

**Documentation of statistics for
Account Statistics for Fishery 2023**

1 Introduction

The purpose of the Account Statistics for Fishery is to review the economy of the fishery sector. The statistics is used in economic models and as a basis for yearly economic statistical reports for the fishery to EU (DG Mare). The statistics has been produced by Department of Food and Resource Economics at University of Copenhagen since 1996 and was transferred to Statistics Denmark from January 2009.

2 Statistical presentation

The Account Statistics for Fishery covers the commercially fishery by fishing vessels registered in Denmark. The statistics is based on vessel units and is calculated for groups of fishing vessels (fleet segments) based on vessel size and main gear use.

2.1 Data description

The Account Statistics for Fishery specifies the factor input, production and sales revenue (value of landings), costs and operating profit, together with assets, liabilities, investments and financing. The results are calculated as totals and per vessel unit. The statistics is presented for the whole population, for vessel length groups, and for vessels grouped by length and fishing type.

2.2 Classification system

In the statistics vessels are grouped by length and by combinations of length and fishing type.

The length groups are: less than 12 m / 12.0-14.99 m / 15.0-17.99 m / 18.0-23.99 m / 24.0-39.99 m / 40 m and above.

The fishing types are: Net/hook / Trap setters / Trawlers / Danish seiners / Industrial trawlers / Other trawlers / Pursesein & trawlers / Shrimp beamtrawlers / Musseldredgers.

2.3 Sector coverage

The Account Statistics covers commercially fishery by fishing vessels registered in Denmark. All company owned and personally owned fishing vessels are included. For the Danish national statistics a threshold is used to separate less active vessels from the population.

2.4 Statistical concepts and definitions

Degree of profitability: Operating profit minus Remuneration to owners as per cent of the average Fixed assets for the year.

Assets: Fixed assets and financial assets. Fixed assets are measured by net book value, which is basically the difference between the historical cost of the asset and its associated depreciation. An exception is the value of fishing rights which is calculated using yearly estimated shadow prices for each fish species/quota stocks. Calculation of the capital value of fishing rights have been subject to changes from the first handing out of individual quotas to fishing firms (VQS vessel quota shares).

Gross output: Gross output consist mainly the total value of the production (value of landings) but include also other fishery income such as additional payment from co-operative enterprises. payment between partners in case of pair trawling, subsidies for instance due to temporary decommission, compensation for participation in research fishery, or income from rent out of quotas within the year.

Other sources includes secondary fishing income such as leasing or rent out of vessels or other operative assets, salvage money etc. Provisions (fish for own consumption) is calculated for owner and crew.

Costs: Costs include fuel, ice, provisions and stores, landings and sales costs, rent, insurance and administration etc., maintenance, depreciations and wage expenses.

Net profit: Net profit is the result after financial expenses and company taxes. Net profit provide remuneration to owners and return on net capital.

Investment: Investment for the year, purchase minus sale of fixed assets.

Operating margin: Operating profit minus Remuneration to owners as a per cent of Gross output

Liabilities: An accounting expression for how the assets are financed.

Operating profit: Gross output minus Cost (operating expenses) = Result before Financial expenditures.

Solvency: Net capital (Owner's equity) as per cent of Total assets, end of year.

2.5 Statistical unit

The statistical unit is the production unit, that might contain one ore more vessels with the same owner. The production unit has to have a gross output that is larger than the threshold, for the statistics. If the owner has more than one vessel above the threshold, the vessels will form separate production units.

2.6 Statistical population

The population covers 98 per cent of the total value of Danish fishery. The population is cut off by a threshold on minimum value of catches for the year.

2.7 Reference area

Denmark.

2.8 Time coverage

These statistics cover the time period from 2009 and onwards.

2.9 Base period

Not relevant for these statistics.

2.10 Unit of measure

Different units for different variables. Economic variables in Danish crown DKK. Factor input: Vessel capacity in Gross tonnage and over all length in meters. Diesel oil in liters. Effort and labour in Days at Sea and Man*hour. Catches in kilogram (live weight)

2.11 Reference period

Reference period is the calendar year.

2.12 Frequency of dissemination

Yearly.

2.13 Legal acts and other agreements

Council Regulation (EC) no. 2017/1004 on collection of economic data for fisheries and Commission Regulation no. 2019/910 specify the detailed rules for application. The Ministry of Food, Agriculture and Fisheries has the authority given by the Danish Fisheries act to collect the data, and has by agreement of April 23rd 2009 delegated the compilation of the statistics to Statistics Denmark.

2.14 Cost and burden

An individual cost of participation has not been estimated, as participation is optional. The accounting form is completed by the fisherman's accountant, who is guaranteed a fixed compensation for each completed account.

2.15 Comment

The account for a unit covers all economic activities during the operating year for the production unit, also for production units (vessels) that have shared ownership (joint owners/partners).

Production units with yearly revenue less than the threshold and units that are registered active less than six months during the year are placed in the residual population, for which no collection of accounts take place. Register data is available for all units in the residual population, and those are used for calculation of complementary data to produce the yearly Fleet Economic Report to EU (DG Mare). The Regulation on collection of fishery data does not permit use of threshold; therefore all production units must be included in the report, even units which have landed fish for only a few EUR.

For further information contact Statistics Denmark.

3 Statistical processing

The authorized accountants report yearly the account for their fishery client. The collected accounts are thoroughly tested. When all accounts has been approved for statistical use, the sample of approved accounts are used together with register data for the entire population to simulate individual accounts for all units not in the sample. The complete dataset with individual balanced accounts for all units in the population is merged with register data on vessel characteristics, gear use etc. in order to calculate parameters for statistical groups (vessel segments).

3.1 Source data

The economic data is collected using a harmonized electronic accounting form to be completed by the fisherman's accountant. The administrative registers in The Danish Fisheries Agency constitutes the basis for the construction of accounting units, arranging and stratification of the population, selection of the sample, and raising from sample to population.

Statistics Denmark receives data on production, production technicalities and ownership for each version of a registered fishing vessel, when landings for the year has been fully registered. These data is used for construction of the accounting units and if needed separating into vessel units.

A complementary source is logbook data, which is prepared and quality controlled by the DTU-Aqua. The logbook data is used for calculating effort and labour input.

From 2012 data on transaction of FKA (vessel quota shares) and IOK (individually transferable quotas) registered by The Danish Fisheries Agency has also been used for calculating the capital value of fishing rights in the individual accounts.

3.2 Frequency of data collection

Yearly.

3.3 Data collection

The fishery accounts are collected on a harmonized digital accounting form completed by the fisherman's accountant. Participation in the statistic is voluntary, in the sense that the fisherman beforehand has agreed to allow his accountant to report the economic data. Each year the goal is to obtain accounts for the 100 biggest fishing firms. Registerdata is collected from The Danish Fisheries Agency and DTU-Aqua.

3.4 Data validation

The fishery accounts are filled in a harmonized accounting form on a Excel file. The spread sheets are functionally connected and include both dynamic test on data entry and complementary test routines for control of relations between variables. Data is validated, and tested in the spread sheets by the accountant before reporting. After reporting the data is stored in a SQL-database and checked for consistency with the harmonized accounting form. Misplaced data is corrected, and in case of errors, or missing data the reporting accountant is asked for necessary corrections. In addition the data is compared with register data on production and vessel characteristics. In case of mismatch the reporting accountant is contacted for clarification, and corrections will be made to secure coherence between the accounting unit and the unit in the population.

3.5 Data compilation

Reported accounts are stored, validated and balanced in a MS-SQL database. Individual accounts are then simulated for all units that are not included in the sample. That is done using a method based on the SAS-program Proc MassImputation from the BANFF package. The program finds the nearest donor using a standardized relative measurement based on selected criteria parameters. That is repeated three times with selection of criteria parameters (for instance different species composition). The resulting three donors are used in calculating an average account. Finally the economic variables in the average account are scaled by a factor to ensure that the revenue in the resulting balanced account match registered total revenue (value of catch) for the simulated unit.

3.6 Adjustment

In the reported accounts quantity and value of fish landed are replaced with register data from The Danish Fisheries Agency. Values of fishing rights in the finalized balanced accounts are replaced by computed values based on registered quota shares and calculated shadow prices. The difference between reported and computed capital values are balanced out against adjustment in Net capital (Own equity) and deferred tax. For corporate ownership the distribution between Net capital and deferred tax is 75/25, whereas for personally owned enterprises a 50/50 distribution is used.

4 Relevance

The statistics is relevant for government administration, researchers and stakeholders within the fisheries. Furthermore the data is used in the Fleet Economic Report to EU.

4.1 User Needs

Users of the statistics are The Ministry of Food Agriculture and Fisheries, The Danish Fisheries Agency and other administrative authorities, EU, Fishery Associations and enterprises related to fisheries for instance credit institutions. Research Institutes together with Danish and foreign students and researchers. Furthermore the data form the basis of the Report of economic data for Fishery to EU.

4.2 User Satisfaction

The statistic is produced by commission from the Danish Ministry of Food, Agriculture and Fisheries and Statistics Denmark. An advisory committee has been established for the purpose to attend the need of the users and to maintain the quality of the statistics. The committee includes representatives from The Ministry of Food, Agriculture and Fisheries, The Danish Fisheries Agency, Department of Food and Resource Economics (IFRO) at the University of Copenhagen, DTU-Aqua, The Danish Fishers Producer Organization and Danish Pelagic Producer Organization.

4.3 Data completeness rate

The account statistics is not sufficient for producing all variables in the Fleet Economic Report to EU. Transversal variables with information on fishing activity and catches by species, gear use, and area are produced and reported by DTU-Aqua.

5 Accuracy and reliability

The statistic is based on a sample and the results are uncertain. The precision rely on the covering of the sample. Therefore the sample rate is bigger for vessels with high revenue. The aim is each year to include the 100 biggest vessels in the sample, and that approximately 80 per cent of the total value of landings in Danish fishery come from the vessels in the sample. Investments have the most uncertainty, because exchange of a vessel could result in closure of the fishing firm, and set up a new firm to run the new vessel.

5.1 Overall accuracy

About half of the units in the population are included in the sample, but because the sampling is biased towards the biggest units, more than approximately 80 per cent of the total revenue in Danish fishery is produced by the units in the sample. Data for the remaining 20 per cent of the production/revenue is known from the register. Therefore it is only necessary to estimate the cost variables for approximately 20 per cent of the total production.

Investment is the most uncertain variable, because replacement of a vessel may lead to closing down of the fishing firm, and the new vessel could then be run by a new fishing firm.

5.2 Sampling error

The main variables production and Gross output comes from administrative registers. There is no sampling error.

5.3 Non-sampling error

Uncertainty can be connected to failure of the coverage due to that panel selection and not random selection of the sample is used because the report of accounts is voluntary.

5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

5.6 Quality assessment

The accounting forms are completed by professional accountants, who themselves have interest in the publication of the statistics, and who furthermore get paid for reporting the data. The harmonized accounting form, the tests and thorough examination of the reported accounts, and finally the comparison with register data all together contribute to secure the data quality.

Production and revenue from sales are important variables in the statistics that are registered for all units in the population. Therefore the coverage of the sampled accounts is known. The quality of the simulated accounts cannot be calculated (see model assumption error), but the good coverage of the reported accounts indicate, that the error on the estimated variables in the simulated units are less significant in the statistics.

5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](#). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

5.8 Data revision practice

There is not planned revisions for the statistics. Final data are published together with the NYT from Statistics Denmark's press release.

6 Timeliness and punctuality

The statistics is normally made public before one year after the conclusion of the reference year.

6.1 Timeliness and time lag - final results

Final figures are normally published together with the press release News from Statistics Denmark before normally one year after the conclusion of the reference year.

6.2 Punctuality

The statistics is normally publicized as planned.

7 Comparability

The Account Statistics for Fishery is prepared using the same overall principles as the account statistics for agriculture, horticulture and aquaculture. The statistics has been prepared yearly since 1996. Break in series occurs in 2022 due to changes in methods for calculation population cutoff, as well as a new and improved basis for classifying which fishing types the vessels are grouped into. Break in series also occurs in 2001 due to inclusion of unpaid salary to active (working) partners, and in 2009 and again 2012 due to improved calculation of the capital value of fishing rights.

7.1 Comparability - geographical

The Account Statistics for Fishery is the basic for the yearly "Fleet Economic Report" sent to EU DG-Mare Joint Research Centre (JRC). The reported statistics for all Member States fishing fleets is available on the Scientific, Technical and Economic Committee for Fisheries' (STECF's) web-page: [Fleet Economic Performance](#).

The Scientific, Technical and Economic Committee for Fisheries (STECF) publish the statistics in "The Annual Economic Report on the EU Fishing Fleet".

The statistics published by STECF cannot be compared directly with the Danish national statistics. Variables in the EU statistics are more aggregated, and the statistical groups (vessel segments) are different from the Danish statistics, furthermore the EU Fleet statistics include units with revenue below the yearly threshold.

7.2 Comparability over time

Fisheries accounting statistics are available from 2001 grouped by vessel segments. For the years 1996 to 2000, other groupings of vessel categories and modes of operation were used when compiling the statistics, which can be found in the StatBank Denmark's archive.

There is a break in the series for 2022, because of a change in the calculation basis for the threshold level, as well as a new and improved basis for classifying which fishing types the vessels are grouped into.

In 2022, the basis for calculating the threshold level has changed from a fixed threshold value to a calculation based on the year's landing values. The population thus covers 98 percent of the business's registered landing value. Vessels with a landing value above the threshold level are included in the population, while vessels with a landing value below the threshold level are not included. This ensures solid coverage of the industry, while also ensuring that the selected vessels keep accounts that can be reported to the statistics. The threshold level in 2023 was DKK 446,504.

In the period 2012 to 2021, the threshold value has not been regulated, and has remained fixed at DKK 270,000.

Before 2012, the threshold level was calculated by a weighted index based on a three-year moving average of the price of 45 fish species. It was the individual unit's total revenue calculated by Standard catch value (=quantity*average price) that determined whether the unit was included in the year's population.

The threshold level in DKK for the years 1996-2011:

1996: 149.880 1997: 158.715 1998: 178.755 1999: 191.055 2000: 195.600 2001: 201.090 2002: 219.195 2003: 230.280 2004: 224.340 2005: 216.735 2006: 229.050 2007: 252.720 2008: 261.795 2009: 245.880 2010: 254.550 2011: 271.305

In 2022, the basis for calculating the classification of fishing type has changed from taking as a starting point a gear use code from the Norwegian Fisheries Agency's vessel register to using knowledge of the actual gear used by the vessel, which is recorded in the vessel's log book. DTU-aqua calculates on the basis of this data which types of fishing the individual vessels use. The most used fishing type defines the type of fishing under which the vessel is classified. This has meant that the seine/net/trawl type of fishing has been discontinued and that the seine wet fishing type for vessels between 15 and 18 meters has been reintroduced.

Other series breaks:

This is a series break in 2012 and 2009 because of a changed calculation of the capital value of fishing quotas. From 2009, the capital value of Vessel Quotas (FKA) in the accounting sample is calculated by the rights holders' registered quota volume at the end of the year multiplied by a model-calculated shadow price. The shadow prices are calculated as the marginal increase in the margin contribution, which occurs when a vessel's catch of the relevant quota stock is increased by 1 kg per year. The coverage contribution is calculated for a period of 16 years (until 2016 the period was eight years) and is converted to present value for the financial year with a discount rate of 4 per cent. The calculation model is described in the Food Economics Institute's Report no. 120. Now the Institute for Food and Resource Economics.

From 2012, the calculation of the capital value has been carried out for each individual company (vessel), in contrast to the years 2009-2011, where the calculation was only carried out for the accounts in the sample, which were subsequently balanced within the statistical groupings. In all accounts for 2012, both reported and simulated, the contained values of Individually Transferable Quotas (IOK) and FKA rights have been replaced with calculated capital values at the beginning and the difference to the reported values is counter-posted in the balance sheet, partly as a value adjustment of the equity, partly as provision for deferred tax.

There is a series break between the years 2000 and 2001 in the accounting statistics for the entire Danish fishing fleet because of a changed calculation method. Previously, the remuneration to working partners was deducted as an operating cost, and the ownership shares were included in the balance sheet as debt capital, but from the year 2001 (both) owners' shares are included in the equity of the fishing company, and in the personally owned fishing companies remuneration to (both) owners is now included in the operating result .

7.3 Coherence - cross domain

The Account Statistics for Fishery is based on the same principles as the Account Statistics for Agriculture, Horticulture and Aquaculture.

7.4 Coherence - internal

An important task of the data management is to ensure consistence between firms/vessel units in the reported accounts and the units based on the register entities (owners, vessel versions and production data)). Consistency is completed either by adjusting the register based units to the real units in the accounts, or to split up accounts for big fishing firms into vessel unit accounts.

8 Accessibility and clarity

The statistics is published yearly in NYT from Statistics Denmark. Data is accessible on StatBank Denmark in the tables AKFIREGN, FIREGN1, FIREGN2 and NFISK. More information on the statistics subject web-page: [Fishery](#)

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

8.2 Release calendar access

The Release Calendar can be accessed on our English website: [Release Calendar](#).

8.4 News release

These statistics are published in a Danish press release.

8.5 Publications

Publications only in Danish to 2018 inclusive [Regnskabsstatistik for fiskeri og akvakultur](#).

8.6 On-line database

These statistics are published in the [StatBank](#) in the following tables:

- [AKFIREGN] Account statistics for fishery and aquaculture by industry and items
- [FIREGN1] Account statistics for fishery (total) by vessel segment and items
- [FIREGN2] Account statistics for fishery (average per unit) by vessel segment and items
- [NFISK] Key indicators for fishery by vessel segments and items

8.7 Micro-data access

General or specific dataset (at individual level with encrypted keys) can be generated.

Researchers and students can by request through Research Services get access to anonymous individual data. [Researchdata](#).

8.8 Other

Economic data from the Account Statistics for Fishery are included in the yearly Fleet Economic Report submitted to the European Commission, DG Mare Joint Research Centre (JRC). The yearly Fleet Economic Report is available on the Scientific, Technical and Economic Committee for Fisheries' (STECF's) website: [Fleet Economic Report](#). See STECF 21-08 AER 2021.

8.9 Confidentiality - policy

[Data confidentiality policy](#) at Statistics Denmark.

8.10 Confidentiality - data treatment

Data for statistical groups with less than 3 units is not shown in the tables.

8.11 Documentation on methodology

Not relevant for these statistics.

8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

9 Contact

The administrative placement of these statistics is in the division of Food Industries. The contact person is Charlotte Spliid Hansen, tel.: + 45 2941 9776, and e-mail: CHH@dst.dk.