STATISTICS DENMARK

Documentation of statistics for Accounts Statistics for Aquaculture 2022

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1 Introduction

The statistics show the economy of the Danish aquaculture production.

2 Statistical presentation

The Account statistics for aquaculture is an annual estimation of the production value and costs, results, assets and liabilities and investments of the aquaculture sector in Denmark.

2.1 Data description

The Account statistics for aquaculture specify the factor input, production and sales revenue (gross output), costs and operating profit, together with assets, liabilities investment and financing. The statistic is presented for the whole population and for farm types.

2.2 Classification system

These statistics is grouped in farm types which are:

- Traditional farms: Land based farms with drain to water courses, lakes or the sea, and with a water intake of more than 25,000 liters per kg of feed, or with no regulated water intake.
- Farms with low recirculation: Land based farms with a water intake of between 5,000 and 25,000 liters per kg of feed.
- Farms with medium recirculation: Land based farms with a water intake of between 1,000 and 5,000 liters per kg of feed.
- Farms with high recirculation: Land based farms with a water intake of less than 1,000 liters per kg of feed.
- Sea farms: Sea based farms with net cages, wire boxes or similar, in which the production requires feed.
- Mussel and oyster farms: Sea based farms with long lines, socks, wire constructions or similar for production of mussels and oysters.

2.3 Sector coverage

Fisheries and aquaculture.

2.4 Statistical concepts and definitions

Return of investment: Profit from primary operations plus financial income, expressed as a percentage of average asset mass.

Assets: Fixed assets and Tangible assets.

Aquaculture: Farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. Farming also implies individual or corporate ownership of the stock being cultivated.

Other operating income: Income that does not relate to primary operations, such as gains from the sale of intangible and tangible fixed assets or rental income, reimbursed sickness and maternity benefits or wage subsidies, e.g. to students and unemployed persons.

Fixed assets: Assets intended for permanent ownership or use by the company, such as buildings, machinery, fixtures, patents, licenses and long-term investments of a financial nature, such as equities and bonds.

Calculated Owner Remuneration: In 2015 calculated as 380.139 DKK per enterprise with a production value of 1 mill. DKK and above. For enterprises with a production value less than 1 mill. DKK, the amount is reduced proportionally. It's corrected each year according to the development of wages in the agriculture sector.

Gross Output: The Gross Output in kroner is the value of fish, spawn, shellfish and regulation of fish stock sold from the farm. Also included is other aquaculture activities.

Costs: Costs relevant to the making of Gross Output.

Net Profit: Profit after Interest Expenditures, net, Corporation tax and extraordinary income, net. Net Profit pays the owner remuneration and invested capital.

Investments: Investments, net. investments in and sales of fixed assets.

Current Assets: Current assets covers stock, outstanding debt, other financial assets and cash balance.

Net profit ratio: Result from ordinary operation (profit before financial and extraordinary items) measured in per cent of the sum of turnover and other operating income.

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

Production: The production in metric ton is the volume sold from the farm (fish, spawn, shellfish and regulation of fish stock)

Operating Profit: Gross Output minus Costs

Farm Solvency, pct.: (Net capital, end of year / assets, end of year) * 100

2.5 Statistical unit

Unit used in the statistics is the physical production unit, the aquaculture farm.

2.6 Statistical population

The statistics covers the Danish aquaculture sector. In order to be part of the population the aquaculture farm has to be active and commercial, producing fish for consumption, Fry and fingerlings, spawn for consumption and Eyed eggs for breeding.

Non commercial farms are mainly test farms, farms producing crayfish and clubs and associations that with voluntary work force produce fish for release in to streams and lakes.

Inactive farms are primarily farms with no production in the year. If a firm with multiple farms submits the firms total production in one farm, and it is not possible to split the report into the relevant farms, the remaining farms are characterized as inactive.

2.7 Reference area

Denmark

2.8 Time coverage

The statistics covers the period from 2017 and onwards.

2.9 Base period

Not relevant for these statistics.

2.10 Unit of measure

Account variables are given in 1,000 DKK,, Key figures are given in per cent. Production volume is given in metric ton or 1,000 pieces. Energy consumption is given in megawatt hours, MWh.

2.11 Reference period

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

No response burden is estimated as participation in the survey is voluntary.

2.15 Comment

Other information is available on the statistics subject page or by contacting Statistics Denmark.

3 Statistical processing

Data for this statistics are collected yearly from the aquaculture companies' chartered accountants using an electronic accounting form. The collected accounts (the sample) are thoroughly tested, and possible errors corrected in cooperation with the reporting accountant. When all accounts are 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.

3.1 Source data

The Account Statistics for Aquaculture is based on accounts retrieved from the aquaculture companies' chartered accountants. 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.

3.2 Frequency of data collection

Yearly.

3.3 Data collection

The accounts are collected on a harmonized accounting form completed by the companies' accountant. Participation in the statistic is in principle voluntary, in the sense that the company beforehand has agreed to allow its accountant to report the economic data. The list of companies who has accepted to participate is continuously updated by Statistics Denmark.

3.4 Data validation

Every account submitted is tested thoroughly. The accountants can validate the balanced spreadsheet in MS Excel via build in macros. After submission to Statistics Denmark the accounts undergo a more thorough validation both individually and as groups.

3.5 Data compilation

The part of the population that is not in the sample is estimated using a simulation model where every item of the account is calculated on the basis of production information from the aquaculture register from The Danish Fisheries Agency and the submitted accounts divided in representative groups. Hereafter all results are aggregated in the relevant segments. Furthermore accounts for some companies has been collected from Danish Business Authority in order to get a more accurate estimate of Gross output, assets and liabilities.

3.6 Adjustment

No corrections are made other than described in data validation and data processing.

4 Relevance

The statistics is used by the fish farmers and their organization, Danish Aquaculture, as well as authorities and legislators. The statistics is used in economic models and as a basis for yearly economic statistical reports for aquaculture to EU (DG Mare). The statistics has been produced by Department of Food and Resource Economics at University of Copenhagen since 2004 and in the current form by Statistics Denmark from 2017 and onwards.

4.1 User Needs

Danish and European authorities, including particularly the The Ministry of Environment and Food of Denmark and the European Commission's Directorate-General of Maritime Affairs and Fisheries. in addition researchers and national and international students, organizations in aquaculture and enterprises broadly related to the sectors, e.g. credit grantors.

4.2 User Satisfaction

The statistics is monitored by both a contact comity and a working group. Both are orientated of the statistics and are normally satisfies with the statistics.

4.3 Data completeness rate

The statistics contains as well land as sea based aquaculture farms. Main figures are published for all commercial farm types but for types with only a few farms detailed figures can not be published.

5 Accuracy and reliability

The statistic is based on a sample, hence the results are uncertain. The aim is to include the biggest companies in the sample, and that 75 per cent of gross revenue is covered by the sample. There are no planned revisions of the statistics.

5.1 Overall accuracy

Accounts are collected for app. half of the population. Production and gross output for the rest of the population is covered by data form the Danish Fisheries Agency's Aquaculture Register. Therefore the main variables Production and Gross output are covered by 100 percent. The part of the population that is not in the sample is estimated from production information from The Danish Fisheries Agency's Aquaculture Register.

Data in The Danish Fisheries Agency's Aquaculture Register contains structure and production data for the relevant calendar year. The submitted accounts data refers to the firms relevant financial year, witch might not correspond to the calendar year. To cover the production in the relevant calendar year, the end of the financial year must be in the period of 1st. June (the relevant year) to 31st. May the following year.

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5.2 Sampling error

The main variables production and gross output are collected from administrative registers. Hence. there is no sampling error for these variables. For other variables the sampling error varies depending on how many have reported for the particular farm type.

5.3 Non-sampling error

The sampling error is also affected by the size distribution of the farms in each segment.

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 quality of the statistics is regarded as good. Annual accounts are collected for about half of the population. Production and Gross output for the rest of the population is covered by data form the Danish Fisheries Agency's Aquaculture Register. Therefore the main variables Production and Gross output are covered 100 percent. The part of the population that does not participate in the statistics is being estimated on the basis of production information from The Danish Fisheries Agency's Aquaculture Register and the submitted accounts divided in representative groups.

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 are no planned revisions of Account Statistics for Aquaculture.

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*, normally after the conclusion of the reference year.

6.2 Punctuality

The Statistics is normally publicized as planned. The statistics for 2021 is delayed by approximately two months.

7 Comparability

The statistics is comparable from 2004 to present. All EU member states submit statistics to the *Directorate-General for Maritime Affairs and Fisheries*. Hence, it's possible to make comparisons within the EU. The Danish Fisheries Agency publish a Structure and production statistics for the profession.

7.1 Comparability - geographical

The Account Statistics for Aquaculture is the basis for Denmark's submission of statistics to EU's *Directorate-General for Maritime Affairs and Fisheries*. Statistics for the member countries is published by the Scientific, *Technical and Economic Committee for Fisheries* (STECF) in the report *Economic Performance of the EU Aquaculture Sector*. The EU statistics cannot be compared directly with the Danish national statistics. Variables in the EU statistics are more aggregated, and the statistical groups are segmented differently from the Danish statistics.

7.2 Comparability over time

The statistics in the current form is comparable back to 2017.

There are also two older time series: One covers the years 2009 to 2020 where the segmentation of land based farms was different from the current series. One covers the years 2004 to 2013 where the calculation of Net Profit is different from the later series. E.g.. depreciations were not included.

7.3 Coherence - cross domain

The Danish Fisheries Agency shows production volume and production values on their homepage and in StatBank Denmark.

The Danish Fisheries Agency statistics is not directly comparable with the Account Statistics as it does not show internal sales between different farms in the firms. Furthermore, the population consists of both commercial and noncommercial farms and they cover the calendar year and not the fiscal year.

7.4 Coherence - internal

An important task of the data management is to ensure consistence between units in the reported accounts and the units based on the register entities. Consistency is accomplished by adjusting register based units to the real world units, and to split up company accounts into farm unit accounts.

8 Accessibility and clarity

The statistics is published yearly in a Danish press release and in the StatBank under Fishery and aquaculture, accounts statistics. For more information please see the subject page for these statistics.

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 Calender can be accessed on our English website: Release Calender.

8.4 News release

These statistics are published in a Danish press release.

8.5 Publications

The statistics is normally included in the annual publication Account Statistics for Fishery and Aquaculture. The publication for 2021 is not published.

8.6 On-line database

The statistics are published in the StatBank in the following tables:

- AKREGN1: Accounts statistics for aquaculture by unit, farm type and items
- NAK1: Key indicators for aquaculture by farm type and items

8.7 Micro-data access

Researchers and other analysts from authorized research institutions, can be granted access to the underlying Micro-data by contacting Research Services.

8.8 Other

More information is available in the statistics subject page. Micro-data for the statistics is available in anonymized form for special requests against payment. Read more oncustomized solutions or contact DST Consulting.

8.9 Confidentiality - policy

Data confidentiality i secured by following the Data confidentiality policy of 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

Methodology is briefly mentioned in the publication.

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, Business Statistics. The contact person is Michael Brogaard, tel.: + 45 5162 7089, and e-mail: MIB@dst.dk.