STATISTICS DENMARK

Documentation of statistics for Economics of Agricultural Activities 2023

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1 Introduction

The purpose for this statistics for Economics of agricultural activities are to analyze the economic results for individual crops and livestock production. This also applies to horticultural crops. The statistics are based on holdings that have a work equivalent to at least 1 annual work unit (1 AWU equals 1,665 working hours). Holdings are weighted together, achieving a representative statistics for full-time farms. The basic accounts statistics for agriculture has been compiled since 1916 while the economics of agricultural activities is comparable 2021 onwards. In archive a time series for 2008-2021 can be found.

2 Statistical presentation

The statistics show economic results of production branches in agriculture.

2.1 Data description

The statistics show economic results of production branches.

The distribution include the following production branches:

Cereals: - Wheat - Spring barley - Winter - Rye and triticale - Oats and mixed grain

Other cash crops: - Rapeseed - Forage Peas - Broad beans - Sugarbeets - Potatoes for consumption - Starchpotatoes - Grass seeds - horticulture in the open - horticulture in greenhouse - Annual crops for energy - Perennial crops for energy - Other cash crops

Roughage: - Maize (for silage) - Whole crop (grain and peas) - Fodder beet - Grass in rotation - Permanent grass

Cattle: - Dairy cows - Breeding for dairy cows - Slaughter calves - Suckler Cows - Breeding for suckler cows

Pigs and poultry: - Sows (including piglets to 7 kg) (only for conventional production) - Piglets (30 kg) (only for conventional production) - Sows incl. piglets (only for organic production) - Pigs for slaughter (Also divided by own piglets or bought piglets) - Chickens (egg laying) - Broilers

Other livestock and other sources: - Other animal production - Other sources

2.2 Classification system

Agricultural activities are divided in 36 different activities.

The statistics comprises the following variables:

- Population, number of holdings
- Sample, number of holdings
- Area, ha
- Animals, average number
- Crop yield, hkg per hectare
- Standard milk yield, kg per cow
- Product price, DKK per hkg
- Milk price, DKK per kilo, standard
- Labour input, hours/(hectare, animal)

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- AGRICULTURAL ASSETS, BEGINNING OF THE YEAR
- Stocks
- Livestock
- Equipment
- Buildings
- Land improvement
- Milk quota
- Rights
- PRODUCTION VALUE
- Main product
- By-product
- Manure
- Environmental subsidies
- Subsidies etc.
- COSTS I
- Seed
- Fertilizer and manure
- Pesticides etc.
- Energy
- Contract operation
- Other Crop costs
- Calculated interest, stocks and livestock
- Feeding stuff
- Straw material
- Veterinary services and pharmaceutical costs
- Insemination
- Other livestock costs
- CONTRIBUTION MARGIN I
- COSTS II
- Labour costs
- Maintenance, equipment
- Depreciation, equipment
- Calculated interest, equipment
- CONTRIBUTION MARGIN II
- COSTS III
- Property tax
- Insurances
- Miscellaneous costs
- Maintenance and depreciation, buildings
- Maintenance and depreciation, land improvement
- Calculated interest, buildings
- Calculated interest, land improvement
- TOTAL COSTS
- RENT
- Land cost
- LABOUR INCOME
- LABOUR INCOME, DKK PER HOUR

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2.3 Sector coverage

Agriculture and horticulture.

2.4 Statistical concepts and definitions

Labour Costs: Total value of labour input, both paid and unpaid.

Labour Input: Used working hours per production unit.

Contribution Margin I: Production value minus Costs I.

Contribution Margin II: Production value minus Costs I and Costs II.

Land Cost: Calculated as an opportunity cost equal the rent for tenancy for an average hectare. The land cost is calculated without land tax and the right to obtain single payment and without payment for buildings.

Rate of Return to Land: Production value minus Total Costs. The key figure for crop production. Rate of return to land is the profit to land when all production factors are paid for.

Labour Income: Total profit plus Labour Costs. For crop production defined as Rate of return to land minus Land costs + Labour costs.

Labour Income per Hour: Calculated per working hour for a given activity.

Total Profit: Production value minus Total costs. The key figure for husbandry. Total profit is the result after all production factors have been paid for.

Costs I: Variable costs.

Total Costs: Total costs: Costs I + Costs II + Costs III.

Costs II: Partly variable costs.

Costs III: Fixed costs.

Production Value: The total production value, incl. in-holding consumed products and by-products such as straw and manure.

Annual animal units: One animal unit is equal to 365 fodder days.

2.5 Statistical unit

The statistical unit agricultural farms.

Data on crops are published per hectare, per square meter for greenhouses. For activities with livestock the unit is per animal, except for piglets, pigs for slaughter and egg-laying hens where the unit are 100 animals and chickens for slaughter where the unit is 1.000 chickens produced.

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2.6 Statistical population

Agricultural holdings with at least 1,665 hours work yearly. Thus the statistics covers full-time farms which are expected to have farming as their main occupation.

2.7 Reference area

Denmark.

2.8 Time coverage

2021-

2.9 Base period

Not relevant for this statistic.

2.10 Unit of measure

Account items in DKK per hectare or unit of animals. Furthermore area in hectares and yield in hectokilo or kg.

2.11 Reference period

Accounts statistics for agriculture are based on calendar accounts.

2.12 Frequency of dissemination

Published once a year.

2.13 Legal acts and other agreements

The collection of data is based on the owner's acceptance that the farm financial information may be obtained from the accounting office / auditor. The statistics are not regulated by the EU.

2.14 Cost and burden

It is not meant to be a burden on respondents as the survey is voluntary and data are paid for.

2.15 Comment

None.

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3 Statistical processing

The main source to the statistic is account information from accounting offices organized in SEGES. This information is retrieved electronically from the accounting system Ø90 supplemented with necessary additional information (eg. working hours). In addition some financial data for a small number of holdings are retrieved from other accounting offices.

The holdings in the sample are checked for outliers and might be excluded in total or from certain activities. The holdings in the final sample are weighted to the population.

3.1 Source data

Data to this statistics are based on a sample of financial accounts for full-time farms with agricultural and/or horticultural activity. Full-time farms are defined as farms using at least 1,665 working hours per year. The main source to the statistic is primarily account information from accounting offices organized in SEGES Innovation. This information is retrieved electronically from the accounting system Ø90 supplemented with some necessary additional information. In addition some financial data for a small number of holdings are retrieved from other independent accounting offices, which reports on an electronic questionnaire. Another source is the statistical data on agricultural structure from Statistics Denmark, which is the basis for determining the population.. Finally, records of subsidies are retrieved from the Danish Agricultural Agency.

3.2 Frequency of data collection

Yearly.

3.3 Data collection

Data are mainly collected as a system to system solution towards the common accounting system in SEGES Innovation called Ø90. Some account, from accountants not using Ø90, are delivered on questionnaires. The questionnaire can be found here.

3.4 Data validation

Before accounts are delivered to Statistics Denmark there are a number of tests, also stop-tests, in the accounting system Ø90 and in the questionnaires. After receiving the data at Statistics Denmark a sophisticated test is performed for each holding. The test is particular sophisticated because individual data are delivered to FADN, DG Agri.

The accounts are elaborated to this statistics for agricultural activities, where each activity are further tested for outliers.

3.5 Data compilation

Using econometric methods there have identified individual and average key figures for respectively conventional and organic farms, after which it is possible to distribute the cost items on productions branches and measure the financial result of each activity. The econometric analysis are carried out by Department of Food and Resource Economics at University of Copenhagen.

The sample is weighted by use of the SAS program CLAN that optimizes individual weights for some target variables.

3.6 Adjustment

Not relevant for this statistic.

4 Relevance

These statistics are primarily used by researchers and authorities as input into economic models and analyzes.

4.1 User Needs

Danish authorities, especially the Ministry of Environment and the Ministry Food, Agriculture and Fisheries, researchers and students nationally and internationally, agricultural organizations. Businesses related to agriculture sector in the broad sense, such as credit institutions.

4.2 User Satisfaction

Feed back is received from the expert group on agricultural accounts statistics. Members of the working group are from the Ministry of Food, Agriculture and Fisheries of Denmark, the Danish Agricultural Agency, the Department of Food and Resource Economics at Copenhagen University, Danish Agriculture and Food Council and SEGES Innovation.

4.3 Data completeness rate

Not relevant for this statistic.

5 Accuracy and reliability

By selection priority is given to farms included in the statistics several years in a row. Together with a uniform collection of data from Ø90 this ensures a high overall reliability of data.

5.1 Overall accuracy

The statistics are based on a sample and the results are therefore somewhat uncertain, although there is a representative extract with a stratification that takes into account that all farms in the population represented. The overall accuracy is considered good. Among the branches of production some are less reliable because of a relatively small area of crop or small number of livestock. Overall, the statistics are based on calculated data and as such is dependent on how precisely such ratios for the distribution of costs is estimated. The estimation is done with emphasis on significant results.

For the data in the Accounts Statistics fro Agriculture 2018 there are some calculations on certainty in Accounts statistics for agriculture 2022 pp. 102-103. (In Danish).

5.2 Sampling error

Sample of full-time farms account for approximately 20 per cent of the number of full-time holdings in 2023. For the data in the Accounts Statistics fro Agriculture 2021 there are some calculations on certainty in Accounts statistics for agriculture 2022 pp. 102-103. (In Danish).

5.3 Non-sampling error

There are some uncertainty in connection to the selection of farms as participation is voluntary to the farmer and only farms using calendar year as financial can be chosen. Loss of selected farms is countered by selecting a larger sample that needed in the end. Previous selections area analyzed concerning loss which for full time farms was 9-13 pct. in 2020. Farm accounting data are supplemented by administrative data, especially on subsidies. For calculation of results each farm is assigned with a calibrated weight after size, type and region. In the design of weights some goal variables are used with the intention of achieving better estimates.

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 information from the agricultural accounts are collected in a very systematic way and tested thoroughly. Together with a large sample on about 20 per cent of the full time farms in Denmark a high quality of the statistic is secured.

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

The last two years are preliminary. Revision can occur if improved methods of cost allocation are developed.

6 Timeliness and punctuality

This statistic is normally published with preliminary data within 12 month after closure of the relevant accounting year. Data are final app. three years after closure of the accounting year.

6.1 Timeliness and time lag - final results

The economics of agricultural activities will be published once a year. The objective is that a preliminary statistics must be published within 12 months after the end of a calendar year, or within 3 months after the accounts statistics for agriculture have been published. Data are final three years after the reference years.

6.2 Punctuality

The statistics are usually published at the announced date.

7 Comparability

Data from 2021 onwards are comparable. There are no EU based systematic similar statistics for other countries.

7.1 Comparability - geographical

Some countries have similar statistics, but they are not collected systematically by fx Eurostat or DG Agri.

7.2 Comparability over time

The statistics for 2021 onwards are comparable.

7.3 Coherence - cross domain

There are not published similar statistics in Denmark.

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7.4 Coherence - internal

Data are based on balanced agricultural accounts.

8 Accessibility and clarity

Statbank Denmark (http://www.Statbank.dk) tables PGKONV1. PGKONV2, PGOEKO1 and PGOEKO2.

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

Not available.

8.5 Publications

Not relevant for this statistics.

8.6 On-line database

- [Agricultural activities with conventional crops(http://www.Statbank.dk/PGKONV1)
- Agricultural activities with conventional animals
- [Agricultural activities with organic crops(http://www.Statbank.dk/PGKONV1)
- Agricultural activities with organic animals

8.7 Micro-data access

The basic material are found in the statistical databases. Extract from the databases form statistics file on an individual level. From the statistics file generated tables for publications. Researchers can request access to data for concrete projects. Contact the Research Service and sign a confidentiality statement to access anonymized individual data.

8.8 Other

Not relevant for this statistic.

8.9 Confidentiality - policy

Policy on data confidentiality in Statistics Denmark are adopted.

8.10 Confidentiality - data treatment

Discretion is always used for activities or groupings with less than 5 holdings.

8.11 Documentation on methodology

A brief description of the methodology is to be found in the annual 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. The contact person is Henrik Bolding Pedersen, tel.: + 45 2057 8887, and e-mail: HPE@dst.dk.