

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. Swedish board of Agriculture

Time Dimension: 2013-A0

Data Provider: SE6

Data Flow: FSS_ESQRS_A:1.0

Eurostat metadata

Reference metadata

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1. Contact

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1.1. Contact organisation	<p><i>Please provide the name of the organisation of the contact points for the data or metadata.</i></p> <p>Swedish board of Agriculture</p>
1.2. Contact organisation unit	<p><i>Please provide the name of the organisation of the contact points for the data or metadata.</i></p> <p>Statistics Division</p>
1.5. Contact mail address	<p><i>Please specify the postal address of the contact points for the data or metadata.</i></p> <p>Jordbruksverket SE-551 82, JÖNKÖPING Sweden</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 records of agricultural statistics in Sweden date back to the beginning of the nineteenth century. In the first half of the twentieth century established statistical methods were introduced for production of statistics on agricultural holdings, crop areas, crop production, livestock etc. In 1968, in order to improve the coordination of the statistics within the agricultural sector, Sweden established a farm register which was updated annually. The register covered all agricultural holdings with: more than 2 hectares of arable land; a large number of livestock but less than 2 hectares of arable land and holdings with horticultural production. Since its establishment the farm register was used as a sample frame for both farm structure surveys and other agricultural statistical surveys.

During the 1990s the farm structure surveys were subject to few methodological and technical changes. The substitution of some censuses with sample surveys, together with the processing of statistics in PC-environment, led to a reduction of the costs for producing agricultural statistics. However, the substitution of some censuses with sample surveys inevitably led to lack of agricultural statistics on municipality level for the years the substitution occurred.

The Swedish accession to the European Union in 1995 created the need for adapting national agricultural statistics to the EU legislation. Until 2001, Sweden conducted farm structure surveys annually, switching every year between EU and national legislation. The main difference between these two consisted of the number of the characteristics surveyed. The national farm structure surveys met primarily national statistical requirements and therefore were far less extensive than the ones based on EU legislation. In 2001, national farm structure surveys were abandoned, thus embracing the surveys based on EU legislation as the sole Farm Structure Survey. Before 2001, the data collection for the EU Farm Structure Surveys was made through postal questionnaires to the farmers. Since 2001, however, the data collection methods included also web questionnaires, administrative registers and telephone interviews with the farmers.

Through the Official Statistics Ordinance (SFS 2001:100), promulgated on March 2001, the Swedish Board of Agriculture became the sole authority responsible for organizing and producing all agricultural statistics in Sweden. Until March 2001, this was the responsibility of Statistics Sweden.

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.)	All national agricultural statistics in Sweden refer to the Official Statistics Act (SFS 2001:99) and to the Official Statistics Ordinance (SFS 2001:100) promulgated on March, 15 th , 2001. This ordinance appoints the Swedish Board of Agriculture as the sole responsible authority for all national agricultural statistics. This gives the Swedish Board of Agriculture sole mandate to decide which organisations and authorities can conduct agricultural statistical surveys in order to meet the statistical requirements both at national and at EU level.
- the scope and the coverage of the survey	All agricultural holdings meeting the criteria set for the target population are obligated to provide the requested information. The criteria for this is: - more than 2.0 ha arable land or - at least 5.0 ha of utilised agricultural land or - at least 2 500 m ² of horticultural area in open field or - at least 200 m ² of horticultural area under glass or - has a number of animals that exceeds 10 cattle or 10 sows or 50 pigs or 20 sheep or 1 000 poultry. The whole territory of Sweden is covered.
- the frequency and the reference period of the survey	The information provided should reflect the situation on the agricultural holding on the census's reference date, June 5 th 2013.
- the responsibility for the survey	Swedish Board of Agriculture was responsible for organizing the

	agriculture census FSS 2013
- the administrative and financial provisions	<p>All national agriculture statistics in Sweden refer to the Official Statistics Act (SFS 2001:99), and to the Official Statistics Ordinance (SFS 2001:100) promulgated on March, 15th, 2001. This ordinance appoints the Swedish Board of Agriculture as the sole responsible authority for all national agricultural statistics. This gives the Swedish Board of Agriculture sole mandate to decide which organisations and authorities can conduct agricultural statistical surveys in order to meet the statistical requirements both at national and at EU level.</p> <p>According to this Ordinance, Statistics Sweden shall manage a Council for Official Statistics. The Council has an advisory function and shall consider matters of principle regarding availability and the quality and usefulness of official statistics as well as issues on facilitating the response process for data providers for all statistical authorities. The Board therefore annually reports next year's planned releases, quality achievements, response burden and costs of the statistics to Statistics Sweden, who leads the Council. The Board reports on costs and achievements to the ministry, as do all authorities.</p> <p>The budget for the Statistics Division is decided through the Governmental budget process and the budget process within the Board the year before the statistics are produced. In this process there are clear procedures for how and when to argue for more resources given the demand for statistics. In 2013 the resources, including the grant, was sufficient for producing the required statistics according to the EU-regulation.</p>
- the obligations of the respondents with respect to the survey	<p>The Official Statistics Ordinance (2001:100) clarifies what statistics is compulsory for enterprises to give. In article 5a areas of special interest to agriculture is added, "Agricultural, forestry and horti-cultural operators and operators who keep livestock shall, in addition to the information specified in Section 5, provide information regarding:</p> <ol style="list-style-type: none"> 1) the land register designation, area, land use and ownership and lease situation with respect to the property or part of the property where the business is carried on; 2) the occupations of the persons employed in the business and the year of engagement; 3) the keeping of livestock. <p>The owner of a property where another person is carrying on a business referred to in the first paragraph shall provide the name and address of that person and information concerning the area used in the business."</p> <p>In the provision SJVFS 2013 which took effect on May 1st, 2010 the obligations of the farmers were further clarified. For example, through this provision, all agricultural holdings meeting the criteria set for the target population, were obligated to provide the requested information to the Swedish Board of Agriculture within the deadline set for the census, June 23th, 2010. The information provided should reflect the situation on the agricultural holding on the census's reference date, June 10th, 2010. Holdings which would fail to provide the data requested could be subject to a penalty in accordance with the abovementioned act.</p>
	<p>The survey is made as a paper questionnaire with additional telephone interviews. The respondent can answer by paper questionnaire or web questionnaire. The interviewers worked from the premises of the Swedish Board of Agriculture, and are employed by the Statistics Division at the Swedish Board of</p>

- the identification, protection and obligations of survey enumerators	Agriculture. The people performing the telephone interviews also answered questions the farmer posed by telephone. The Board has guidelines of how to deal with for example threatening situations via the telephone. A checklist and routines of how to handle such situations were communicated with the interviewers. No such situation occurred during 2013.
- the right of access to administrative data	The Swedish Board of Agriculture security classifies all documents, databases etc. according to their content of information. For all information, whether it is in a database or in an Excel sheet, there is a person that is designated as the owner of the information. Risk analyses are made each year. The Official Statistics Ordinance (2001:100) states that data from registers (i.e. administrative data or registers produced within the statistical system) should be used when possible. This means that the organizations responsible for administrative registers are obliged to provide the information.
- confidentiality provisions	The confidentiality of the data was kept in accordance with Act 24, 8 § of the Swedish confidentiality law on statistics (SFS 2009:400). According to this Act, the data provided by the holdings cannot be used for other reasons than statistical and research purposes. In both these cases, information that could identify the holder and the holding itself should be hidden. The questionnaires sent in by the farmers were disclosed only for the staff of the Statistics Division, and could not be shown to anyone outside of the division. All the personnel working within the Statistical Division of the Swedish Board of Agriculture (including the ones employed to work with the FSS 2013) had to sign a statistical confidentiality form which guaranteed the use and the storage of the data in accordance with the confidentiality law.

3. Quality management - assessment

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[Not requested]

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).

The FSS 2013 was carried out as a combination of variables for national purposes and variables surveyed according to EU requirements, Regulation (EC) No 1166/2008. The agricultural census 2013 included following information and statistical characteristics:

- a) Information about the holding: holder's name, address, personal or organizational number, telephone number, e-mail address, client number in the administrative register for single farm payment, client number in the register of organic Farming (at the control body), and production location number for bovine animals
- b) Areas of different types of land
- c) Areas of different crops
- d) Set aside areas under the EU aid programme

- e) Number of livestock of different kinds
- f) Organic farming: utilized agricultural area (converted and under conversion) and organic production methods in animal production.
- g) Farm labour force
- h) Other gainful activity
- i) Machinery and equipment
- j) Irrigation
- k) Rural development

The statistical characteristics b-k were collected in order to produce the customary annual national statistics of farm structure as well as to fulfil the EU requirements on agricultural statistics.

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 reference date was set to June 5th 2013 concerning livestock-characteristics. For land characteristics the reference period was set to November 2012-October 2013. For the characteristics within the farm labour force, production methods and irrigation sectors, the reference period was June 2012- May 2013. For rural development the reference period was January 2011-December 2013.

4.2. Relevance - User Satisfaction

[Not requested]

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.

Few characteristics from of the EU list of characteristics to be surveyed were not collected during the agricultural census 2013. In some cases these characteristics were non-existent, while were non-significant. Some of the NS characteristics have however been collected due to data is present in administrative registers. These are sunflowers, other oil seed crops, flax, hemp, industrial plants not mentioned elsewhere, other permanent crops and Christmas trees. Characteristics from the EU list of characteristics which have not been subject to survey (classified as NS or NE) in Sweden in the FSS 2013:

I. General characteristics:

1.02.01.02 one or more natural persons who is/are a partner, where the holding is a group holding? (NS);

1.03.01.03 UAA for share farming or other methods (NE);

1.03.02.03.09 Citrus plantations (NE);

1.03.02.03.10 Olives plantations (NE);

1.03.02.03.11 Vineyards (NS);

1.03.03.01 Household consumes more than 50 % of the value of the final production on the holding (NS);

1.03.03.02 Direct sales to final consumers represent more than 50 % of the total sales of the holding (NS)

II. Land:

2.01.01.02 Durum wheat (NS);

2.01.01.06 Grain maize (NS);

2.01.01.07 Rice (NE);

- 2.01.05 Fodder roots and brassicas (NS);
- 2.01.06.01 Tobacco (NE);
- 2.01.06.02 Hops (NE);
- 2.01.06.03 Cotton (NE);
- 2.01.06.06 Soya (NE);
- 2.01.06.11 Other fibre crops (NE);
- 2.01.06.12 Aromatic plants, medicinal and culinary plants (NS);
- 2.01.08.01 Flowers and ornamental plants (excluding nurseries) outdoor or under low (not accessible) protective cover (NS);
- 2.01.09.02.02 Leguminous plants (NS);
- 2.02 Kitchen gardens (NS);
- 2.03.03 Permanent grassland no longer used for production purposes and eligible for the payment of subsidies (NE)
- 2.04.01.01.02 Fruit of subtropical climate zones (NE);
- 2.04.01.03 Nuts (NE);
- 2.04.02 Citrus plantations (NE);
- 2.04.03 Olive plantations (NE);
- 2.04.03.01 Normally producing table olives (NE);
- 2.04.03.02 Normally producing olives for oil production (NE);
- 2.04.04 Vineyards of which normally producing quality wine, other wines, table grapes, raisins (NS);
- 2.04.04.01 Quality wine (NE)
- 2.04.04.02 Other wines (NS)
- 2.04.04.03 Table grapes (NE)
- 2.04.04.04 Raisins (NE)
- 2.04.07 Permanent crops under glass (NE);
- 2.05.01 Unutilised agricultural land (NS);
- 2.06.01 Mushrooms (NS);
- 2.06.03 Energy crops for production of biofuels or other renewable energy (NE);
- 2.06.03.01 of which on set-aside area (NE)
- III. Livestock:*
- 3.03.02 Goats (NS);
- 3.05.03.02 Ducks (NS);
- 3.05.03.03 Geese (NS);
- 3.05.03.04 Ostriches (NS);
- 3.05.03.99 Other poultry, not mentioned elsewhere (NS);
- 3.06 Rabbits, breeding females (NE);
- 3.07 Bees (NS);
- 3.99 Livestock not mentioned elsewhere (NS).
- VI. Other gainful activities:*
- 6.01.08 Forestry (NS)
- VII. Support for rural development:*
- 7.01.04 Meeting standards based on Community legislations (NE);
- 7.01.05 Participation of farmers in food quality schemes (NE);
- 7.01.06 Natura 2000 payments for agricultural area (NE);
- 7.01.07 Payments linked to Water Framework Directive (NE);

[\[1\]](#) 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:

[NS_NE Characteristics](#)

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 main source of error should be the item non-response rate that in some cases is quite high. In labor force there are variables that have a non-response rate as high as 50%.

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 extrapolation factor was calculated using Horvitz-Thompson estimation in each stratum. The extrapolation factor was N/n in each stratum. The Relative Standard Error (RSE) is for some main characteristics presented in the tables attached, even though these characteristics are collected from each population unit, in order to illustrate the overall quality of the sample. The RSE concerns extrapolation from the sample. The RSE is calculated using formula $\sum N_h(N_h - n_h)s_h^2/n_h$.

Annexes:

[Relative standard errors](#)

[Precision requirements](#)

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.

All RSEs are below the threshold.

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.

Due to the low non-response we do not do any further analysis in the bias from the non-respondents.

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.

Under coverage – newly created holdings, which belong to the 2013 target population, which did not apply for subsidies in 2013 (and thus were not included in IACS) or were not found in the poultry-, sheep- or pig registers but were above the threshold values for inclusion in the target population, were not included in the survey. The number of such holdings is estimated to be very small, as it is considered to be very rare in Sweden to have newly established holdings which do not appear in any of the mentioned registers.

The farm register was updated when respondents report changes on holdings according to the instructions in the questionnaires. When the reported data were inadequate, further investigations were necessary. In general the remaining degree of under coverage was considered to be so small that no correction for this was needed.

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.

Over coverage - holdings which are not part of the 2013 target population (mainly holdings which have recently closed down) have been identified and removed from the register and have not been included in the processing. The over-coverage in the survey is therefore negligible. These are not included in the calculation of weights.

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.

Sweden uses an extraction from IACS and our animal registers that are very fresh (only a few weeks old compared to the survey day). If a holding was misclassified in the frame it will be reclassified with the new data. The holding won't change its strata though. We also have fairly low standard errors.

5.3.1.d Contact errors

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

In some cases the first information on addresses was incorrect. The addresses of these holdings were found manually in most cases. However, they were very few, 15-20 in total.

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.

The risk for duplication or multiple listings of holdings exists because of the fact that different sources are used for updating the farm register. The same holding can figure in more than one register, but with different information. In other cases more than one member of the holding can apply for subsidised for different parts of the land available within the same holding. The holdings that receive two questionnaires from the Swedish Board of Agriculture are obliged to answer only one of them, and fill in the ID-number of the unanswered questionnaire on a special field created for this purpose. Most of duplicates/multiple listings are identified at the end of the survey; however, having in mind that the survey is object of non-response and partial non-response, there is a risk that some duplication cannot be identified. To minimize the risk for duplicates all holdings with more than 7 hectares of arable land and not applying for single farm payment were removed. Holdings above 7 hectares are therefore assumed to apply for subsidies. Of course this

assumption is not correct in every single case but it is assumed to be the best estimate of the total number of holdings. About 1000 holdings were eliminated this way.

5.3.1.f Other relevant information, if any

Other coverage errors have not been detected and are estimated to be very small.

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 over-coverage was 10,381 holdings. About 15.5 % of the final population.

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.

The total measurement errors from questionnaires are estimated to be of insignificant magnitude, mainly due to the following fact. Farm structure censuses/surveys have been conducted annually in Sweden and therefore most of the holders/respondents are usually very well acquainted with these censuses/surveys and the questionnaires used.

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

Extensive controls was made and there were something wrong for 0.4% company in the data editing process. Which was corrected.

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

Some information was compared to register and other sources. For 2.1 % of the company there were something wrong and could be corrected.

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.

In the census as a whole, 4,8 % (3254) of the respondents did not answer the questionnaire at all. The corresponding non-response for the survey according to the EU-legislation was 2,5 %. Some of these holdings have probably been closed down while others have been impossible to reach despite efforts with reminders by post and telephone calls. Only a few (less than 100) of the respondents refused to fill in the questionnaire or give information at telephone contact. For part of these non-respondents, information about crops and bovines were found in IACS or CDB, which confirmed that these holdings still existed. The holdings where no information was found in administrative registers were closed down due to the risk of double counting, e.g. of crop areas.

Due to the low non-response we do not do any further analysis in the bias from the non-respondents.

The weights were recalculated for the unit non-response on the sample characteristics.

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.

Partial non-response was most frequent in the farm labour force section and the rural development section. In the farm labour force section about 52 % of the respondents had at least one missing value. However, only about 9 % had missing values for all characteristics in the labour force section. The partial non-response has been considered to be the most serious type of non-sampling errors. To avoid bias from partial non-response, much work has been done to create new imputation methods minimizing the risk for bias from imputation.

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).

2.5 % based on the part that was sampled and received a more extensive survey. 4.8 % on the total population.

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.

Partial non-response was most frequent in the farm labour force section and the rural development section. In the farm labour force section about 52 % of the respondents had at least one missing value. However, only about 9 % had missing values for all characteristics in the labour force section.

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.

Processing errors from the scanning procedure have been detected. These errors have as far as possible been taken care of through the means of different checks. Some other minor processing errors have also been detected. On the whole the errors from processing are judged not to be of significant magnitude, even though some errors can still exist on individual holdings.

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.

Following methods were used for correcting general information about the holdings.

- Analysis of holding transfers indicated on the questionnaires. This often resulted in the closure of holdings, as these holdings usually had been combined with other holdings.
- From the telephone directory information was collected about telephone numbers for holdings.
- From the enterprise database information was collected about addresses and if holdings are still existing.

The following methods are some of those, which were used to complete/correct data on the survey characteristics:

- From telephone interviews with the respondents
- From the taxation register, information was collected about spouses and about incomes from other sources than agriculture
- Information for the same holdings from previous Farm Structure Surveys
- Information from the 2013 horticultural survey
- Information from other registers.

5.3.4.c Imputation methods

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

The methods differed depending on which part of the questionnaire that needed to be imputed. The methods differed also if there were missing values in a whole section of the questionnaire or if only some single values in a section were missing. Imputation has been done for every section with help of values from other similar farms and sections.

For the section General characteristics, general information about the holding and the holder was obtained from different registers. These registers include: pig-, sheep- and fowl registers; registers on memberships for different horticultural associations; Integrated Administration and Control System (IACS) for crop areas and CDB.

In cases where values were missing for a whole section of the questionnaire, such as the farm labor sector, the whole section was imputed with values from a similar farm which had answered this part of the questionnaire. A stratification

based on the Swedish typology was used to categorise the holdings for these imputations. For the livestock section, the principle of last known value applied. For the irrigation section on the other hand, the last known values were used together with logical checks against the utilized agricultural area.

Single missing values were only imputed in few cases, and mainly within the labour force section. If for example the number of working hours was missing for one or more persons on the holding, then standard working hours on the holding were indirectly used for imputation. Further, with help of standard working hours on the holding the total expected number of hours worked on the holding was estimated. However, since the total standard working hours differs from the hours filled in by the holdings in the questionnaire, the quota between these two values on national level for 2010 was used as correction factor. These 'imputation hours' were then distributed among the persons with missing value for the number of working hours.

The instructions, which were in force for the total survey process, generally permitted the data to be corrected or completed by the staff directly on PC.

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

Interviews by telephone were written down on paper questionnaires and scanned into our IT-system. Other corrections were primarily made by SAS. The staff of the Statistics division at the Board of Agriculture made all of the corrections.

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.

In the land characteristics the imputation rate was between 0% and 2.3% with the highest rate on forest land. However the characteristics on irrigation was imputed at a rate of 43%.

In the livestock characteristics there was no imputation on cattle as it was taken from the cattle register. For other animals there was imputation on rate in general between 0% and 3%. For turkeys the imputation rate was 9%.

In the section on machinery imputation has been made on 13.4% of all holdings. On equipment for renewable energy the imputation rate was 40%.

In the farm labor force section about 52 % of the respondents had at least one missing value. However, only about 9 % had missing values for all characteristics.

In the section on Other Gainful Activities there was an imputation rate at 39%.

In the section on support for rural development all characteristics were collected from administrative data and therefore not imputed.

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.

In the questionnaires the holders are asked to give information about the total area of arable land and total area of pasture and meadow. The total agricultural area from IACS, for individual holdings, is not always corresponding to the information given by the holders in the questionnaires. In the end, data from IACS is used for crop areas and areas of pasture and meadows. This procedure could cause errors on individual holdings. However the procedure used should not cause any systematic errors.

5.3.6. Data revision

-

5.3.6.1. Data revision - policy

Brief description of the revision policy

If there are errors in data which has already been published, then the errors have to be documented and the data should be updated. Updated information together with a comment will be published.

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.

Some data are published as “preliminary results” clearly informing that these can deviate from the final statistics which will be published later in accordance with the publication schedule set for national official statistics.

5.3.6.3. Data revision - average size

[Not requested]

5.3.7. Seasonal adjustment

[Not requested]

6. Timeliness and punctuality

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-

6.1. Timeliness

-

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.

Time lag first results: 5 months

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.

Time lag final results: 18 months

6.2. Punctuality

-

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.

Most publications were delivered in time. Though the publication on Farm labour force was postponed 5 months. Results on full time farming was also postponed one month.

7. Accessibility and clarity

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-

7.1. Dissemination format - News release

[Not requested]

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.

The data collected during the agricultural census FSS 2013 was disseminated free of charge in the series Statistical Reports on the official website of the Swedish Board of Agriculture www.jordbruksverket.se under the heading Statistics, and on the website of the Statistics Sweden www.scb.se. These Statistical Reports were divided by subject, and in addition to the statistical results also included a short description of the survey

methodology. Together with each Statistical Report, a quality declaration aiming to explain the quality of the statistics was also published. The results of the Farm Structure Survey are also published together with other agricultural statistics in the Agricultural Statistics Yearbook.

7.2.b Date of issuing (actual or planned)

From the FSS 2013, following publications/reports have been disseminated:

Name of the report	Reference	Publication data
Livestock in June 2013. Preliminary results	JO 20 1301	October 31, 2013
Holding and Holders 2013. Final results	JO 34 1401	May 5, 2014
Type of farming 2013. Swedish and EU typology	JO 35 1401	April 23, 2014
Other gainful activities on agricultural holdings 2013	JO 47 1401	September 9, 2014
Full-time farming in Sweden 2013	JO 65 1401	January 13, 2015
Use of agricultural land 2013. Final results	JO 10 1401	March 25, 2014
Livestock in June 2013. Final results	JO 20 1401	April 10, 2014
Farm labor force 2013	JO 30 1401	November 18, 2014

7.2.c References for on-line publications.

The data from the FSS 2013 has also been published on the On-line Statistical Database of the Swedish Board of Agriculture, which can be found on the following link:

<http://statistik.sjv.se/PXWeb/pxweb/sv/Jordbruksverkets%20statistikdatabas/?rxid=5adf4929-f548-4f27-9bc9-78e127837625>

7.3. Dissemination format - online database

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

<http://statistik.sjv.se/PXWeb/pxweb/sv/Jordbruksverkets%20statistikdatabas/?rxid=5adf4929-f548-4f27-9bc9-78e127837625>

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.

In 2013 there was the following number of consultation in each areas:

Livestock: 4397

Agricultural holdings and holders: 1406

Use of agricultural land:3515

Labour force: 330

For January-March 2014 there was the following number of consultations:

Livestock: 886

Agricultural holdings and holders: 278

Use of agricultural land:830

Labour force: 88

In each area there are a number of different tables to consult. 7 different for livestock, 2 for agricultural holdings and holders, 5 for use of agricultural land and 4 for labour force.

7.4. Dissemination format - microdata access

[Not requested]

7.5. Documentation on methodology

7.5.a Available documentation on methodology on FSS national survey

Please provide references.

Internally we have one document containing information how we have made all of our imputations. We also have a document containing information about how we have been searching for missing values. We also have meeting

notes from all of our meetings, both an FSS group and a methodology group. However, all documents are in Swedish, but can be made public if there is a need.

7.5.b Main scientific references

Please provide references.

Sampling techniques, William G. Cochran

Code of Practice by the Statistics division at the Swedish Board of Agriculture.

7.5.1. Metadata completeness - rate

[Not requested]

7.5.2. Metadata - consultations

[Not requested]

7.6. Quality management - documentation

Available documentation on quality

Please provide references.

Internally we have something that is a predecessor to Code of Practise that we have been using for some years.

We are working in accordance to Code of Practise. This is also documented.

On each publication that we make, we have an advanced documentation that in depth describe all of the steps that are required until the final publication.

7.7. Dissemination format - other

[Not requested]

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.

The national definition of holdings in SE is the same as the EU-definition stated by annex 2 in regulation 1166/2008. In Sweden we have a combination of the EU thresholds and the old Swedish thresholds for national statistics. Apart from the EU thresholds (which follows the regulation 1166/2008), Sweden also have these thresholds:

More than 2 ha of arable land

At least 0.25 ha of outdoor horticultural plants

At least 200 sqm of indoor horticultural plants

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.

There are no differences in the coverage in records for national purpose compared with to those records sent to Eurostat.

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.

The version nr 9 of the handbook has been used to implement the FSS-definitions.

No difference between national and EU definitions has been used.

Full time employees are considered at 1800 hours calculation AWU.

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.

Common land is an NE characteristic in Sweden and therefore was not included on the list of the characteristics to be surveyed during the agricultural census, FSS 2013.

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.

Not applicable.

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.

We do not have any common land.

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.

Not applicable.

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.

For most of the agricultural holdings, the location of the holding was extracted from the IACS-system. In those cases where this information was not available within the IACS, the location of holding was extracted from coordinates from the Central Cattle Register (about 500-600 holdings). For another 2000- 3000 holdings which did not apply for subsidies in 2013 (mainly small farmers), the address of the holder was used for obtaining the location.

In another department of the Swedish Board of Agriculture we have specialists who work with a data system called Geographic Information System (GIS). They have geographical coordinates for every block as well as every production location number. One of these specialists connects the geographical coordinates to every holding by using the following information:

1. Block nearest the location of the holding (65 800 holdings)
2. Production location (200 holdings)

For the remaining holdings which did not apply for subsidies in 2013 (2000-3000 holdings), the connection between the geographical coordinates and the addresses was managed with the help of GIS specialists at Statistics Sweden. In some cases we could see that the holdings did apply for subsidies during earlier years. Through information on IACS for the previous years we were able to extract the location for these holdings. In a few other cases we had to deal with holdings for which no information was available on IACS for previous years. For some of these holdings we were able to find the location on other administrative registers, but for a few of these holdings we were only able to find the address of the holder. If there was any conflict between the address and the municipality, we chose to accept municipality as a location reference. The holdings where addresses were used are in general very small and most likely the holding is located where the address is situated. In some exceptional case the coordinate might be incorrect.

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).

The reference system ETRS89 has been used at transmission.

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 are rounded to 5 minutes, meaning holdings are grouped to points on a grid with 5 minutes of separation in both latitude and longitude between each point.

In cases when only one or two holdings end up on such a point on the grid, these holdings have been relocated to an adjacent point with more holdings. That way, there will be at least three holdings on each point. There have also been cases with three holdings relatively far from each other and other holdings when a different method was used. Instead of moving them far to a fourth point with other holdings they were then bunched together in their geographical middle on the grid, as long as they were in the same region.

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 building is determining the NUTS3 region of the holding.

8.1.f (new) 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).

There are no difference between national standards and rules for certification of organic products and the ones set out in Council Regulation No.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 requested]

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.

a. There have been no changes.

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.

a. There have been no changes.

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.*

a. There have been some changes but not enough to warrant the designation of a break in series.

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.

In the year 2010 we conducted a census, but in the year 2013 we conducted a sample survey.

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.

Sweden does not have any common land units.

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.

Sweden doesn't have any common land units

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
B_1_1 Cereals	984,984	963,283	2%	
B_1_2 Pulses - total	30,595	36,765	-17%	The area of pulses can differ a lot between the years. In 2010 the area was quite large.
B_3 Permanent grassland and meadow - total	442,896	451,908	-2%	
B_4 Permanent crops	4,558	2,944	55%	The increase is mainly due to the addition of Christmas trees to the FSS 2013.
B_5_2 Wooded area	3,496,730	3,687,548	-5%	
C_1 Equidae	111,365	117,026	-5%	
C_2 Cattle	1,496,526	1,536,658	-3%	
C_3_1 Sheep - total	576,769	564,922	2%	
C_4 Pigs	1,398,875	1,519,874	-8%	
C_5 Poultry	16,620,232	14,282,963	16%	The number of poultry can differ considerably between the years. This is due to some stables being empty on the day that we conduct the survey.

8.2.1. Length of comparable time series

[Not requested]

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

We use administrative registers for areas and cattle, so there is no difference between our national results and the FSS results for these items.

8.3.b Comparisons at macro level

We conduct surveys of pigs, sheep and poultry each year. The results are compared to the latest surveys. The results for animals were also compared with production figures. We also compare our results with the Economic Account for Agriculture (EAA). The comparisons that were made confirmed that the results for the survey are in a reasonable level.

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 FSS statistics are fully reconcilable with statistics obtained from other sources.

9.1.1 Coherence - sub annual and annual statistics

[Not requested]

9.1.2. Coherence - National Accounts

[Not requested]

9.2. Coherence - internal

[Not requested]

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.

We do coordinate the survey with the survey on animals. This means that we use the same reference date for the animal survey and in the questionnaire (and for the register data on cattle) we make the questionnaire on the lowest category (e.g. the categories specified by the regulation 1165/2008 on livestock statistics).

We also made an special survey on drainage at the same time as the FSS.

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.

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.

Micro data can be given out to external users for research purposes only after ensuring that all identification information on the holder and the holding itself has been removed.

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).

The confidentiality of the data collected is guaranteed in accordance with the Act 24, 8§ of the Swedish confidentiality law on statistics (SFS 2009:400). According to this Act, the data provided by the holdings cannot be used for other reasons than statistical and research purposes.

The same law applies during the dissemination of the results. To ensure non-identification of individual holdings in the dissemination, the number of holdings within a region or municipality is not disclosed if the region or the municipality in question has less than three agricultural holdings. In such cases the symbol [...] is given in the table cell.

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;

The agricultural census FSS 2013 was planned and conducted by the Statistics Division at the Swedish Board of Agriculture. The FSS 2013 team included members who had worked with this survey since year 2003, but also new members who were recruited and trained especially to work with these tasks. The project team was located on the premises of the Swedish Board of Agriculture, thus no field personnel were involved. One person had one or more areas of responsibilities within the project. In total 20 persons were involved in the survey team:

- One survey manager with overall responsibility
- Four statisticians responsible for the design of the population frame and the sample frames in accordance with EU precision requirements; setting up criteria and procedures for data controls; methods for handling missing or incorrect data items; estimation procedures and other methodological issues
- Three persons working with the design of the questionnaires, information booklets and the national legislation for the survey
- Two persons working with IT-applications, scanning definitions, web applications and archive functions
- Two persons responsible for establishing the final register and transmission of data tables to Eurostat.

- 15 persons working with the data collection: registering the questionnaires sent in by the respondents, doing basic checks on the data collected, processing of information and collecting the complementary information by telephone calls to farmers.

In addition to those 15 persons mentioned above, there were during different short periods of the data collection, also temporary staff employed to collect complementary information due to partial non-response in the survey. This was done by telephone interviews.

As the agricultural census FSS 2013 was designed in a similar way as the previous farm structure surveys (from 1993-2010), there was no need for conducting a pilot survey.

The promotion of the census was done through the website of the Swedish Board of agriculture. Two ads were also posted in two of the largest agricultural newspapers in the country.

Calendar overview

Activity	starting date	final date
IT- system: development	September 2012	April 2013
Construction of the questionnaire	November 2012	February 2013
National legislation	November 2012	April 2013
Data collection procedure-instructions	December 2012	April 2013
Farm register-construction	December 2012	April 2013
Population and sample design	January 2013	April 2013
IT- application, scanning, verifying: development and test	February 2013	April 2013

<p>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.</p> <p>6. data analysis</p> <p>7. data dissemination</p>	Data collection staff- recruiting	February 2013	April 2013
	Data collection	June 2013	October 2013
	Data controls and processing	June 2013	February 2014
	Farm register 2013- set up	December 2013	February 2014
	Dissemination of national statistics	October 2013	December 2014
	National Methodological report	August 2014	December 2014
	Transmission of final data to Eurostat: - FSS	August 2013	December 2014
12.b The bodies involved and the split of responsibilities among bodies with respect to the main steps of the survey process	The Swedish Board of agriculture is the sole responsible body for this survey.		
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.	No deviation from calendar.		

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.

In the context of agricultural statistics an agricultural holding is a business unit under single management, which operates in agriculture, animal husbandry or horticulture. Holdings are divided into groups in terms of legal status and management:

- Holdings operated by natural persons
- Holdings operated by legal persons (estate of deceased person, Limited Liability Company, state, municipality, church, other).

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.

71,932

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 target population for FSS 2013 thus consisted of all agricultural holdings in Sweden (according to the definition above), which met at least one of the following criteria in June 2013:

- More than 2.0 hectares of arable land or 5.0 hectares of UAA
- At least 200 m² area under glass or 2500 m² outdoor horticultural cultivation
- At least 10 cattle or 10 sows or 50 pigs or 20 sheep or 1000 poultry (including chickens).

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).*

67,146

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.

No, it is the same.

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*).

67,146

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.

There are 2,220 holdings in the record sent to Eurostat with standard output equal to zero. These holdings have mostly fallow land but in some cases there are holdings with only energy forest. The area for crops in the survey is collected from IACS and the application for subsidies and these holdings 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. This holds for both fallow land and energy forest.

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 UAA that is below our thresholds is 0.03 %. The number of livestock units that is below our thresholds are 0.03 %.

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.

Data is provided from a mix of different sources and also a mix of characteristics that are collected as a census and some that are collected as as a sample survey.

All agricultural holdings has been sent a questionnaire. For the main characteristics on the holding, total areas, livestock (excluding cattle), some important characteristics to locate the holding in registers and information on when the total holding is sold, rented or in some ways been closed has been included in all questionnaires. A sample survey has been made to aproximately one third of the population where also questions about irrigation, other gainful activities, labour force, machinery and equipmant has been included.

For some characteristics administrative registers have been used as sources of data. Six administrative data sources were used during the agricultural census- FSS 2013: IACS, the Bovine Register, the Organic Farming Register, the register on

Genetically Modified Crops, the Register of Support for Rural Development and the education register.

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 statistical farm register, which has been in use since 1968 as a frame for different agricultural surveys, was the frame also for FSS 2013. The FSS 2013 frame population consisted of holdings from the FSS 2010 updated with information from holdings in the livestock survey for the years 2011 and 2012, and holdings applying for subsidies 2011 and 2012 (IACS). The frame was also updated with information from the poultry-, sheep- and pig registers.
- For the holdings which do apply for subsidies, all information on use of agricultural land and on areas with different crops is obtained directly from the IACS register. If we would compare the total agricultural area on the IACS with the one on the Farm Register, we get a difference of 1.4 % (more land on IACS than on the Farm register). This means that at least 98 % of the UAA is covered in FSS2013, even if we would have missed a few holdings.
- There can be a few holdings with pigs, sheep and poultry which cannot be found on our Farm register. However all holdings with livestock in Sweden have to be registered at the Swedish Board of Agriculture and be provided with a production location number (PPN). We use all these registers to update the population frame for the FSS, which means that no holdings with such livestock and which meet the thresholds for the FSS2013 are neglected. Therefore the coverage of LSU in FSS should be close to 100 %.
- The number of the bovine animals is taken directly from the bovine register (CDB) which includes 99.7 % of all LSU for bovine.

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.

We combine IACS, the cattle register, and the last known value of other animals and horticulture production.

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

The last update of the frame was conducted in April 2013.

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.

It is a probability design.

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.

One.

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.

The sampling unit is holdings.

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 frame was divided into 127 different strata. The variables for stratification were divided into:

- Counties (NUTS3)
- area of agricultural land,
- number of animals of different kinds,
- specialized holdings with turkeys, hens, chickens, gilts.
- new holdings according to pig-, poultry-, sheep register and the horticultural division of the federation of Swedish farmers (GRO) plus holdings from the “Register survey”.
- holdings that do not longer exist in IACS or other registers

The principles for building up strata were almost the same as for earlier farm structure surveys. Pre-stratification was used.

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.

We use simple random sampling in each strata. The number of holdings that should be selected from each strata is determined by Neyman allocation (on a number of variables of which we picked the largest number).

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).

Sampling ratios of 100% were used in the strata with holdings of large size in some respect. Total survey of these strata was important for acquiring high statistical precision and thus producing statistics with high quality. Sampling ratios of 100 % was also applied for all the strata containing new holdings from different animal registers. This was done because of the lack of information for these holdings which made it difficult to use correct pre-stratification. Holdings with more than 100 ha cereals + green fodder, more than 800 pigs, more than 100 sheep. In addition we had some special strata with complete enumeration, such as holdings with a lot of labor force, holdings with a lot of irrigation, holdings with large areas of fruit trees, holdings with a lot of turkeys, holdings with a lot of hens, holdings with a lot of chickens, holdings with a lot of boars and new holdings without animals and pasture of more than 10 ha.

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.

For each of the other strata different sample sizes were calculated according to Neyman allocation based on: area of pasture land, area of grain land, number of bovines, number of pigs, number of sheep and number of animal units. The final sample size for each stratum was usually chosen as the highest of the sample sizes according to the different Neyman allocations.

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.

A new sample is drawn in each survey.

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

SAS

12.1.d.10 other relevant information, if any

NA

12.1.e Use of administrative data sources

12.1.e.1 Name, legal base, time reference and (new)

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

The IACS register was developed based on the Council Regulation (EC) no 1782/2003, and contains information from the applications for the single farm payments. When applying for single farm payments the farms have to declare the use of all agricultural areas on the holding; e.g. which crops are grown, the area for each crop, or the fallow area. The reporting units are single persons and legal holdings which send applications to the Swedish Board of Agriculture. For those holdings that we did not have any areas according IACS register we conducted a special follow up survey to investigate their different kind of crops. The areas on these holdings were in a large scale (93%) on "Forage plants - temporary grass" and "fallow land without subsidies".

There is no exact correspondence between the responsible person/holding (the reporting unit) applying for single farm payment and the definition of the holding in the Farm Structure Surveys. One holding can/could consist of several persons applying for the single farm payment.

The main linkage between the holdings in the statistical farm register and the reporting units in IACS is the personal number for natural persons and organisational number for legal holdings. These numbers are unique for each entity. In the farm register, there is for every holding registered one personal number for each farmer on the holding. For units which mismatch according to this method, the client number for the single payment application at the Swedish Board of Agriculture followed by production location number is used. All remaining reporting units in IACS are considered to form new holdings in the farm register.

The characteristics taken from IACS are areas for different crops and other uses of the agricultural area. IACS does not contain information from all statistical holdings in the target population, as there are holdings with more than 2 ha of arable land or more than 5 ha of agricultural land (UAA) not applying for single farm payment. However it is judged that farmers/enterprises are applying for single farm payment for nearly all arable land in Sweden.

The quality of the information in IACS is deemed to be very high, as there are controls on a part of the holdings about the information delivered by the farmers. The farmers may also lose some part of the single farm payment if the reported areas are incorrect.

The definitions of crop areas and other areas in IACS are in line with the definitions in the farm structure surveys and the relevant areas in IACS can be translated to corresponding areas in the farm register. The reference date in FSS 2013 is June 5, which corresponds to the reference time (crop year) in the system for single farm payments.

The second administrative data source used in FSS 2013 is the **Bovine Register**. This register, in Sweden called the Central Cattle Register (CDB), was set up in accordance with Council Regulation (EC) No 1760/2000 of 17 July 2000. The register's main objective is to make it possible to trace contagious animal diseases. The Commission approved the CDB in Sweden for use in pursuing this main objective from 1 November 1999. The register has also been approved to be used for other objectives and since 2000 it has been used, and served as the basis, for various EU cattle premiums (special beef premium, slaughter premium, suckler cow premium, extensification aid, etc.).

The CDB is made up of the following two main parts:

- One part contains information on the identity of individual animals, both living and dead, such as sex, date of birth, breed and age.
- Another part contains information on events relating to individual animals, such as birth, slaughter, purchase and sale as well as transfer between different holdings, etc.

Farmers with bovine animals must report each event for each individual animal, such as birth, transfer, sale for slaughter, etc., to CDB within seven days. A calf should be tagged within 20 days of birth and then reported within seven days to CDB. Late reporting will incur additional charges for the farmer.

There is not an exact correspondence between the responsible person/enterprise (the reporting unit) for bovine animals and the definition of holding in the farm structure surveys. This is due to the fact that the holders in the statistical farm register are not necessarily the persons responsible for the reporting to CDB. It could also be the case that a holding has more than one production location in the farm register and that different persons are responsible for the reporting to CDB for different production locations.

The main linkage between the holdings in the statistical farm register and the reporting units in CDB is the personal number for natural persons and organisational number for legal enterprises. These numbers are unique for each entity. In the farm register there is for every holding registered one personal number for each farmer on the holding. For units that mismatch according to this method, the linkage characteristics production location is used.

The quality of the information in CDB is judged to be very high, as there are both administrative controls and field-controls on part of the holdings and as the farmers may lose some part of the single farm payments if the reported information is incorrect.

The reported information about bovine animals in CDB, such as date of birth and sex, can together with information in a milk database on milk deliveries to dairies be translated to the definitions of the different kinds of bovines in FSS 2013.

However, as all cows on holdings delivering milk to dairies are considered to be milk cows, there will be a small overestimation of the number of milk cows and a corresponding underestimation of the number of other cows. The same method is used in the statistical surveys on cattle according to the Council Directive 93/24/EEC.

The reference date for the transmission of information from CDB to the farm register is June 5, the same reference date as for FSS 2013.

The third administrative data source used in FSS 2013 is the Organic Farming Register based on the Council regulation EEC N. 2092/91. In 2013 there were three control bodies on the market working with controls of agricultural holdings on which organic farming methods are applied. The control bodies are authorized by the Swedish Board for Accreditation and Conformity Assessment.

The data concerning the characteristics on organic farming in FSS 2013 are based on existing information on individual holdings in registers at the control bodies. The registers cover all holdings applying organic farming methods or are in the conversion period. To establish a link to the statistical farm register and to have the information suitable for the FSS 2013, the Board of Agriculture sent a questionnaire to the control bodies asking for information on:

- the personal/organisational number of the holder or holding,
- the client number of the holding at the control body,
- what kind of crops are grown and the corresponding areas in combination with if the areas were under conversion or converted
- organic production methods applied in the animal production

Information on addresses and telephone numbers of the holder/holding was also transmitted from the control bodies.

In the FSS questionnaires holders were asked to fill in their client number at the control body. By using the personal/organisational number of the holding combined with the information on client number at the control body and in the FSS questionnaires, a link between the Organic Farming Register and the statistical farm register could be established. In cases of mismatch, addresses and telephone numbers were also used to link holdings in the different registers. In the end there were only a few mismatches.

The fourth register used in the FSS 2013 was the **register of Genetically Modified Crops**. It is based in the Swedish Board of Agriculture and contains information of what kind of crops that are grown, the corresponding areas and where the areas are located.

The definition of the reporting unit is the same as for the holdings applying for the single farm payment. Hence, the identification of the units is also the same, i.e. the personal number for natural persons and organisational number for legal holdings. Should there be a mismatch, the client number at the Swedish Board of Agriculture is used. The register contains information about all areas where GM crops are grown.

The reason why Sweden created a registry of GM crops was to have complete control over all the GM crops grown. Hence, the register of GM crops should not contain any errors.

The fifth register used in the FSS 2013 was the **register of Support for Rural Development**. It is based in the Swedish Board of Agriculture and contains information about all holdings seeking support for different kinds of rural development.

The definition of the reporting unit is the same as for the holdings applying for the single farm payment. Hence, the identification of the units is also the same, i.e. the personal number for natural persons and organisational number for legal holdings. Should there be a mismatch, the client number at the Swedish Board of Agriculture is used.

The sixth register that has been used in FSS2013 is **the Education register**. In this register there is information on education level for each person in Sweden. The identification is on the personal number and is matched with all persons on a holding.

There is also a number of registers used to build the sample frame and to give information for having the best possible sample design. These registers are livestock registers for pigs, sheep and poultry combined with registers on slaughtering of animals.

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.

Both of our registers (IACS, CDB) use personal numbers (social security numbers), production place number or application ID as the key variables. However, in the farm register, one or more personal numbers, production place numbers or application ID:s can be at one holding.

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

Purpose	Administrative source <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	
- 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>	IACS: replaces in total the areas of different kinds of crops on the whole survey population. CDB: replaces in total the number of cattle on the whole survey population. The organic farming register identifies holdings that are certified for organic farming. The register of Genetically Modified Crops replace the area of genetically modified crops. The register of Support for Rural Development replaces all information on the section of rural development support. The common identifier is personal numbers (social security number), production place numbers and application ID. There can be more than one personal number, production plac number or application ID on a single holding.
- to replace the survey on all characteristics and on a part of the survey population	
- 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>	
- to build/update the (sampling) frame (used for census or for sample survey)	IACS (areas), CDB (cattle), other livestock registers kept at the Swedish Board of Agriculture (pigs, sheep, poultry), slaughtering registers.
- to pre-fill answers in the questionnaires which are then checked by farmers during the survey	
- to impute item/unit non-response	
- to validate the survey data (quality control). <i>Please indicate actions taken in case of large discrepancies</i>	
- to calibrate of survey estimates. <i>Please indicate the calibration variables</i>	
- other (<i>please specify in the next column</i>)	

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: The register is very stable. We are able to extract data from the register in a few days after the deadline for applications. There can be some minor problems with linking the area to the correct holding. This is because we may not have details of all of the persons in each holding. In that case, we may have to start a new holding.

CDB: The register is very stable. We are able to extract data whenever we want. The holders are to inform the register within 7 days of any changes pertaining to their cattle. There can be some minor problems with linking some of the cattle to the right holding. This is because we may not have details of all of the persons in each holding. In that case, we may have to start a new holding.

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.

		Administrative source and assessment of errors <i>Please specify the name of the administrative source(s) in this column, along with information required for each row.</i>
-coverage:		
	- over-coverage <i>If the source covers more units than it should, please provide an assessment of the over-coverage rate and mention whether the out-of-scope units were excluded.</i>	IACS: There are holdings in the register that are under our thresholds. This is not a problem. CDB: There are holdings in the register that are under our thresholds. This is not a problem.
	- under-coverage <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>	IACS: newly created holdings, which belong to the 2013 target population, which did not apply for subsidies in 2013 (and thus were not included in IACS) and also were not found in the poultry-, sheep or pig registers but were above the threshold values for inclusion in the target population, were not included in the survey. The number of such holdings is estimated to be very small, as it is considered to be very rare in Sweden to have newly established holdings which do not appear in any of the mentioned registers. CDB: No under-coverage
	- misclassification <i>Please mention whether the information allows for the requested classification of units and whether there are errors in classification variables.</i>	There are no misclassifications in IACS. In CDB we have to use a model to distinguish milk cows from other cows however it is not a misclassification on the variable cows.
	- multiple listings <i>Please provide an assessment on units which</i>	There was a risk for duplicate or multiple listings in the frame. This is due to the fact that the frame consists of holdings appearing in IACS and other holdings that are not. In some cases, when creating the frame population, it was not possible to merge the two kinds of holdings.

	<i>were present more than once in the source and specify how the duplicates were eliminated.</i>	In some cases the same holding could receive two questionnaires. If so, the respondent was asked to give information about this and only to respond on one of the questionnaires. However, because of non-response and partial non-response there were still some duplicates left after the survey was conducted.
	<p>- rate of unreported events <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>	We estimate that the number of unreported events in CDB is negligible.
	<p>- missing data (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>	There are no missing data in either IACS nor CDB.
	<p>- errors in register variables (analogue to measurement errors in a survey) i.e. erroneous values for certain variables</p>	We estimate that the errors in the register variables are negligible
	<p>- processing errors. <i>Please provide an assessment. You can mention here imputation methods used, if any.</i></p>	We estimate that the processing errors are very small.
	<p>- coherence (comparison to other available data) of the administrative data (ex-ante and/or ex-post)</p>	The coherence to other data is very good.
	<p>- other drawbacks (if any) of the use of data from the administrative source. <i>Please specify the drawbacks in the next column.</i></p>	

[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

12.2. Frequency of data collection

(new) Please indicate the frequency of data collection.

Data that are collected from questionnaires are collected once, in the beginning of June. These are complemented with register-data that are collected at different points in time but reflects the situation in the beginning of June.

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.

Five different data collecting channels were used during the agricultural census – FSS 2013: paper questionnaires, web questionnaires, administrative registers, modelling, and telephone interviews.

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.

The process of data entry for the incoming paper questionnaires could be divided into 5 stages:

1. Sorting of incoming paper questionnaires (SF, SJ, L)
2. Registration of the questionnaires
3. Optical Scanning (hereafter Scanning)
4. Verifying
5. Transfer of data from the IT-system to the database.

When the questionnaires arrived at the Swedish Board of Agriculture, they were sorted by the FSS team in three different groups - one per kind of questionnaire (1). Then by scanning the barcode, each questionnaire was registered on the IT-system (2).

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 order to minimize the non-response, the following measures were taken:

Written reminders by post and by email.

During the data collection procedure three reminders were sent out to the holdings which did not provide information within the deadline for the survey (June 20th, 2013). We first send an reminder on e-mail to those holdings we had an email-adress on June 18th. The first written reminder was sent out on June 25th, the second one on July 15th, while the third one was sent out in the beginning of September 2013.

Telephone interviews/Follow up interviews

Telephone interviews were used in two different cases: to complete partly answered questionnaires and to reduce the non-response. The highest partial non-response rate was on the section of labour force and rural development of the FSS questionnaire (SF; SJ).

Telephone interviews and follow up interviews were planned in such a way as to give priority to important large holdings. About 3,0% of the holdings were telephone interviewed by the FSS staff, which was specifically trained to handle the nature of the variables but also difficult respondents.

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.	<p>Number of holdings in the population covered by the records sent to Eurostat 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 $1=3+4+5$</p>	77,527
2.	<p>Number of holdings in the gross sample The number of holdings selected from the sampling frame to be included in the sample. <i>This item should be completed only in case of a sample survey, in which case $2=3+4+5$</i></p>	25,102
3.	<p>(new) Number of ineligible holdings 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.</p>	1,693
3.1	<p>Number of holdings with ceased activities This item is a subset of 3. $3.1 \geq 3.1.1 + 3.1.2$</p>	1,104
3.1.1	<p>Number of holdings which definitively ceased i.e. the land is abandoned. This item should be completed only if information is available.</p>	
3.1.2	<p>Number of holdings with ceased activities following the change of manager This item should be completed only if information is available.</p>	
4	<p>(new) Number of holdings with unknown eligibility status 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.</p>	0
5	<p>(new) Number of eligible holdings The number of surveyed holdings which are eligible $5=5.1+5.2$</p>	23,409
	Number of non-responding holdings	

5.1	<i>The number of eligible holdings which:</i> - 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 >= 5.1.1 + 5.1.2	596
5.1.1	Number of non-responding holdings – re-weighted	
5.1.2	Number of non-responding holdings – imputed	
5.2	Number of responding holdings <i>This item includes holdings which provided completed questionnaires, either entirely or partially.</i>	22,813

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:

[Questionnaire 1](#)

[Questionnaire 2](#)

[Questionnaire 3](#)

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.

Computer checks were made of individual data on the questionnaires. Checking criteria were supplied for checking different parts of the report. These comprised:

- Completeness checks (database)
- Summation and arithmetic checks (IT-system)
- Checks of extreme values (outliers) (IT-system)
- Logic and relational checks
- Checks of unusual combinations (database)

Data, which did not meet one or more of the checking criteria, were checked manually. In many cases the identified errors could be corrected using data from the questionnaires. In some cases the respondents were contacted by telephone and in those cases also such information was asked for, which had not been completed in the questionnaires. The instructions, which were in force for the total survey process, generally permitted the data to be corrected or completed by the staff directly on PC.

12.4.b Tools used for data validation

Please mention tools used.

The software used in this part of the process was 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.

Data validation has been done at central collection centre.

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.

The extrapolation factor was calculated using Horvitz-Thompson estimation in each stratum. The extrapolation factor was N/n in each stratum.

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.

The weighing scheme was produced on the units that responded.

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.

No adjustments of weights to external data sources have been done.

12.5.a.4 Any other applied adjustment of weights

For example, extreme weights (which increase the variance of the estimates) can be trimmed.

No other adjustments of weights.

12.5.b Formulae applied for estimation methods

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

12.5.c Other relevant information (if any)

NA

12.6. Adjustment

[Not requested]

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.

NA

13.b Possible improvements in the future

Please suggest possible improvements.

After each FSS we conduct interviews with the temporary staff that we have during the FSS. They give us valuable input that we use when we plan for the next FSS. We also have something that we call "the perfect farm register", that consists of a lot of checks that we perform on the holdings to find any abnormality in the figures for each holding. We also have a continuing improvement to collect every person that works in the holding. This is important, because we use that information to connect the holding to different registers that we have.

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).

NA

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