Since 2010 the Fisheries Research Institute of Slovenia is data source on average purchase prices of marine fishery products.

Up to 2010 in aquaculture the Statistical Office of the Republic of Slovenia collected only the data on purchase prices of Rainbow trout (TRR), Common carp (FCP) and Mediterranean mussels (MSM). Since 2011 the data on purchase prices of all bred fish and shells have been collected by the Ministry of Agriculture, Forestry and Food.

### Changes in data coverage

- a. Up to 2010, data on the mass of bred water organisms contained aquaculture production for human consumption, including production for own consumption. Due to changes in legislation, from 2011 on aquaculture production for own consumption is excluded.
- b. Due to the changes in the administrative data source (Ministry of Agriculture, Forestry and Food), data on the landing and catch (commercial marine fishing) were revised from 2007 to 2012. However, changes in data are small. Data differ from those previously published by 2% at the most.
- c. Up to 2015 data on freetime fishing at sea include only the marine sport fishing based on the annual licence. From 2016 onward these data include: marine sport fishing based on the annual licence, recreational fishing with daily or

weekly licence, marine sport fishing with underwater fishing gun and data from organized sport competitions.

## 10 OTHER METHODOLOGICAL MATERIALS

- Fisheries Research Institute of Slovenia: The methodology for calculating the annual mass of discarded water organisms
- <http://www.biosweb.org>.
  
- Methodological Explanation:  
Labour force  
theme: Labour Market, sub-theme: Employees, Self-Employed and Unemployed  
<https://www.stat.si/StatWeb/Methods/QuestionnairesMethodologicalExplanationsQualityReports>