

# Farm structure (ef)

National Reference Metadata in ESS Standard for Quality Reports  
Structure (ESQRS)

Compiling agency: Please provide the name of the organisation of the  
contact points for the data or metadata. Danmarks Statistik

Time Dimension: 2013-A0

Data Provider: DK1

Data Flow: FSS\_ESQRS\_A:1.0

## Eurostat metadata

### Reference metadata

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For any question on data and metadata, please contact: [EUROPEAN STATISTICAL DATA SUPPORT](#)

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## 1. Contact

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<b>1.1. Contact organisation</b>	<p><i>Please provide the name of the organisation of the contact points for the data or metadata.</i></p> <p>Danmarks Statistik</p>
<b>1.2. Contact organisation unit</b>	<p><i>Please specify an addressable subdivision of an organisation.</i></p> <p>Division of agricultural statistics</p>
<b>1.5. Contact mail address</b>	<p><i>Please specify the area of technical responsibility of the contact, such as "methodology", "database management" or "dissemination".</i></p> <p>Sejrøgade 11 2100 København Ø Danmark</p>

## 2. Introduction

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## 2.a. Brief description of the national history of Farm Structure Surveys (FSS)

*This item is of special interest for countries with less experience in FSS surveys. In these cases it is useful to include a brief description about the related statistical activities e.g. establishment/update of the statistical register, etc. Please keep the description **brief** (expected length of maximum 250 words)*

The farm structure survey (FSS) survey goes back to 1977 where the separate surveys for agriculture and horticulture were integrated in one survey.

Since then the survey has taken place every year as a questionnaire based survey where the farmer has received a questionnaire in a letter with an obligation to complete it.

Total censuses held in: 1977-83, 1985, 1987, 1989, 1999 and 2010.

Sample surveys held in: 1984, 1986, 1988, 1990-98, 2000-09 and 2011-14.

Generally the samples have been quite big, 20-50 per cent of all farms.

The surveys have always had a threshold so that small holdings are excluded:

1977-82: FSS included farms with at least 0.5 hectares or at least a production with a value corresponding to 0.5 hectares with barley.

1983-1994: FSS included farms with at least 5.0 hectares or at least at standard gross margin of 3.000 euros at 1985 prices.

1995-2009: FSS included farms with at least 5.0 hectares or at least a standard gross margin of 4.000 euros at 1990 or 1995 prices.

From 2010 Eurostat introduced a harmonization of the thresholds in FSS. Hereafter FSS includes farms which fulfil just one of the following criteria:

- 1) Agricultural area of at least 5.0 hectares
- 2) Standard output of at least 7.500 euros
- 3) Fruits, berries and nursery area of at least 0.5 hectares
- 4) Vegetables and strawberries of at least 0.5 hectares
- 5) Greenhouse and mushrooms of at least 1.000 m<sup>2</sup>
- 6) At least 10 cattle
- 7) At least 50 pigs
- 8) At least 10 sows
- 9) At least 20 sheep
- 10) At least 20 goats
- 11) At least 1.000 poultries
- 12) At least 40 fur animals

## 2.b. Brief description of the national legislation of FSS

*Please **briefly** specify the following provisions from the national legislation:*

- the reference of the national legal base of the FSS survey (Act, Government Decree, etc.)	There is no specific law on farm structure statistics. The Danish FSS is held with reference to Law on Statistics Denmark.
- the scope and the coverage of the survey	All agricultural farms located on the Danish territory. Greenland and Faroe Islands are not included.
- the frequency and the reference period of the survey	The Danish FSS is held yearly. In 2013 the reference day was May 13.
- the responsibility for the survey	Statistics Denmark is responsible for the Danish FSS.
- the administrative and financial provisions	All aspects of the Danish FSS, including financial and administrative matters, are the responsibility of Statistics Denmark. According to Regulation 1166/2008 Denmark is entitled a community contribution of 150.000 euro.
- the obligations of the respondents with	Law on Statistics Denmark puts an obligation on all business units, including agricultural farms, to complete questionnaires. Likewise

respect to the survey	all government institutions must send their administrative data to Statistics Denmark on request.
- the identification, protection and obligations of survey enumerators	The Danish FSS is held as a postal survey. It means that there are no survey enumerators. Colleagues working on FSS have to treat individual farm information strictly confidential.
- the right of access to administrative data	Statistics Denmark has a right to receive all kinds of administrative registers from other government institutions according to Law on Statistics Denmark.
- confidentiality provisions	Individual information from surveys is treated strictly confidential. This is also the case for FSS. In practice it means that only a few colleagues at Statistics Denmark have the right to access the FSS survey registers.

### 3. Quality management - assessment

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The quality of the statistics could be assumed to be good for the following reasons:

- The sample is rather big, between 25-35 percent.
- The sample is stratified by size, region and type of farming. It means that for example all big pig farms are included in the sample.
- All answers are subject to a thorough validation and control.
- The non-response is small, about 5 percent. An even smaller non-response for big farms is achieved, for instance by contacting farmers by telephone.

The survey is of course subject to sample errors. The sample errors are biggest for livestock and crops which only few farms have, e.g. sheep and straw berries, and smaller for frequent occurring livestock like cattle and winter wheat.

Here are some examples on sample errors from the farm structure survey 2013:

- Total agricultural area, hectares: 0,6 %
- Winter wheat, hectares: 1,1 %
- Spring wheat, hectares: 5,8 %
- Straw berries, hectares: 15,9 %
- Cattle, number of animals: 0,9 %
- Pig, number of animals: 1,3 %
- Sheep, number of animals: 10,4 %
- Minks, number of animals: 3,2 %

The coverage is expected to be good due to frequent updates with sources like IACS and the livestock register.

### 4. Relevance

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#### 4.1. Relevance - User Needs

##### 4.1.a Overview of the main groups of national characteristics

*Please indicate the main groups of national characteristics which are surveyed.  
Please include references to characteristics surveyed only for national purposes and mention for which purposes and where the request came from (i.e. which are the users).*

In Denmark we conducted a total census of all agricultural farms in 2010 and a sample survey in 2011 covering all SAPM characteristics. The 2011 survey also had questions on livestock and crops but no other traditional FSS questions. The FSS in 2013 was almost identical with the 2010 survey except for questions on machinery.

There are no sections on the two questionnaires with questions collected exclusively for national reasons but in certain cases some details exist not required by the regulation. In the following certain examples are given:

Crops: The Danish survey collects information on winter crops and spring crops for wheat, barley and rape.

Pigs: There are 10 categories of pigs where the regulation demands 3 categories only.

Cattle: There are 12 categories of cattle where the regulation only requires 7.

Poultry: There 8 categories on the Danish questionnaire where the regulation requires only 3.

Fur animals: The Danish questionnaire has from 2010 onwards had a question on fur animals where the regulation only requires a yes/no question on "other animals".

Other animals: For sheep, goats, horses, rabbits and bee hives the Danish questionnaire is identical with the regulation requirements.

The users are in particular EU, the ministries, farmer's organisations, but also students and interested people in general. EU uses the statistics as a tool in the planning of the common agricultural policy.

The farm structure survey is discussed at meetings in user board on agricultural statistics. The members may put forward suggestions to new questions on the questionnaire as well new statistical tables for publication. This led for instance to that we in FSS 2012 had some simple questions on farms with farm shops.

#### 4.1.b Reference periods/dates of the main groups of national characteristics

*Please indicate the reference periods/dates of the main groups of national characteristics. (new) Please provide justifications if the reference periods/dates from the Regulation 1166/2008 are not respected.*

The survey day of the FSS 2013 was Monday May 13. This survey date concerns all characteristics which meaningfully can be assigned to one specific day. This is first and foremost the case for livestock. For some other characteristics other principles apply:

- Crops are collected from IACS where farmers should apply for crop subsidies no later than April 25 2013. The information on crops concerns the season 2012/2013 from the point of time where winter crops are sown – normally September or October 2012 - till the crops are harvested – normally August 2013. Evidently the time for sowing and the time for harvesting might differ depending on weather conditions. For green house crops and farms not applying for subsidies the survey day applies.
- Cattle are collected from the livestock register dated June 1 2013, pretty close to May 13.
- Labour force characteristics, including other gainful activities concern a period of one year prior to the survey date rather than the survey day itself.
- Rural development characteristics concern the calendar year 2011-2013. According to art 8.(d) this reference period should be 3 years.
- Education in the recent year concerns necessarily a period of one year prior to the survey day.
- Irrigated area in the recent year concerns necessarily a period of one year prior to the survey day.

#### 4.2. Relevance - User Satisfaction

There is no survey on user satisfaction. The main impression, however, is that most users are satisfied with the statistics but often they have wishes about more detailed regional figures with figures for municipalities and also more agro environmental statistics.

#### 4.3. Completeness

##### Characteristics not collected (non-significant, non-existent or (new) possibly not collected for other reasons)

*For non-significant or non-existent characteristics, you may repeat the information sent to Eurostat according to art. 7 par. 3 of Regulation 1166/2008. You can also attach the relevant file to this section using the "Add file" button below.*

*The overall answer to this item should provide information on:*

*-the list of characteristics non-significant and the list of characteristics non-existent from the EU list of characteristics [\[1\]](#);*

*-the reasons i.e. the prevalence or physical thresholds;*

*-the source(s) of information used (for the prevalence or physical thresholds);*

*- (new) how are non-significant or non-existent characteristics marked in the dataset transmitted to Eurostat.*

*(new) In addition, please specify whether non-significant characteristics are reported under the headings of other characteristics (as in the case of some countries). If yes, please specify which those other characteristics are and please indicate if the Standard Output of those other characteristics is recalculated considering the inclusion of the non-significant characteristics.*

The attached file "**List of Danish NE and NS characteristics FSS 2013**" shows the characteristics, that are not collected but are considered as non-significant or non-existing.

It should be noticed that for two crops “B\_4\_1\_3 Nuts” and B\_1\_6\_99 ”Industrial plants not mentioned elsewhere” data have in fact have been collected even though these items were declared NS prior to the survey.

Also for the item G\_1\_6 data "natura 2000 payments" were found for few farms even though we had expected prior to the survey 2013 that no Danish farms received this subsidy.

[1] See Annex III of Regulation (EC) 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) 571/88.

## Annexes:

[Non-existent and non-significant characteristics - FSS 2013](#)

### 4.3.1. Data completeness - rate

[Not requested]

## 5. Accuracy and reliability

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### 5.1. Accuracy - overall

#### Main sources of error

Please provide a **brief** general assessment on the main sources of error (e.g. sampling errors, measurement errors etc.)

The most important source of errors is the sample error. It is rather small for the most important crops and animals at the national level but bigger for animals and crops of minor importance and for regional figures.

Together with normal routines of data validation the quality of the FSS statistics could be assumed to be rather good.

### 5.2. Sampling error

Section 5.2 should be completed **only** in case of sample surveys.

#### 5.2.a. Applicability of precision requirements (precision criteria)

The precision requirements stipulated in Annex IV "Precision Requirements" of the Regulation 1166/2008 are applicable only in some cases, depending on the actual value of characteristics. Thus, we are first interested to know the actual value of characteristics, in order to determine the applicability of precision requirements.

Please provide the actual values of the characteristics in a separate Excel file (template provided by Eurostat) and annex the completed file using the "Add file" button below. Here, we are interested in the point estimates (the weighted values), NOT in the relative standard errors (RSEs).

#### 5.2.b. Method used for estimation of relative standard errors (RSEs)

Please describe the method used for estimation of RSEs. You can annex a document with the description of method and formulae applied, using the "Add file" button.

The standard errors for the estimates are calculated using standard theory for finite population sampling. The estimation is model assisted and utilizes (in 2011) known marginal totals of farmland area and number of units. The actual calculations are done using CLAN software (courtesy of Statistics Sweden).

## Annexes:

[FSS 2013 RSE, Denmark](#)

[FSS results 2013, Denmark](#)

### 5.2.1. Sampling error - indicators

#### 5.2.1.a Relative standard errors (RSEs)

(new - the information request is not new, but only the template) Please provide the RSEs in a separate Excel file (template provided by Eurostat) and annex the completed file using the "Add file" button below. The Excel file

comprises tables related to the precision requirements stipulated in Annex IV "Precision Requirements" of the Regulation 1166/2008.

#### 5.2.1.b. (new) Reasons for possible cases where precision requirements are applicable and estimated RSEs are above the thresholds

The cases where precision requirements are applicable are identified with the information provided in section 5.2.a. For those cases, the requirement is that the estimated RSEs are below the thresholds stipulated in Annex IV "Precision Requirements" of the Regulation 1166/2008. However, in some of these cases, estimated RSEs might be above the thresholds. In the latter cases, please provide justifications.

Nothing to remark.

### 5.3. Non-sampling error

Section 5.3 should be completed only in case of a sample survey or a census.

Section 5.3 should **not** be completed when data are entirely taken from administrative sources. In this case, section 12.1.e.5 of the report provides the relevant information.

#### Assessment of possible bias

If comparison with another source or consistency study is made, please give a **brief** description of the source used and the differences observed which can be proof of bias.

(new) Please also consider here bias risks associated with non-response by assessing the distribution of non-response across holdings' categories.

When it comes to non sample errors a few things could be mentioned:

- Certain items are often reported as round figures, for instance 12.000 chickens.
- Farmers may forget to answer certain questions when it comes to for instance livestock of minor importance like sheep, goats and horses.
- Questions on work time for the farmer and his wife can be difficult to answer for part time farmers.

#### 5.3.1. Coverage error

##### 5.3.1.a Under-coverage errors

Under-coverage units are target population units that are not accessible via the frame. This mainly includes new units not included in the frame, either through real birth or demergers, and wrongly classified units. This generally leads to bias in the estimates. If possible, please provide an assessment on the extent of under-coverage.

The procedures for register updating applied prior to the survey and described in passage 12.1.a.3 are assumed to secure an almost perfect coverage. It is hardly likely that there could be any farm of importance:

- a) Not included in IACS as an applicant of farm subsidies.
- b) Not included in the livestock register with number of animals over the survey thresholds.
- c) Not included in the business register with an agricultural NACE code.

##### 5.3.1.b Over-coverage

Over-coverage units are units that do not belong to the target population. Please mention whether the data was corrected for over-coverage and if yes, please describe.

304 farms were included in the Danish sample with no other agricultural activities – they have no crops and no other animals than fur animals.

252 farms were small meaning that their crops and livestock are lower than the thresholds mentioned in passage 2. They have completed the questionnaire like all other farms but they are not a part of publication nor are they sent to Eurostat. Likewise no extrapolation is calculated for these survey units.

##### 5.3.1.c Misclassification errors

Misclassification refers to wrongly classified units (for example by geographical area or size) which belong to the target population. Please provide an assessment on the extent of misclassification errors and how they were addressed.

No such problem exists in the Danish FSS.

##### 5.3.1.d Contact errors

*They refer to units with incomplete or incorrect contact data. Please describe how possible errors were corrected.*

Farmers having completed the questionnaire may be contacted by phone to clarify questionable cases. Approximately 5 percent of the farmers are contacted again.

#### **5.3.1.e Multiple listings**

*Multiple listings are units which are present more than once in the frame. Please indicate the proportion of multiple listings in the frame which are present more than once in the frame and specify how the duplicates were eliminated.*

No such problem exists in the Danish FSS.

#### **5.3.1.f Other relevant information, if any**

##### **5.3.1.1. Over-coverage - rate**

*Please provide the value of the over-coverage rate.*

*The over-coverage rate is the proportion of units accessible via the frame which do not belong to the target population (e.g. holdings with ceased activities still included in the frame).*

The population prior to the farm structure survey 2013 was 42.145 farms which based on available information were active in agriculture in April 2013.

But when completing the farm structure survey the figure for the number of farms was 38.829.

Thus the over coverage could be estimated to  $42.145 - 38.829 = 3.316$  farms or 7,9 per cent.

##### **5.3.2. Measurement error**

#### **5.3.2.a Causes of measurement errors in the FSS survey**

*The causes are commonly categorised as:*

- *Survey instrument: the form, questionnaire or measuring device used for data collection may lead to the recording of wrong values;*
- *Respondent: respondents may, consciously or unconsciously, give erroneous data;*
- *Interviewer: interviewers may influence the answers given by respondents.*

*Please include here possible problems caused by difficult questions, unclear definitions, sensitive questions etc. which are likely to determine measurement errors.*

There is no certain information on measurement errors regarding the farm structure survey.

However, it is possible to compare areas with crops from the farm structure survey with crops which the farms have registered when applying for agricultural subsidies. Information on crops is collected in a register called Integrated Agricultural control system (IACS).

Practically all Danish farmers apply for subsidies so IACS could be seen as a statistical total census whereas the farm structure survey is a sample survey. The farm structure survey includes 35 different crops, and these crops are also included in IACS. The absolute deviations between areas of the farm structure survey and IACS amount to in average 1.1 per cent of the IACS areas.

It should be noticed that FSS results are made based on a sample and therefore the figure for instance hectares with barley cannot be expected to be identical for FSS and IACS.

Such a study cannot be made for other parts of the farm structure survey.

#### **5.3.2.b If available, failure rates during data editing. Please mention if the data was corrected.**

N/A

#### **5.3.2.c If available, assessments based on comparisons with external data, re-interviews, etc.**

N/A

##### **5.3.3. Non response error**

#### **5.3.3.a (new) Unit non-response: reasons and treatment**

*Please specify the reasons for unit non-response and how the unit non-response was accounted for. Unit non-response*

can be accounted for by e.g. re-weighting, imputation.

The farm structure survey 2013 had a non-response of about 700 farms or approximately 5 percent of the sample. A non-response farm is in principle treated as if it never had been selected whereby the extrapolation should be increased in the concerned stratum.

The extrapolation has certain targets which should be obtained based on IACS, pig surveys and information from the fur animals farmer's organisation.

No analysis of non-response farms has been made.

The reason for non-response is rather time consuming to contact all farmers over and over again until all or at least almost all farmers have completed the questionnaire. Unlike previous surveys Statistics Denmark has no longer the necessary resources and thus we need to accept a certain amount of non-response.

#### **5.3.3.b Item non-response: reasons and treatment**

*Please mention any characteristic(s) having higher item non-response rate together with the reasons of the item non-response. This information is important and will be useful for the organisation of future surveys.*

*Please also specify how the item non-response was accounted for. Item non-response can be accounted for by e.g. re-weighting, imputation.*

In 2011 all in all 7.552 or a bit more than 50 per cent did not respond to at least one SAPM question but completed the questionnaire otherwise. The missing information was imputed by means of imputation.

No imputation work was done like this in the Danish FSS 2013. It might happen that a farmer does not complete the questionnaire in all details. Most often this is rather harmless:

- - A farmer does not answer the section on irrigation but he lives in a region where almost no farmer irrigates so obviously the answer is simply "no irrigation".
- - A farmer does not answer the section on greenhouses. But since he does not use to have greenhouse crops and since most farmers do not have greenhouse crops the answer is obviously no.
- - Also incomplete labour force information is often rather easy to correct by means of this manual imputation. For instance it is quite obvious that the holder of a big farm works full time and cannot have a work outside the farm. Likewise a young holder of a small farm most likely has the lowest work time and a work outside the farm.

Some cases are more serious:

- A farmer known to have pigs does not indicate number of pigs.
- A farmer known to have poultries forgets to answer the section on poultries.
- A farmer known to have greenhouses forgets to indicate his greenhouse crops.
- When it comes to pigs we can often take the figures from the closest pig survey. But otherwise it is necessary to call the farmer

It is not possible to identify any specific reason for item non-response other than normal carelessness.

#### **5.3.3.1. Unit non-response - rate**

*Please provide the ratio of the number of non-responding holdings with no information or not usable information (item 5.1, table in section 12.3.d) to the total number of in-scope (eligible) units (item 5, table in section 12.3.d).*

The unit non response is about 5,0 percent in FSS 2013.

#### **5.3.3.2. Item non-response - rate**

*Please provide the ratio of the in-scope (eligible) units which have not responded to a particular item (characteristic) to the in-scope (eligible) units that are required to respond to that particular item (characteristic). Please provide this rate for characteristics with high item non-response.*

We have no exact figures but approximately 10 per cent of all questionnaires are subject to manual imputation (see and 5.3.3.b) and 5 per cent of the farmers are contacted on the phone.

#### **5.3.4. Processing error**



**5.3.4.a Assessment of processing errors affecting individual observations**

*Please give a quantitative or qualitative assessment of processing errors.*

There is no certain information on to what extent processing errors are caused by the different types of data collection. We do not bookkeep errors found and corrections made so when a survey is finalised we cannot know if one specific farm was perfectly in order right from the beginning or if it during the survey work was subject to one or more corrections.

However, some qualitative assessments could be made:

1) About 2/3 of all farmers complete the questionnaire online and here chances of a mistake free completion are good since the farmers have to answer all questions. For instance he has to answer yes/no to whether he has sheep or not, and if he answers yes he has to indicate at least one sheep. The same rule applies to the other categories of livestock. Likewise he has to report his work time on the farm and also his wife's work time (or answer that he has no wife or that his wife does not take part in the farm work). It means all in all that the completion of the questionnaire at least is consistent from a logical point of view but of course there is no guarantee that farmers could not by mistake write for instance 54 sheep instead of 45 sheep.

The remaining 1/3 of the farms completes the questionnaire in other ways:

2) Some might call by phone asking for help to complete the questionnaire and we then almost always fill in the questionnaire immediately by interviewing the farmer. Here chances of a mistake free completion also are good since the interviewer knows the questionnaire and can secure that no questions are forgotten.

3) The remaining farms have asked for a paper version of the questionnaire to fill in the traditional way. Here risks of forgetting answering some questions evidently exist. Risks of scanning mistakes also exist.

We have no certain information on the distribution of farms between group 2 or 3). A qualified guess is that 20 per cent belong to 2) and 80 per cent to 3).

**5.3.4.b Completion/correction methods applied**

*These can consist of follow-up interviews, imputation, re-weighting, use of other data sources etc. Please describe.*

Since the questionnaire was almost identical to the questionnaire in 2010 as well as previous surveys in 2003, 2005 and 2007 we did not face any major problems, like for instance a huge number of farmers who misunderstood one or more questions. So only well-known measures were taken:

- Recontact to approximately 5 per cent of the farmers by means of telephone calls.
- Manual imputation of about 10 percent of the questionnaires.
- The non-response was about 5 percent against less than 1 per cent for previous sample surveys in 2007, 2005 and 2003. But whether non response is small or big the method is the same, namely to increase the extrapolation for strata where non response occurs.

**5.3.4.c Imputation methods**

*Please specify what kind of imputation methods were used and for which items (characteristics).*

Manual imputation is made for approximately 10 per cent of the farms.

**5.3.4.d Tools used and people/organisations authorised to make corrections**

All colleagues who work on FSS have an authority to correct survey information, for instance after having been in telephone contact with a farmer - all in all 5 colleagues.

**5.3.4.1. Imputation - rate**

*Please provide the ratio of the number of replaced values to the total number of values for a given characteristic, for each main characteristic where this method was applied.*

10 percent of the farms have been subject to a certain degree of manual imputation.

**5.3.4.2. Common units - proportion**

[Not requested]

**5.3.5. Model assumption error**

In case of models used for estimation, please provide an estimation of related errors.

No model estimation is used in the Danish FSS.

**5.3.6. Data revision**

N/A

**5.3.6.1. Data revision - policy****Brief description of the revision policy**

Not relevant for FSS 2013 since there is no provisional version of the survey. If major mistakes are found after first publication they will of course be corrected and the correction will be announced on our homepage. No such thing happened to the Danish FSS 2013.

Statistics Denmark has no special revision policy and practice differs from statistics to statistics.

**5.3.6.2. Data revision - practice****Data revision practice**

*Please describe the practice, provide the main reasons for revisions and the extent to which the revisions improved accuracy.*

*Please provide the average number of revisions (planned and unplanned) for main characteristics.*

There was only one publication of FSS 2013 and thereby no revisions.

**5.3.6.3. Data revision - average size**

[Not requested]

**5.3.7. Seasonal adjustment**

[Not requested]

**6. Timeliness and punctuality**[Top](#)**6.1. Timeliness**

The reference day of the Danish FSS 2013 was May 13.

The Danish FSS was published May 21 2014 in a news letter. The publication was as scheduled.

**6.1.1. Time lag - first result**

*Please indicate the number of months from the last day of the reference period to the day of publication of first results.*

There is no provisional publication.

**6.1.2. Time lag - final result**

*Please indicate the number of months from the last day of the reference period to the day of publication of complete and final results.*

The survey was published 12 months after the reference day.

**6.2. Punctuality**

See below

**6.2.1. Punctuality - delivery and publication**

*Please indicate the number of days between the delivery/ release date of data and the target date on which they were scheduled for delivery/ release.*

The Danish FSS 2013 was published May 21 2014, a little bit more than one year after the reference day May 13 2013. This publication was as scheduled.

**7. Accessibility and clarity**[Top](#)

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### 7.1. Dissemination format - News release

[Nyt fra Danmarks Statistik](<http://www.dst.dk/pukora/epub/Nyt/2014/NR277.pdf>)

This is a newsletter published in Danish. The main story is that there have become fewer young farmers in Denmark in the recent years.

### 7.2. Dissemination format - Publications

#### Regular and ad-hoc publications in which data are made available to the public

#### 7.2.a The nature of publications

*Please specify the nature of publications. For example, the publications can contain preliminary results or final results, can be technical reports, etc.*

*Please also specify if the publications contain metadata.*

Our homepage <http://www.statistikbanken.dk> is the most important channel of publication. It is available free of charge for everybody having access to the Internet, and the user can choose between Danish and English text.

The principle is that as soon as a survey is ready for publication Statistics Denmark will publish a small newsletter of two pages with a few main results, and with focus on a particularly interesting development. The Danish FSS 2013 was published May 21 2014. At the same day detailed figures were also published on the Internet with for instance regional figures. The newsletter focused on young farmers.

Figures from FSS 2013 were also published in Statistical Yearbook 2014 (published April 2014) and Statistical Ten years Review 2014 (published August 2014).

#### 7.2.b Date of issuing (actual or planned)

The Danish FSS 2013 was published May 21 2014. At the same day detailed figures were also published on the Internet with for instance regional figures.

Statistical Yearbook 2014 (published April 2014)

Statistical Ten years Review 2014 (published August 2014)

#### 7.2.c References for on-line publications.

Thematic publication <http://www.dst.dk/da/Statistik/Publikationer/VisPub.aspx?cid=20699>

This is a thematic publication on Danish agriculture written in Danish but with an English summary.

### 7.3. Dissemination format - online database

*Please provide information about on-line databases in which the disseminated data can be accessed.*

Our homepage <http://www.statistikbanken.dk> is the most important channel of publication.

Here are a few examples of the statistical tables on FSS:

- [Farms](<http://www.statistikbanken.dk/bdf11>)
- [Labour](<http://www.statistikbanken.dk/bdf307>)
- [Crops](<http://www.statistikbanken.dk/afg07>)
- [Livestock](<http://www.statistikbanken.dk/hdyr07>)

#### 7.3.1. Data tables - consultations

#### The number of consultations of on-line data tables for a given time period

*Please indicate on-line data tables with an indicative number of consultations.*

Not relevant for the farm structure survey.

### 7.4. Dissemination format - microdata access

The individual farm information is strictly confidential and is never disseminated.

### 7.5. Documentation on methodology

#### 7.5.a Available documentation on methodology on FSS national survey

*Please provide references.*

#### 7.5.b Main scientific references

Please provide references.

### 7.5.1. Metadata completeness - rate

Not relevant.

### 7.5.2. Metadata - consultations

Not relevant

## 7.6. Quality management - documentation

### Available documentation on quality

Please provide references.

The quality of the Danish FSS is described in our national system of quality reports with text in both Danish and English:

[Agricultural and horticultural survey](<http://www.dst.dk/en/Statistik/dokumentation/declarations/agricultural-and-horticultural-survey.aspx>)

### 7.7. Dissemination format - other

The Statistical Yearbook has a wide range of statistical tables from domains, also agriculture. The English version is only published online.

[Danish Statistical Yearbook(<http://www.dst.dk/en/Statistik/Publikationer/VisPub.aspx?cid=17959>)

## 8. Comparability

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### 8.1. Comparability - geographical

#### 8.1.a National vs. EU definition of a holding

Please indicate possible differences between the national definition and the EU definition of the holding [\[2\]](#). Please also indicate the reasons.

Denmark includes farms with fur animals – unlike most other EU countries. Denmark has about 600 farms with fur animals with no other agricultural activities, neither other livestock nor crops. Minks are of big economic importance in Denmark. About 9 % of the Danish agricultural output comes from minks. This activity is far more important than for example poultry, sheep and goats.

#### 8.1.b National survey coverage vs. coverage of the records sent to Eurostat

Please indicate possible differences between the population covered in the national survey and the population covered by the records sent to Eurostat. Please also specify the reasons.

The population covered in the national survey may be different from the population covered by the records which are sent to Eurostat, in case very low national thresholds are applied or no national thresholds are applied.

The individual farms sent to Eurostat is exactly the same as the farms used for the national publication.

#### 8.1.c National vs. EU definitions of characteristics

Please indicate the version of the Handbook on implementing the FSS definitions used for the organisation of the current FSS survey.

Please indicate possible differences between national and EU definitions of characteristics and classifications of characteristics, the differences, the reasons and the impact on the comparability with the EU definitions. This information is relevant for users.

Please also indicate the number of hours per year for a full-time employee, used to calculate the Annual Work Unit.

When designing the questionnaire we have used the handbook on definitions, rev. 10.

The Danish questionnaire on work time has these five categories:

Work time category	Text on Danish questionnaire	One person with this work time corresponds to:
Full time	At least 37 hours/week	1.000 AWU

¾- < 1 full time	27-36 hours/week	0,875 AWU
½ - < ¾ full time	19-26 hours/week	0,625 AWU
¼ < ½ full time	9-18 hours/week	0,375 AWU
< ¼ full time	1-8 hours/week	0.125 AWU

So hours per year play no role when calculating AWU but it could be assumed that a person working exactly on full time has  $7.4 * 225 = 1.665$  hours per year.

#### 8.1.d Common land

*The legal change of the utilised agricultural area concept, and also the fact that there are various options for the coverage of the common land make this an obligatory section in this report for all countries.*

##### 8.1.d.1 Current methodology for collecting information on the common land

*If common land does not exist in the country, please specify this.*

*If common land exists and you do not collect information on common land, please specify this and the reasons.*

*If you collect information on common land, please describe the methodology by referring to the below options.*

*Combinations of the options are possible; if you use more options, please briefly describe each one.*

*- common land is included in the land use data of the agricultural holdings making use of the common land.*

*- common land is included as special holdings i.e. the common land holdings. In addition to records with data representing agricultural holdings, records representing the common land holdings are created.*

*- common land is collected at regional level and included in regional records. In addition to records with data representing agricultural holdings, records representing the regional sum of the common land are created. According to discussion in a Working Group, this third option has been converted into the second option (common land holdings) allowing all common land to be formatted and included in the Eurofarm tables.*

*In addition, please specify:*

*- whether there was a set of specific questions in the FSS questionnaire on common land or a separate questionnaire.*

*In the case of a separate questionnaire, it should be attached to this report, section 12.3.e.*

*- (new) how was the common land treated in terms of tenure classification;*

*- (new) how can common land be identified in the data.*

No common land in Denmark.

##### 8.1.d.2 Possible problems encountered in relation to the collection of information on common land and possible solutions for future FSS surveys

*Please provide this information in case information on common land is collected.*

No common land in Denmark.

##### 8.1.d.3 Total area of common land surveyed in the reference year

*Please indicate the survey estimate in case information on common land is collected.*

No common land in Denmark.

##### 8.1.d.4 (new) Number of agricultural holdings making use of the common land or Number of (specially created) common land holdings in the reference year

*Please indicate this number in case information on common land is collected.*

No common land in Denmark.

#### 8.1.e. Location of the holding

##### 8.1.e.1 The origin of the coordinates

*Please specify from which source you have obtained the origin of the coordinates (the geographical reference of the holding). This is required in the Handbook (document 3.1. Methodology - Handbook on implementing the FSS and SAPM definitions - REV 10). For example: cadastre information system, IACS (Integrated Administrative Control System), CAPI (Computer Assisted Personal Interview) with digital maps, address register (address of the farm or of the farmer), LAU2 (village, town, municipality etc.) region of the farm.*

The geo codes are collected from the Danish business register where they exist as a part of the address information.

The address is the head quarter of the farm. It could be identical to the farmer's private address but this is not necessarily so.

No grouping of holdings has taken place. In rare cases two farms could in fact have the same address if for instance one man has the pig stable as his farm and another man cultivates the fields.

### 8.1.e.2 (new) The reference system

Eurostat asks to transmit the coordinates based on the reference system ETRS89 (European Terrestrial Reference system 1989) but has set up his system to allow coordinate transformation from different reference systems. Please specify the reference system used in countries to store data on location of the agricultural holdings. This information is required by the Handbook (document 3.1. Methodology - Handbook on implementing the FSS and SAPM definitions - REV 10).

ETRS89, 4258

### 8.1.e.3 (new) The rounding of the coordinates

Eurostat recommends the transmission of the exact coordinates (the data is handled respecting statistical confidentiality provisions).

If countries still round the coordinates to a grid system, Eurostat recommends the grid based on the INSPIRE data specification on Coordinate Reference System.

Please specify if you transmit the exact coordinates or if you round them. If in the last case, please briefly describe the rounding method and the level of the rounding. For example: LAU2, regions lower than LAU2, census enumeration areas, grids, grouping by 5 holdings (ranked by latitude and longitude).

The coordinates were sent to Eurostat unrounded both for FSS 2010 and 2013 to obtain the highest accuracy. In this way we also avoid absurd locations: In lakes, in the sea, in other NUTS3 regions and even in other countries.

### 8.1.e.4 (new) The criteria used to determine the NUTS3 region of the holding

Please indicate which criterion is used to determine the NUTS3 region of the holding. Criteria:

- the majority of the total area of the holding where the holding is located;
- the building (administrative, for livestock or other production);
- the most important parcel (in terms of production);
- the residence of the farmer (if it is not further than 5 km from the farm).

The location is the head quarter of the farm where the farm activity takes place. The information is contained in the Danish business register as a municipality code. From the municipality code the NUTS 3 region can be derived.

However, the preferred solution is to derive the municipality code from the property code belonging to the farm. It is because the business register information code could refer to the place where the farmer lives rather than where the farm activity takes place.

## 8.1.f Organic farming

### Possible differences between national standards and rules for certification of organic products and the ones set out in Council Regulation No.834/2007

Please mention possible differences. This information is requested by the handbook (document 3.1. Methodology - Handbook on implementing the FSS and SAPM definitions - REV 10).

The Danish legislation on organic farming is in perfect accordance with regulation 834/2007.

[\[2\]](#) See Article 2 of Regulation (EC) 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) 571/88

### 8.1.1. Asymmetry for mirror flow statistics - coefficient

Not relevant for the FSS.

## 8.2. Comparability - over time

**8.2.a Possible changes of the definition of the holding, the reasons and the impact** of the changes on the comparability with previous sample survey/census data

Please indicate the relevant case from the ones below:

- a. There have been no changes, in which case this should be reported.
- b. There have been some changes but not enough to warrant the designation of a break in series.
- c. There have been sufficient changes to warrant the designation of a break in series.
- In the second and third cases, please indicate the changes, the reasons and their impact on the comparability over time. Particularly in the third case, please indicate any information relevant for users.

Over time the definition of a farm is unchanged as a technical and economic unit producing agricultural products. However, see 8.2.b on the new thresholds in 2010 and the inclusion of farms with fur animals in the Danish FSS.

### **8.2.b (new) Possible changes in the coverage of holdings for which records are sent to Eurostat, the reasons and the impact on the comparability with previous sample survey/census data processed by Eurostat**

Please indicate the relevant case from the ones below:

- a. There have been no changes.
- b. There have been some changes but not enough to warrant the designation of a break in series.
- c. There have been sufficient changes to warrant the designation of a break in series.
- In the second and third cases, please indicate the changes, the reasons and their impact on the comparability over time. Particularly in the third case, please indicate which procedure Eurostat should apply to compare the data over years and any other information relevant for users.

In 2010 Statistics Denmark introduced the new thresholds of regulation 1166/2008. At the same time we included farms with fur animals in FSS. It means that the number of farms in 2010 is 1.200 higher than it otherwise would have been where 800 farms could be attributed to farms with fur animals and 400 to small farms (but now just big enough to be included). The impact on figures for crops and livestock is as good as negligible.

It means that Denmark finds itself in situation b): "There have been some changes but not enough to warrant the designation of a break in series".

Otherwise the users can find figures from 1982-2013 at a comparable level.

### **8.2.c Changes of definitions and/or reference time and/or measurements of characteristics, the reasons and the impact of the changes on the comparability with previous sample survey/census data**

Please specify the characteristics whose definitions underwent changes, the reasons and the impact on the comparability over time.

Please indicate the relevant case from the ones below:

- a. There have been some changes but not enough to warrant the designation of a break in series.
- b. There have been sufficient changes to warrant the designation of a break in series.
- Particularly in the second case, please indicate any information relevant for users.

No such changes have taken place.

### **8.2.d (new) Changes over time in the results as compared to previous sample survey/census, which may be attributed to sampling variability**

This item is applicable when at least one of the two surveys whose results are compared is carried out as a sample survey.

Please indicate any information relevant for users.

No such changes have taken place.

### **8.2.e Common Land**

#### **8.2.e.1 Possible change in the decision or in the methodology to collect common land, compared with previous sample survey/census data and reasons.**

Please specify possible changes and reasons.

In Denmark common land is assumed not to exist. All land is owned by somebody. In few cases an area of agricultural land could be owned by for instance a municipality and if so the person who takes care of the land is assumed to be the manager. Common land has never been covered by a farm structure survey in Denmark.

#### **8.2.e.2 Change of the total area of common land and of the number of agricultural holdings making use of the common land number of common land holdings compared with the previous sample survey/census data and possible reason(s)**

Please specify.

Not applicable

### 8.2.f Major trends on the main characteristics compared with the previous sample survey/census data

Please complete the following table. Comments must be given in case there is a change of more than 10% in the current FSS survey compared with the previous one for any numeric main characteristic.

This comparison concerns the population covered by the records sent to Eurostat.

Main characteristic	Current FSS survey	Previous FSS survey	Difference in %	Comments
Number of holdings	38.829	42.099	-7.8	
UAA (A_3_1), ha	2.619.338	2.646.864	-1.0	
Arable land, ha	2.397.225	2.419.285	-0.9	
Permanent grassland (B_3), ha	195.484	199.859	-2.2	
Permanent crops (B_4), ha	26.629	27.721	-3.9	
Wooded area (B_5_2), ha	175.748	212.117	-17.1	Wooded land for farms might differ quite a lot since a big forestry with agriculture may close down agricultural activities or fall below the threshold. Wooded land is not a part of the sample stratification in the Danish FSS so also sample errors might play a role.
Unutilised Agricultural area (B_5_1), ha	53.953	53.647	0.6	
Fallow land (B_1_12_1 + B_1_12_2), ha	26.239	34.740	-24.5	Since 2008 there has been no obligation to set land aside. Only voluntary



				set aside is still in operation.
LSU in LSU	4.133.389	4.919.403	-16,0	
Cattle (C_2), head	1.614.644	1.571.050	2.8	
Family Labour force - in persons	17.453	16.965	2.9	
Family Labour force - in AWU	7.932	7.080	12.0	The number of family workers in persons has increased just slightly in persons from 2010 to 2013 whereas family workers measured at AWU have increased much more. It reflects a development where farms become bigger and where many family workers now work full time.
Non family Labour force - in persons	26.677	23.244	14.7	As farms become bigger it is a natural phenomenon that more and more farms employ non family workers.
Non family Labour force - in AWU	23.729	20.814	14.0	One aspect might be that due to immigration from new EU countries it is easier for Danish farmers to find workers. However, that is not something we know for certain.

### 8.2.1. Length of comparable time series

There is a completely unbroken time series from 1982-2009 and again from 2010 onwards. As described above the break between 2009 and 2010 is not of big importance.

### 8.3. Comparability - domain

#### Comparisons with other data sources at micro/macro level

*Other data sources can be for example administrative data, crop production surveys, animal surveys, labour force surveys, National Accounts.*

*If you run comparisons, please give a brief description of the results of these comparisons and possible adjustment*

made to FSS data. If not, please indicate why not.

### 8.3.a Comparisons at micro level

No checks with other sources are made at micro level. The reason is that if such a source existed - highly comparable with certain FSS questions - we would delete these questions from the questionnaire as we would now have another source of data collection for these questions. That is what we do for crops (IACS) and cattle (livestock register).

### 8.3.b Comparisons at macro level

It is not possible to conduct a check with other sources. A real check requires that one or more independent sources exist which are highly comparable with FSS. This would be the case if we had had crops and cattle on the questionnaire in the traditional way. If so we could compare FSS with IACS and the livestock register. But as already described we have long time ago removed crops and cattle questions from the questionnaire and implemented IACS and the livestock register as sources for collecting figures for crops and cattle. It means that when comparing FSS with these two administrative registers it merely serves as a check to secure that categories are not confused – wheat has become barley and vice versa. We do in fact make such a check but evidently it says nothing about data reliability.

If categories in fact are *not* confused the FSS compared with IACS/the livestock register must be expected to be very close to each other but not necessarily identical for these reasons:

- 1) FSS is a sample survey and any result is subject to sample errors, also characteristics collected from an administrative register.
- 2) The thresholds used in FSS do not apply to IACS. It works in the direction of making IACS/livestock register results a little bit bigger than FSS results since IACS/livestock register include some small farms not covered by FSS.
- 3) It is perfectly possible for a farmer not to apply for subsidies but still be covered by FSS. However, for farms growing cereals and other normal agricultural crops it is extremely rare not to apply for subsidies.

The closest we come at a check is when comparing FSS with a recent pig survey:

	FSS 2013, May 13	Pig survey, July 2013	Difference, per cent
Pigs, total	12075.750	12.252.000	1,5
Piglets (C_4_1)	4.158.470	4.277.000	2,9
Sows for breeding (C_4_2)	1.139.016	1.188.000	4,3
Other pigs (C_4_99)	6.778.263	6.787.000	0,1

Both surveys are sample surveys and are thus subject to normal sample errors. The difference is not very big for pigs, total and extremely small for other pigs, mainly pigs for slaughtering. The differences are bigger for piglets and sows for breeding.

## 9. Coherence

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### 9.1. Coherence - cross domain

#### (new) Coherence with other data sources

*Please indicate whether the FSS statistics are reconcilable (i.e. can be combined) with those obtained through other data sources or statistical domains.*

The Danish FSS is comparable with IACS to a high degree but IACS includes all applicants for single payments, even very small farms. In 2013 IACS had 44.866 applicants for single payments. FSS had 38.829 farms.

Also the Danish FSS is comparable with the FADN statistics as far as the farm concept is the same. BUT FADN has a higher threshold, namely 10.0 hectares of agricultural land or a standard output of 15.000 euros and excludes about 7.300 farms from FSS.

#### 9.1.1 Coherence - sub annual and annual statistics

Not relevant for FSS.

#### 9.1.2. Coherence - National Accounts

Not relevant for FSS.

## 9.2. Coherence - internal

For each survey all the collected answers are stored in one register with all survey characteristics included in the survey. There is one and only one extrapolation factor per farm. For this reason no inconsistency can occur. This is also a standard required by Eurostat.

## 10. Cost and Burden

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### Co-ordination with other surveys: burden on respondents

*Please indicate if there is any co-ordination between surveys to avoid the situation that some farms have to answer multiple questionnaires with the same kind of questions.*

Farmers having taken part in the pig survey in April do not need to report pigs to the FSS only one month later. But they have to complete all other parts of the FSS questionnaire.

## 11. Confidentiality

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The confidentiality is required by law. This report should confirm these arrangements.

Please provide the requested information, taking into consideration that this report is a non-confidential document.

Every survey results in a final survey register for all farms which took part in the survey. Only authorised colleagues at Statistics Denmark have access to these registers as they contain confidential information.

The surveys are, however, delivered digitally to the National Danish Archive. Till now surveys for these years have been delivered: 1985 and 1989-2014. The surveys from 1982-84 and 1986-1988 have not been delivered to the National Danish Archive.

Also Eurostat receives the surveys according to EU regulations on farm structure statistics for agriculture. The data are individual but anonymous. Eurostat has an obligation to treat the information confidentially so only a few colleagues have authorization to access the data. Based on this arrangement Statistics Denmark has delivered the surveys to Eurostat for these years: 1989, 1993, 1995, 1997, 1999, 2003, 2005, 2007, 2010, 2011 and 2013.

### 11.1. Confidentiality - policy

#### Dissemination of micro-data to external users for research purposes

*Please mention if micro-data are also disseminated and if yes, the confidentiality provisions that are applied.*

Researchers can obtain access to the surveys but only as anonymous information. If a researcher publishes statistical tables based on the individual information it must take place in agreement with Statistics Denmark. It is an extremely rare case that a researcher requests micro data from FSS.

### 11.2. Confidentiality - data treatment

#### The procedures applied for ensuring confidentiality of the data during dissemination

*Procedures can include controlled rounding, cell suppression, aggregation of disclosive information, aggregation rules on aggregated confidential data, primary confidentiality with regard to single data values etc. Main reference: [Handbook on Statistical Disclosure Control](#) (2007).*

All data sets regarding FSS are stored at a special library on Statistics Denmark's computer network as SAS data sets going back to 1982. Only authorised colleagues can access the individual farm information. The surveys are delivered to the Danish National Archive, which keeps the information as strictly confidential for 80 years.

When designing statistical tables the aim is to secure that no table cells contain very few farms. There are no exact rules regarding "very few farms".

## 12. Statistical processing

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### Survey organisation and calendar

*Please provide **brief** information on:*

#### 12.a The steps of the survey organisation

**and the starting and ending time of each step.** *This information could help countries in the future planning of the activities. As guidelines, the steps can consist of the following. Please adapt to the national situation if needed.*

1. *definition of survey objective and requirements:*
  - 1.1. *formation of workgroups for survey organisation;*
  - 1.2. *consultation of users;*
  - 1.3. *set-up objectives, target population, statistical units, classifications, precision requirements etc.;*
  - 1.4. *survey promotion.*
2. *survey design:*
  - 2.1. *set-up organisation of the survey (e.g. detailed timetable, specification of resources, costs estimation);*
  - 2.2. *definition of the survey variables;*
  - 2.3. *design of the sampling frame and sampling procedures;*
  - 2.4. *design of data collection procedures (e.g. questionnaire design, selection of data collection modes etc.);*
  - 2.5. *design of data processing procedures (e.g. CATI/CAPI/CAWI input programmes etc.);*
  - 2.6. *pilot survey organisation and execution.*
3. *data collection:*
  - 3.1. *sampling frame construction and sample selection;*
  - 3.2. *recruitment of interviewers;*
  - 3.3. *training of interviewers;*
  - 3.4. *fieldwork;*
  - 3.5. *evaluation and assessment of fieldwork.*
4. *data processing and validation:*
  - 4.1. *data entry and data coding;*
  - 4.2. *data validation (at record level);*
  - 4.3. *data correction and imputation.*
5. *data compilation:*
  - 5.1. *weight calculation and estimation;*
  - 5.2. *calculation of derived variables;*
  - 5.3. *calculation of quality indicators (e.g. non-response rates, relative standard errors, coverage errors, bias etc.);*
  - 5.4. *aggregation and tabulation;*
  - 5.5. *validation of aggregated data.*
6. *data analysis*
7. *data dissemination*

#### Steps in the Danish FSS 2013

- The questionnaire: The work on designing the Danish questionnaire began in October 2012. Regarding the 2013 survey the work on this point was not so complicated since we more or less could copy the 2010 questionnaire. It was just necessary to add a section on machinery. The online version of the questionnaire was prepared by our division of data collection - based on the paper version of the questionnaire - and was ready by the end of April 2012.
  - Sample selection: The sample was selected by our methodological unit in April 2013.
  - Sending the questionnaires: beginning of May 2013.
  - Survey day: May 13 2013.
  - Reminders:
    - First reminder: Beginning of June 2013, about 8.500 farms
    - Second reminder: End of June 2013, about 5.000 farms
    - Third reminder: Middle of July 2013, about 3.000 farms
    - Fourth reminder: From beginning of August 2013, about 1.000 farms
- No farmers were reported to the police in connection with FSS 2013 so a certain non-response had to be tolerated.
- Validation of questionnaires: This work took place currently from May 2013.
  - Integration with administrative data: January 2014.
  - Calculation of extrapolation factors: May 2014.
  - Publication: May 21 2014, results were published in a small news letter and online with detailed results.
  - Data to Eurostat: September 2014, however certain patch files were created during the spring and summer 2015 to correct some figures for pigs and certain crops.

The work on FSS 2013 has been divided by three different units:

- Division of agricultural statistics: This division has the main responsibility for the survey and has performed these tasks:
  - Designing of the questionnaire.
  - Determining the sample size.
  - Validation work.
  - Contact with the farmers.
  - Receiving and treating administrative data
  - Register work
  - Contact with Eurostat, meetings in Luxembourg, e-mail correspondence.
  - Creation of the dataset to Eurostat.

**12.b The bodies involved and the split of responsibilities among bodies** with respect to the main steps of the survey process

- Publication of results.

- Division of data collection: This division is responsible for collecting answers from the farmers:

- Preparing the online questionnaire.
- Letter to the farmers.
- Sending questionnaires and reminders.
- Telephone reminder.

- Methodological unit:

Selection of the sample.  
Calculation of extrapolation factors.

All in all 22 colleagues at Statistics Denmark took part in the FSS work, however for some of them just very few hours. No bodies outside Statistics Denmark have been involved in the survey work but of course informal conversations with interested users take place currently.

**12.c Serious deviations (if any) from the established calendar and reasons.** *Please mention only serious deviations with significant consequences on the quality and the transmission time of data to Eurostat.*

Nothing to remark

## 12.1. Source data

### 12.1.a Target population

#### 12.1.a.1 The national definition of an agricultural holding

*Please mention if the national definition of the holding is as according to the EU definition [\[3\]](#) or not. If not, please mention the national definition of a holding.*

The Danish definition of a holding is in accordance with the definition in regulation 1166/2008. However, Denmark also includes farms with fur animals, unlike most other EU countries.

#### 12.1.a.2 The number of holdings in the population disregarding any possible thresholds applied (the entire number of holdings in the country), according to the EU definition of a holding or, if different from the EU definition of a holding, according to the national definition.

*Please indicate the number. If it is not possible to provide this information, please provide the reasons.*

Understood literally it would be extremely difficult to count the total number of “farms” in the sense of all units producing agricultural products even at a small scale. We have no knowledge of private families growing for instance fruits, berries or vegetables in their gardens or summer houses.

The closest we could come to “the total number of farms in Denmark” would be the number of single payment applicants, which was 44.866 in 2013.

#### 12.1.a.3 The national survey coverage; the thresholds applied in the national survey (if any) and the geographical coverage

*Please briefly describe the national target population which is the population for which national inferences are made.*

*Please consider possible thresholds applied in the national survey and please mention them.*

*Please mention the geographical coverage (including any geographical areas not covered).*

The Danish FSS has since 2010 covered all agricultural units on the Danish territory which fulfil at least one of the following criteria:

1. A utilised agricultural land of at least 5,0 hectares
2. A standard output of at least 7.500 euros
3. Fruits, berries and nursery area of at least 0,5 hectares
4. Vegetables and strawberries of at least 0,5 hectares
5. Greenhouse and mushrooms of at least 1.000 m<sup>2</sup>
6. At least 10 cattle
7. At least 50 pigs
8. At least 10 sows
9. At least 20 sheep
10. At least 20 goats
11. At least 1.000 poultries
12. At least 40 fur animals

The source is most often the most recent FSS for each farm (FSS 2012 or 2011 or 2010) but could also be information from IACS or the livestock register.

**12.1.a.4** (new) The number of holdings in the nationally covered population (see 12.1.a.3), according to the EU definition of a holding or, if different from the EU definition of a holding, according to the national definition. *Please indicate the number. These are holdings in the national survey coverage. If national thresholds are applied, the size of the national survey population is the number of holdings in the population by considering the thresholds applied in the national survey (see 12.1.a.3).*

The population of the Danish FSS 2013 consisted of 42.145 farms. These farms fulfilled at least one of the criteria mentioned in **12.1.a.3** according the most recent FSS or for some farms IACS or the livestock register.

**12.1.a.5** (new) **The survey coverage of the records sent to Eurostat**

*The survey coverage of the records sent to Eurostat can be different from the national survey coverage in case very low (or no) national thresholds are applied.*

*Please indicate if the coverage of the records sent to Eurostat is different the national survey coverage. If yes, please indicate the differences and how you selected the records sent to Eurostat.*

There is no difference between the farm records sent to Eurostat (13.414) and the farms being the base for the national publication.

**12.1.a.6** **The number of holdings in the population covered by the records transferred to Eurostat**, according to the EU definition of a holding and, if different from the EU definition of a holding, according to the national definition (*this number should be reported as item 1, in the table from section 12.3.d*).

13.414 corresponding to 38.829 farms when extrapolated.

**12.1.a.7** (new) Records sent to Eurostat on holdings with standard output equal to zero.

*These can be holdings with only fallow land and/or only kitchen gardens and/or only crops and animals for which standard output coefficients are not defined (crops and animals not valued). In the case of a few countries, a significant amount of records have been sent to Eurostat with standard output equal to zero. Please provide any information that could help Eurostat and users to better understand why standard output is equal to zero and why those holdings are included in the survey.*

The Danish FSS sample consists of 304 farms which have fur animals as their only agricultural activity. It means that they have no other animals and no crops, neither on free land nor in area green house. Extrapolated to a total level these farms amount to 543.

Fur animals play an important role in Danish agriculture and it is necessary to include farms with fur animals in the FSS.

There are 42 farms in the sample sent to Eurostat with no livestock and where the agricultural land consists of only fallow land and permanent grass land no longer used for production. This is not a very common case but perfectly possible.

These farms have applied for single payment in the 2013 season. In order to obtain this support they have an obligation to keep the land in good agricultural and environmental condition.

6 farms sent to Eurostat have no agricultural land and no livestock at all. It would normally mean closed down farms which should not be included in the sample sent to Eurostat. However, for these farms something special applies: They

are farms with poultries but they happen to have an empty animal house at the reference day. So instead of reporting the number of chickens (or whatever) on the reference day they have instead reported a production of poultries for slaughtering in the recent year thereby indicating that they are still active farms. We have chosen to include such farms in our own national publication and also send them to Eurostat. It should be noticed that these farms have complete and valid labour force information.

### **12.1.a.8 Proofs that the requirements stipulated in art. 3.2 and (new) 3.3 of the Regulation 1166/2008 are met in the data transmitted to Eurostat**

*Art. 3.2: However, Member States which use a survey threshold above one hectare shall fix this threshold at a level that excludes only the smallest agricultural holdings which together contribute 2% or less to the total utilised agricultural area excluding common land and 2% or less to the total number of livestock units.*

*Art. 3.3: In any case, all agricultural holdings reaching one of the physical thresholds specified in Annex II shall be covered.*

The Danish IACS has in 2013 44.866 of which 36.568 are big. They have an utilised agricultural area (UAA) of at least 5.0 hectares or an area with fruits, berries and vegetables of at least 0.5 hectares. The remaining 8.298 are small farms. So the small farms amount to about 18 percent of all the farms but they have only about 1.0 percent of the UAA among farms included in IACS. It should be noticed that the UAA in IACS and in FSS are close to identical, namely around 2.6 mio. hectares.

Some of these “small farms” could, however, be big by virtue of their livestock (e.g. at least 20 sheep) or green house area. But this information on livestock and green house area is not included in IACS.

It is not possible to make a similar study for livestock using the livestock register for two reasons:

1) The exercise mentioned above for IACS defines small farms as farms with both an area smaller than 5,0 hectares and an area with fruits, berries and vegetables smaller than 0.5 hectares. Here we suppose that these farms do not have livestock to any considerable content. This is normally true since many animals normally mean a big agricultural area. However, this rule does not work the other way round. It is quite normally to have some animals - but very few - in combination with a big area. So a farm with, say 5 sheep, cannot be classified as a small farm since it is extremely likely that it has more than 5,0 hectares of agricultural land.

It would in principle be possible to merge IACS and the livestock register whereby small farms could be identified as all farms below both the area and livestock thresholds stipulated in the regulation. Such an exercise is not as easy as it might sound and would involve certain match problems. Statistics Denmark has not yet found resources for such a study.

2) Even though the livestock register has information on number of animals this information is much more uncertain than the similar area information in IACS. For all other livestock than cattle the number of animals is a mix of stock information and production figures and the figures are also often up to one year old.

But it could be mentioned that Statistics Denmark in 2006 carried through a project with grants called “Danish TAPAS project on” small units”. The study showed that Danish farms below the threshold have about 0.6 per cent of the total standard gross margin of the whole Danish agriculture. The work can be found on CircaB, see page 10. It makes it extremely unlikely that farms below the Danish threshold should possess more than 2.0 percent of the livestock units.

### **12.1.b Source of data**

*Please mention the source of data for example exhaustive coverage of units in a survey (census), sample survey, use of administrative sources, combinations, etc.*

The Danish FSS 2013 covers all characteristics in one survey, both crops, livestock, labour force, other gainful activities and machinery. So there are no sub samples.

Information on crops, cattle, organic farming characteristics and rural development characteristics are collected from administrative register but connected to farms in the sample. It means that in the end the FSS survey register will contain complete information, also on crops, cattle etc. exactly as if all questions had been on the questionnaire in the traditional way.

### **12.1.c (Sampling) frame**

*Section 12.1.c refers to the frame used to identify holdings to be surveyed and therefore should be completed only in case of a sample survey or a census.*

*Section 12.1.c should **not** be completed when data are entirely taken from administrative sources. In this case, section*

**12.1.e of the report provides the relevant information.****12.1.c.1 Source of the frame**

*Please specify the source of the frame, for example a statistical register (farm register, business register etc.), an administrative source etc.*

The Danish sample frame consists of all agricultural units in the business register above the survey threshold mentioned in **12.1.a.3**. The number of farms in this population was 42.145 prior to FSS 2013.

Since the total FSS census in 2010 - where the number of farms was 42.099 – 3.424 have stopped their farm activities or have fallen below the threshold. 3.470 farms have since then been added to the population.

**12.1.c.2 Type of frame**

*Please specify whether it is a list frame or an area frame, whether you used a combination of multiple frames etc.*

The Danish population must be defined as a list frame consisting of all farms on the Danish territory above the threshold. These farms are the survey units.

**12.1.c.3 Time reference and updating process for the frame**

The Danish population of farms has since 2010 been a part of the general business register. Before 2010 Statistics Denmark had separate registers for agricultural and forestry units.

Any business unit could, irrespective of the NACE code, be active in agriculture or forestry or both. For this reason a variable in the Danish business register “Active in agriculture” has been created. It can assume four different values:

0= Not active in agriculture or forestry

1=Active in agriculture, but not forestry

2=Active in forestry, but not in agriculture

3= Active in both agriculture and forestry

All units with value 1 or 3 are furthermore marked as small or big where big means above the thresholds mentioned in **12.1.a.3**, big enough to be included in an agricultural survey.

The register is currently updated with information from IACS and the livestock register where these routines are established:

- Farms in IACS and the livestock register should be updated with the active value 1 or 3 in the business register where this is not already the case.

- Big farms in IACS – at least 5.0 hectares of agricultural land or at least 0.5 hectares with fruit, berries or vegetables – should be updated as big farms in the business register if they have status as small farms.

Routines which could delete units from the list of active farms are not developed successfully yet. As it is now farms are mainly deleted in connection with agricultural surveys if a farmer when receiving the questionnaire tells that he has stopped all farm activities.

Small farms below the threshold are still in the business register but marked as small so that they cannot be selected to a survey until information from either IACS or the livestock register indicates that they should be updated as big farms.

**12.1.d Sampling design****Section 12.1.d should be completed only in case of a sample survey.**

*Please describe the sampling design according to the following structure. This structure aims to increase the clarity and comparability of information between countries.*

**12.1.d.1 the name of the sampling design and whether it is a probability design.**

*A probability sampling design ensures known probabilities for units selected. In practice, non-response generally makes samples depart from the probability ones. However, the point here is to report on whether or not the gross sample (net sample plus non-respondents) has been selected in a probability way.*

The Danish FSS sample is a stratified sample which aims at minimising the sample error for selected variables. The sample of 15.000 farms is distributed optimally by strata. Farms are selected randomly within each stratum.

**12.1.d.2 (new) the number of sampling stages.**

*If the survey sample is selected from another sample (e.g. master sample) please consider this stage. If you use sub-sampling for some of the characteristics, please distinguish the cases in your answer.*

There are no sub samples in the Danish FSS.



**12.1.d.3 (new) the sampling unit at each stage**

*For example, sampling units can be holdings in a single-stage design or municipalities/villages as primary sampling units and holdings as secondary sampling units in a two-stage design etc.*

There is only one stage in the selection of the Danish FSS sample.

**12.1.d.4 the stratification variables and the sampling stage where they are applied**

*For example, in a single-stage design, holdings can be stratified by region and size.*

The stratification has three dimensions:

## 1) Region

Denmark has five different NUTS 2 regions and these regions are a part of the FSS sample stratification:

Region code	Name of the region	Number of farms in the sample
81	Region Nordjylland	2800
82	Region Midtjylland	4300
83	Region Syddanmark	3900
84	Region Hovedstaden	1500
85	Region Sjælland	2500

## 2) Typology

Typology code	Description	Number of farms in the sample
1500	Cereals, group 1.5	2169
1600	Other field crops, group 1.6	1639
2000	All horticultural farms, group 2.1, 2.2, 2.3, 3.6 and 3.8 and other farms not belonging to any of these groups but having at least 50 per cent of standard output from horticultural crops.	1207
4500	Dairy cows, group 4.5	2708
4650	Other cattle farms, group 4.6 and 4.7	941
4800	Other grazing animals, group 4.8	706
5100	Pig farms, group 5.1	2481
5200	Poultry farms, group 5.2	262
5400	Fur animals, group 5.4	784
6100	Mixed field crops, group 6.1	140
7000	Mixed livestock, group 5.3, 7.3 and 7.4	158
8300	Field crops and grazing livestock, group 8.3	841
8400	Other farms, group 8.4	518
9000	Farms where typology and standard output are unknown	446

The standard output and the typology of the farms are calculated based on information from the most recent FSS, 2010, 2011 or 2012. For farms in the population with no survey information two rules are applied to describe the farms:

A) If the farm is in IACS and not in the livestock register the standard output and the typology are calculated based on crop information from IACS. The farm is assumed not to have any livestock.

B) If the farm is:

1) not in IACS but in the livestock register

or

2) in both registers

or

3) in none of the registers (Could for instance be newly established horticultural farms) it belongs to typology group

9000, which of course is not any real typology but merely means “typology and standard output unknown”. All farms from this group are selected to the sample and no size groups are created.

3) Size of standard output. Different size groups are applied for different typology groups. The detailed information can be found in the annex “The Danish FSS sample 2013”.

#### **12.1.d.5 (new) the sampling method at each stage**

*The sampling method can be exhaustive selection, simple random sampling, systematic sampling with equal probabilities, systematic sampling with probabilities proportional to size, etc.*

The sample selections is random sampling in each stratum.

#### **12.1.d.6 the list and description of full coverage strata**

*Full coverage strata are strata with complete enumeration (all units are selected in the sample).*

The Danish sample has 921 different strata. In 298 of these strata all farms are selected. It is mainly big farms with more than 500.000 euros in standard output. However, horticultural farms (typology groups 2 and 3) and poultry farms (typology group 5.2) are also selected totally. Furthermore farms with no survey information and where typology and SO cannot be calculated from IACS information are also selected totally, see **12.1.d.4**.

The annex "The Danish sample FSS 2013" shows all strata with number of farms in population and in the sample.

#### **12.1.d.7 the overall sample size, how it was determined and any allocation method used**

*Allocation methods can be equal allocation, proportional allocation, Neyman allocation, optimal allocation considering different costs across strata etc.*

The sample is selected optimally to minimise the expected standard error of these selected variables:

- Agricultural area
- Number of cattle
- Number of pigs
- Number of fur animals
- Standard output

The size of the sample was determined from experience from the sample survey in 2011. An analysis made by our methodological unit showed that a sample of less than 15.000 farms – which was the size of the 2011 sample – could ensure a sufficient quality. However, to make up for an expected non response of maybe 10-15 percent it was decided to keep a sample size of 15.000 farms. The non-response became in fact much smaller, only about 5 percent.

#### **12.1.d.8 sampling across time**

*This item refers to whether a new sample is drawn in each occasion, or a part or the whole sample is retained over all/several occasions. The latter two cases should be justified.*

For each survey a new sample is selected independently of previous surveys.

#### **12.1.d.9 the software tool used in the sample selection**

SAS programs are used to select the sample.

#### **12.1.d.10 other relevant information, if any**

The population of farms is prepared by the division of agriculture but the sample selection is a task of the methodological unit of Statistics Denmark.

#### **12.1.e Use of administrative data sources**

##### **12.1.e.1 Name, legal base, time reference and (new) updating of the source**

*If more than one administrative data source is used, please provide this information for each of them.*

IACS 2013 is used as the source for collecting information on crops. IACS is created once a year. It's legal base is regulation 1307/2013

Information on cattle is collected from the livestock register. The legal base is Danish legislation. "lovbekendtgørelse nr. 873 af 29. juni 2013". Unlike IACS there is no final version of the livestock register regarding one year since the register is updated currently. Statistics Denmark receives a sample of the register four times a year and we use the June sample as the source for FSS.

Information on Rural development support is collected from the Ministry of Agriculture. This register is created once a year.

Information on organic farming is collected from the register of organic farms 2013 kept by the Ministry of Agriculture. This register is updated once a year.

The last two registers have no legal base as such but are used by the respective authorities when administrating the concerned arrangements.

### 12.1.e.2 Definition of the reporting unit (holding)

*If more than one administrative data source is used, please provide this information for each of them.*

The unit in IACS is an applicant for crop subsidies. The applicant must be either a person or a legal business unit. This unit is almost always identical with the farm unit. It means more precisely that the land which the farmer cultivates within one farm unit also is the land for which he applies for subsidies. Normally a match between the farm register and IACS can be obtained using the business number as the match key.

Since an applicant and a farm are not by definition identical with each other there are very few cases – less than 10 in Denmark – where a unit might own land in different parts of Denmark and thus cannot meet the requirements of the farm definition. If one farm does not correspond to one subsidy application this farm has to report the crops to Statistics Denmark when completing the FSS questionnaire.

In the livestock register the reporting unit is a physical place where the animals are located. This place is in most cases an agricultural property. This place has a unique number. One farm can have more than one number.

In the register on rural development the unit is a business unit with a business number. For small farms with no business number the personal code is the identifier.

The organic farm register has the same unit as IACS. If an organic farm does not apply for subsidies (a rare case) the unit is the business unit with a business number. An organic farm is obliged to have a business number.

### 12.1.e.3 The purpose(s) of the use of administrative sources

<b>Purpose</b>	<b>Administrative source</b> <i>Please specify the name of the administrative source(s) in the rows of this column. The row(s) where the name(s) of the source(s) is (are) specified indicate(s) the purpose(s) of the use of that (those) source(s).</i>
- to totally replace the survey, on all characteristics and on the whole survey population	No administrative registers can replace the whole survey with all characteristics.
- to replace the survey on some of the characteristics and on the whole survey population. <i>Please indicate these (groups of) characteristics, the common identifiers and the method(s) of integration (record linkage algorithm).</i>	The livestock register contains information on all Danish farms with cattle. It is strictly illegal to keep cattle without being registered. All farmers in the survey are asked if they have cattle and if yes they must specify one or more numbers in the livestock register in order to create a match. The register on rural development contains information on all farms receiving rural development support. The link to this register is created by match with the business code or the personal code. All organic farms have to be registered in the Ministry of Agriculture. The link to this register is created by match with the business number.
- to replace the survey on all characteristics and on a part of the survey population	No such register exists in Denmark.
	IACS is the source for collecting crops for farms having applied for single payment. On the questionnaire the farmers is asked if he has applied for subsidies this year, and if yes he also indicates his number in the

- to replace the survey on some of the characteristics and on a part of the survey population. <i>Please indicate these (groups of) characteristics, the common identifiers and the method(s) of integration (record linkage algorithm).</i>	subsidy system. It is a unique number which has no use anywhere else. This makes the match with IACS easy. In cases where a farmer forgets to indicate the number it is most often available from the survey the previous year or the number can be found in other ways, for instance using match criteria like business number or personal codes. If a farmer answers “no, I do not apply for subsidies” he has to give a full specification of all crops.
- to build/update the (sampling) frame (used for census or for sample survey)	IACS and the livestock register play a role in updating the farm population, see <b>12.1.c.3</b> .
- to pre-fill answers in the questionnaires which are then checked by farmers during the survey	No such use of administrative registers takes place in the Danish FSS.
- to impute item/unit non-response	No such use of administrative registers takes place in the Danish FSS.
- to validate the survey data (quality control). <i>Please indicate actions taken in case of large discrepancies</i>	No such use of administrative registers takes place in the Danish FSS.
- to calibrate of survey estimates. <i>Please indicate the calibration variables</i>	No such use of administrative registers takes place in the Danish FSS.
- other ( <i>please specify in the next column</i> )	Nothing to remark

#### 12.1.e.4 Difficulties of using administrative source(s) and measures taken

*For each administrative source used, please briefly describe any difficulties and the way those difficulties were addressed. Examples of difficulties:*

- *incoherence of concepts/definitions;*
- *incoherence of classification systems;*
- *different population coverage;*
- *problems creating the links between the units: the units in administrative sources do not correspond directly to the definition of required statistical units;*
- *problems creating the links between databases caused by e.g. the lack of common identifiers, obstacles related to IT issues etc.;*
- *impossibilities to establish cooperation with register owners;*
- *(too high) costs charged for the access by the register owners;*
- *problems related to data quality of the source;*
- *resistance to change caused by a general lack of trust in the quality of the source;*
- *timeliness and punctuality: the final validated data in the source may not be in time to meet statistical deadlines or may relate to a period which does not coincide with the statistical reference period;*
- *risks concerning the stability of the source to political changes etc.*

IACS contains a huge number of crops where the standard is changed slightly from year to year. The 2013 standard had 289 different crops; in particular there are many categories of fruits, berries, vegetables and seeds for sowing. The list is available in Danish only.

IACS reflects the crop year 2013, which means winter crops sown in the autumn 2012 and spring crops sown in the spring 2013. As such IACS is assumed to meet the FSS standard and thus no adjustment procedure is necessary.

The livestock register is delivered to Statistics Denmark with these 12 categories of cattle:

- Bull-calves and steer-calves, - under 1/2 year, ca\_1
- Bull-calves and steer-calves, 1/2-1 year, ca\_2
- Bulls and bullocks, 1-2 years, ca\_3
- Bulls and bullocks, 2 years and over, ca\_4
- Heifer-calves, under 1/2 year, ca\_5
- Heifer-calves, 1/2-1 year, ca\_6

- Heifers, 1-2 years, in calf, ca\_7
- Heifers, 1-2 years, not in calf, ca\_8
- Heifers, 2 years and over, in calf, ca\_9
- Heifers, 2 years and over, not in calf, ca\_10
- Dairy cows, ca\_11
- Cows kept for suckling, ca\_12

The FSS categories required by Eurostat can easily be created from these 12 categories:

FSS, Eurostat	Danish livestock register
C_2_1: Bovine under one year old - total	ca1_+ca2+ca_5+ca_6
C_2_2: Bovine under 2 years - males	ca_3
C_2_3: Bovine under 2 years - females	ca_7+ca_8
C_2_4: Bovine under 2 years and older - males	ca_4
C_2_5: Heifers, 2 years and older	ca_9_+ca_10
C_2_6: Dairy cows	ca_11
C_2_99: Other cows	ca_12

The farmers report their land use in April for the given crop year. If changes are made the farmers are obliged to report the changes. The crops might not have a survey day as such but does rather concern the season. In 2013 the farmers had a deadline of April 25 2013. It means that IACS 2013 had information on winter crops sown in the autumn 2012 and spring crops recently sown.

The procedure is that the farmer who applies for subsidies must write his number in IACS on the FSS questionnaire. Likewise a farmer with cattle must write his number in livestock register on the FSS questionnaire. These numbers are in the following called "register identification number". If all farmers have indicated the correct identification number the match is easy and painless.

False matches are eliminated by using the following procedures, and they apply to both IACS and the livestock register:

- Two or more farms have indicated on the FSS questionnaire the same register identification number.
- A farm has indicated a non-existing identification number, probably a simple writing mistake.
- A farmer has not indicated any number.
- A farm has indicated an existing identification number, but neither the business number nor the personal civil registration code are the same in respectively the statistical register and IACS/livestock register. The farmer has most likely made a simple writing mistake and has accidentally chosen an existing number of a farm not included in the survey.

All these mistakes must be eliminated before the match can take place.

It is strictly necessary to get precise agreements with the colleagues in the administrative bodies. Statistics Denmark has not recently had problems with actually getting data delivered. It is a good idea to involve both bosses and "people working on the floor" in the agreement. Otherwise the colleague in the administrative body who actually has to create the data to the statistical office might be tempted to believe that this task can wait.

#### 12.1.e.5 Quality assessment of the administrative sources

*Section 12.1.e.5 should **not** be completed when administrative sources are used only for building/updating the (sampling) frame of a census or a sample survey. In that case, other sections of the report (sections 5.3, 12.1.c, 12.3.d) provide relevant information.*

	<b>Administrative source and assessment of errors</b> <i>Please specify the name of the administrative source(s) in this column, along with information required for each row.</i>
<b>-coverage:</b>	
<b>- over-coverage</b> <i>If the source covers more units than it should,</i>	For all administrative registers the information is used

<p><i>please provide an assessment of the over-coverage rate and mention whether the out-of-scope units were excluded.</i></p>	<p>only for farms in the survey. So over coverage cannot play a role.</p>
<p><b>- under-coverage</b>  <i>If the source covers less units than it should, please provide an assessment of the extent of under-coverage (if possible) and mention if and how the missing information is derived.</i></p>	<p>IACS contains only information on farms applying for subsidies. But since farms not applying for subsidies are obliged to specify their crops on the statistical questionnaire this is not any problem.  Approximately 5 percent of the Danish farms in the FSS do not apply for single payment. Generally these farms are:  Horticultural farms with green house area but no crops on free land.  Livestock farms with no agricultural land.  Small farms which have not find it worthwhile to apply for a small area. But these small farms are normally not included in the Danish FSS.</p>
<p><b>- misclassification</b>  <i>Please mention whether the information allows for the requested classification of units and whether there are errors in classification variables.</i></p>	<p>No such problems are known to exist in the administrative registers used in the Danish FSS.</p>
<p><b>- multiple listings</b>  <i>Please provide an assessment on units which were present more than once in the source and specify how the duplicates were eliminated.</i></p>	<p>No such problems are known to exist in the administrative registers used in the Danish FSS.</p>
<p><b>- rate of unreported events</b>  <i>If data of the System for the Identification and Registration of Bovine Animals is used, please provide an assessment of the rate of unreported events. Unreported events refer to births, deaths or loss, sales or change of owners etc. of animals, which create under – and/or over-coverage errors for the estimates of animals.</i></p>	<p>As far as cattle are concerned the livestock register contains information on the single animal. Each single animal has a unique number. This number is information-bearing with information on birthday, gender and use. Use could for instance be milk production or meat production.  The livestock register is updated weekly or currently by the cattle farmer regarding acquisition (either new born calves or purchased animals) and disposal of animals (either died of natural causes or sold). This update is also with information on suppliers and buyers of cattle. Furthermore the deliverance of cattle for slaughtering is verified by the slaughter houses and the animals died of natural causes by the carcass disposal plants.  Due to this tight system of control and validation unreported events must be assumed to be negligible, maybe even non-existent.</p>
<p><b>- missing data</b> (analogue to item and unit non-response errors in a survey).<i>Please provide an assessment of missing data, specify for which characteristics and how it was accounted for (e.g. by imputation).</i></p>	<p>No such problems are known to exist in the administrative registers used in the Danish FSS.</p>
<p><b>- errors in register variables</b> (analogue to measurement errors in a survey) i.e. erroneous values for certain variables</p>	<p>No such problems are known to exist in the administrative registers used in the Danish FSS.</p>
<p><b>- processing errors.</b> <i>Please provide an assessment. You can mention here imputation methods used, if any.</i></p>	<p>No such problems are known to exist in the administrative registers used in the Danish FSS.</p>

- <b>coherence</b> (comparison to other available data) of the administrative data (ex-ante and/or ex-post)	Nothing to remark.
- <b>other drawbacks (if any)</b> of the use of data from the administrative source. <i>Please specify the drawbacks in the next column.</i>	Nothing to remark.

[3] See Article 2 of Regulation (EC) 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) 571/88

## Annexes:

[List of Danish characteristics FSS 2013 collected from other sources](#)

[The Danish FSS sample 2013](#)

### 12.2. Frequency of data collection

*(new) Please indicate the frequency of data collection.*

The farm structure survey is held yearly, also in years not required by regulation 1166/2008.

### 12.3. Data collection

#### 12.3.a Data collection modes

*Please specify the data collection mode(s) used. These can be for example:*

- *Telephone* The data collection is carried out through the telephone interviews, usually supported by the CATI technology.
- *Face-to-face* An interviewer visits selected holdings to directly communicate with them and get the required data.
- *Internet* The data collection is carried out by using questionnaires which can be completed through internet applications.
- *Self-completed paper questionnaires* The data is gathered through self-completed paper questionnaires which can be collected on a spot or sent to the survey organisation by mail.
- *Mixed-mode* Several modes for data collection are combined. The typical example is the survey where the telephone interviews are complemented with the face-to-face interviews for the respondents who were not reached by telephone.

The preferred method of completing the questionnaire is the online solution where a farmer uses his digital signature. However, farmers who have difficulties with the web questionnaire may request a paper questionnaire or simply give the information on phone.

#### 12.3.b Data entry modes

*Please specify the data entry mode(s) used. These can be, for example:*

- *Optical character recognition (OCR);*
- *Electronic data capture during personal interview;*
- *Entering the data online by the holder etc.*

FSS 2013

- Internet: 9.455
- By post or telephone interviews: 4.843

These 14.298 answers include both 13.414 farms sent to Eurostat, 252 farms below the threshold and 632 closed down farms.

Questionnaires not completed online can be scanned or registered manually, about 4.000 are scanned.

#### 12.3.c Measures taken to increase response rates

*Please specify, for example:*

- *call-back strategies, written / telephone reminders, contacting respondents who have only partly completed the questionnaires;*
- *giving priority to more important, for example large holdings;*
- *taking care that the mailing list is based on up to date information;*
- *training staff in handling difficult respondents;*
- *legal actions taken on non-response.*

In principle Statistics Denmark insists on getting answers from all farms being selected to the survey. However, due to lack of resources we had to accept a certain non-response in FSS 2013. This non response was about 700 hundred farms

or about 5 %.

Three reminders are sent to the farmers before they are contacted by phone, and only the biggest of the farms are contacted in this way.

It means that it is impossible to completely avoid non-response.

Farmers can find information on our web site regarding the survey. They can also find a phone number and an e-mail address if they wish to get into contact with Statistics Denmark.

Farmers having troubles with the online solution may request a paper questionnaire.

Farmers who wish to complete the questionnaire by phone are never denied this option but they must contact Statistics Denmark themselves. The reason is that the online solution is seen as the preferred solution. Other solutions should be reduced as much as possible.

### 12.3.d Monitoring of response and non-response

*The following table should be completed only in case of a sample survey or a census. It should **not** be completed when data are entirely taken from administrative sources. In the latter case, section 12.1.e.5 provides relevant information.*

*The following table aims to collect exact information of the number of holdings in a uniform way. This information allows, among other, calculating response rates according to the definition of response rates in the Eurostat (2009) [ESS Handbook for Quality Reports](#), page 49. These definitions of the response rates are presented in the handbook for sample surveys but, as stated in the same handbook, page 57, they are also applicable to censuses.*

*The following table refers to the number of holdings covered by the records sent to Eurostat. - If you send records on all surveyed holdings to Eurostat, then please include all surveyed holdings. - If you send records on a subset of surveyed holdings to Eurostat (that, according to Regulation 1166/2008, account for 98% of the utilised agricultural area and 98% of the livestock units), then please consider only the subset of holdings transferred to Eurostat, if possible. If this is not possible, please explain and then include information concerning all holdings surveyed in the country.*

*This table refers to the number of holdings according to the EU definition, and, if different from the EU definition [\[4\]](#), according to the national definition. Please specify the case.*

*Common land holdings (special holdings created to report common land), if any, should not be included in the number of the holdings of any category below. They should be reported in section 8.1.d.4*

1.	<b>Number of holdings in the population covered by the records sent to Eurostat</b> Please note that the survey coverage of the records sent to Eurostat can be different from the national survey coverage in case very low (or no) national thresholds are applied. In case of a census $1=3+4+5$	13.414, extrapolated 38.829
2.	<b>Number of holdings in the gross sample</b> The number of holdings selected from the sampling frame to be included in the sample. <i>This item should be completed <u>only</u> in case of a sample survey, in which case <math>2=3+4+5</math></i>	15.000
3.	<b>(new) Number of ineligible holdings</b> The number of surveyed holdings which result to be out-of-scope (the frame is not updated and the data collection reveals that some holdings e.g. fall below set thresholds during the reference period), which do not exist at the selected address, which have the activities ceased during the reference period etc.	884
3.1	<b>Number of holdings with ceased activities</b> This item is a subset of 3. $3.1 \geq 3.1.1 + 3.1.2$	632
3.1.1	<b>Number of holdings which definitively ceased i.e. the land is abandoned.</b> This item should be completed only if information is	-



	available.	
3.1.2	<b>Number of holdings with ceased activities following the change of manager</b> <i>This item should be completed only if information is available.</i>	-
4	<b>(new) Number of holdings with unknown eligibility status</b> <i>The number of surveyed holdings which could not be contacted (e.g. in a CATI survey) and for which it is not certain if they are eligible (e.g.in scope) or not.</i>	-
5	<b>(new) Number of eligible holdings</b> <i>The number of surveyed holdings which are eligible</i> <b>5=5.1+5.2</b>	14.116
5.1	<b>Number of non-responding holdings</b> <i>The number of eligible holdings which: - were contacted but refused to take part in the survey; - were contacted but were unable to participate in the survey for various reasons; - participated in the survey but the entire survey form cannot be used because of poor quality etc. This item refers to holdings for which no data is collected (unit non-response). 5.1&gt;=5.1.1+5.1.2</i>	702
5.1.1	<b>Number of non-responding holdings – re-weighted</b>	702
5.1.2	<b>Number of non-responding holdings – imputed</b>	0
5.2	<b>Number of responding holdings</b> <i>This item includes holdings which provided completed questionnaires, either entirely or partially.</i>	13.414

### 12.3.e Questionnaire(s)

*Please annex the questionnaire(s) used for the data collection, using the "Add file" button. If possible, please provide the questionnaire in English, French or German.*

[4] See Article 2 of Regulation (EC) 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) 571/88

### Annexes:

[Danish FSS 2013](#)

[Instructions to the farmers](#)

### 12.4. Data validation

#### 12.4.a Edit rules/checks

*Please mention edit rules applied. For example: data format checks, completeness checks, routing (skip) checks, range/outlier checks, relational checks, ratio edits, etc.*

All farms are checked whether the questionnaire is completed online, scanned or registered manually. The validation can be divided into two groups:

- Warning checks to detect possible mistakes, for instance more than 30 horses. It is not *necessarily* a mistake but most likely it is.
- Logical mistakes. It could be no working time indicated by the farmer or that the irrigated area is bigger than the irrigable area.

The questionnaires are registered and also edited in an Oracle database. There are about 150 validation rules where some are meant as warning rules and some are meant as “serious” mistakes meaning the concerned problems has to be solved before the questionnaire can be accepted. In addition to these rules some adhoc controls might be carried trough.

#### 12.4.b Tools used for data validation

*Please mention tools used.*

The tools used in the validation process are Oracle, SAS and excel.

#### 12.4.c Level of data validation

*Please mention. For example, data validation can be done at the level of the interviewer, of the supervisor, of the local collection centre, of the final collection centre.*

All the validation work is made at Statistics Denmark. The final survey register is stored at the PC network of Statistics Denmark. It is also the case for the special version of the survey register which Eurostat receives.

### 12.5. Data compilation

*Sections 12.5.a and 12.5.b should be completed only in case of sample surveys.*

#### 12.5.a Methods for deriving the extrapolation factor (the weight)

*Please give a description of the extrapolation procedures used to weight the data of the sampled holdings to the population, discussing the different steps taken, as follows:*

**12.5.a.1 Design weights** *Please explain how design weights were obtained. In case the approach departed from the usual one that consists of taking the inverse of the inclusion probabilities, then the latter should be explained. Design weights are defined as the inverse of the units' selection probabilities.*

Design weights are calculated using the usual approach as noted (the inverse of the inclusion probabilities).

**12.5.a.2 Adjustment of weights for non-response** *Please mention if you applied re-weighting for non-response. If yes, then the method used to determine the correction factors should be explained: reweighted Horvitz-Thompson estimator, ratio estimation, regression estimation, etc. Please indicate if response homogeneity groups have been created.*

Adjustment for non-response was done combined with calibration to known totals as described in 12.5.a.3. No response homogeneity groups were formed.

**12.5.a.3 Adjustment of weights to external data sources** *Please mention if you adjusted the weights to external sources and if so please describe and mention the variables used from the sources and the sources. Generally, samples are adjusted to external data sources in order to make their accuracy better. For instance, the calibration technique aims at calculating new weights which provide error-free estimates for a certain number of characteristics. If the characteristics are strongly correlated with the variables of interest, then the level of accuracy for most of the survey estimates is improved.*

When calculating the extrapolation factors three different external sources have been used:

##### 1) IACS:

The assumption is that as good as all farms of more than 10 hectares of utilised agricultural land (UAA) have applied for subsidies and it means that FSS should have the same number of farms as IACS as well as UAA within certain size groups:

Target values for extrapolation of the Danish FSS, farms based on IACS

Size of UAA	Number of farm	UAA, ha
10,0 - 19,9 ha	7 084	102 164
20,0 - 29,9 ha	3852	95 015
30,0 - 49,9 ha	4 357	169 653
50,0 - 99,9 ha	5 402	388 683
At least 100,0 ha	7 901	1 813 614

Small farms have not been included in this calculation because among them there are many farms which do not apply for subsidies. It could be farms with green house area, livestock farms with no land and also some small horticultural

farms. Among bigger farms non applicant farms are extremely rare.

## 2) Pig surveys:

The quarterly pig surveys are specially designed to cover farms with pigs and it means that the sample error for pigs is lower than in FSS. The extrapolation has thus had number of pigs in the pig surveys in April and July as a weighted average of these two surveys as the target value:

Target value for extrapolation of the Danish FSS, based on the pig surveys

	Number of pigs
Pig survey, April 2013, weight $\frac{3}{4}$	12 017 000
Pig survey, July 2013, weight $\frac{1}{4}$	12 252 000
Target value for FSS	12 075 750

The April survey has been given a higher weight since it is a bit closer to FSS in May and also because the farmers in FSS who took part in the pig survey in April did not have to report pigs also to FSS.

## 3) Fur animals from The Danish Fur animal Farmers Association:

All farmers with fur animals are assumed to be members of the association, which collects number of minks and other fur animals from the members. The association sends every year a register with individual farm information to Statistics Denmark.

Target values for extrapolation of the Danish FSS, based on information from the fur Farmers Association

Target value, number of fur animals	1 500
Target value, farms with fur animals	3 142 813

It should be noticed that the calibration method used may lead to extrapolation factors smaller than one.

**12.5.a.4 Any other applied adjustment of weights** *For example, extreme weights (which increase the variance of the estimates) can be trimmed.*

Nothing to remark

## 12.5.b Formulae applied for estimation methods

Calculations were carried out using the CLAN-macro under the SAS software. Especially, we use the generalized regression estimator (%GREG in CLAN/SAS), whereby standard errors are calculated using linearization of a Taylor expansion. Stating the involved formulas here is not practical, so instead we refer to the books by Carl-Erik Särndal and others, eg. Model Assisted Survey Sampling (Wiley 2003).

*Please annex the formulae applied for estimation methods, using the "Add file" button.*

## 12.5.c Other relevant information (if any)

N/A

## 12.6. Adjustment

Not relevant in the Danish FSS.

# 13. Comment

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## 13.a Any regional specification

*Please include relevant information such as on extreme weather conditions in certain region(s) during the agricultural year (reference period), differences in methodology across regions etc.*

N/A

## 13.b Possible improvements in the future

*Please suggest possible improvements.*

When it comes to question on use of water it is absolutely necessary to accept "round figure" answers. Many farmers easily understand this but others do not feel comfortable about giving "incorrect" information. So the task of the interviewer and designer of the questionnaire with instructions is to encourage the farmers to give as good

information as possible for questions where it is not realistic to demand strictly exact information.

### 13.c Other annexes

*Please annex any other(s) file(s), deemed as useful, using the "Add file" button.*

*Please indicate here the nature and purpose of the file(s).*

N/A

## Related metadata

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## Annexes

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