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. Institut national des statistiques et des études économiques (STATEC), Luxembourg

Time Dimension: 2013-A0

Data Provider: LU1

Data Flow: FSS_ESQRS_A:1.0

Eurostat metadata

Reference metadata

For any question on data and metadata, please contact: EUROPEAN STATISTICAL DATA SUPPORT

Download

1. Contact

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1.1. Contact organisation	*Please provide the name of the organisation of the contact points for the data or metadata.*
	Institut national des statistiques et des études économiques (STATEC), Luxembourg
1.2. Contact organisation unit	*Please specify an addressable subdivision of an organisation.*
	ENT3 “Statistiques structurelles d’entreprises”
1.5. Contact mail address	*Please specify the postal address of the contact points for the data or metadata.*
	B.P. 304, L-2013 Luxembourg

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)*
A yearly Farm Structure Survey has been organised in Luxembourg since 1953. This survey is also used to meet the requirements of the European FSS. Until 2009 included, this survey was organised as a census with an indirect collection mode (i.e. via municipalities). As from the reference year 2010, Luxembourg organised a direct data collection to satisfy the requirements of the 2008 FSS Regulation (EC) no 1166/2008. The institutes involved in the data collection process are: - STATEC, as coordinator and collector for characteristics related to OGA, labour force, machinery and production equipment for renewable energy; - Service d'Economie Rurale (SER), as provider for administrative sources data for subsidies for surfaces and animals and via administrative registers for organic farming and rural development. Agricultural holders received STATEC questionnaires and SER application forms via mail in April 2013. Filled-in paper questionnaires were returned to STATEC from April to October 2013, web forms being used less often. Data entry of paper questionnaires was performed at STATEC in Summer using the Blaise software tool. In autumn 2013, SER's administrative sources were combined with the STATEC survey data using a common identifier to form a micro-data set validated by STATEC. Data checking was achieved in February 2014, but validation lasted to the end of 2014 due the late availability of validated SO coefficients and GPS coordinates. The final target population comprised 2 077 units. Item non-response was addressed in 2014 using mainly automated cold-deck and hot-deck imputation. The transition from national to Regulation characteristics was performed in spring 2014. On November 21, 2014, the first micro-data set established in conformity with the Regulation was transmitted to Eurostat via Edamis.

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.)	Law of July 10, 2011 organising the STATEC
- the scope and the coverage of the survey	exhaustive (cf. summary of article 12) In choosing a method of data collection, STATEC favours the use of administrative files. It only resorts to surveys or censuses if the use of administrative files is impossible or is not likely to provide reliable and relevant statistical information.
- the frequency and the reference period of the survey	annual for the reference date April 1 (12 months before for the labour and land characteristics)
- the responsibility for the survey	STATEC
- the administrative and financial provisions	A grant agreement with Eurostat has been concluded for the FSS 2013.
- the obligations of the respondents with respect to the survey	According to article 15 of STATEC's law, the statistical obligation covers the refusal to provide the requested information, the untimely provision of such information as well as the provision of inaccurate or incomplete information. The failure to comply with the obligation is liable to a fine. Paying the fine does not waive the provision of the information requested.
- the identification, protection and obligations of survey enumerators	Not applicable because the survey was organised by mail.
- the right of access to administrative data	According to article 13 of STATEC's law, all individuals or legal entities are obliged to provide the statistical information requested by STATEC within preset deadlines.

- confidentiality provisions	According to article 16 of STATEC's law, the dissemination of confidential data is forbidden and subject to criminal penalty. The definition of confidential data is in line with the Regulation (EC) 223/2009 on European Statistics.

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).

To satisfy national needs, STATEC surveyed the characteristic “succession prospects” in addition to the FSS characteristics. Furthermore, other gainful activities related or not to the agricultural holding are asked for all regular personnel types. Finally, characteristics relating to machines and renewable energy equipment are collected in a more detailed manner to avoid lengthy definitions and to allow for better quality checks. All these requests come from SER, who is the main user of FSS.

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 for the national characteristics (including land) was April 1, 2013.
Labour characteristics refer to the period of 12 months preceding the reference date and rural development characteristics refer to the 3 years period from 2011 until 2013 included.
The reference date is fully in line with the administrative source data collection.

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.

Some of the FSS characteristics have not been collected, either because they do not exist (marked as 0 in the data set), either because they are irrelevant (marked as missing in the data set) for the Luxembourg territory. Refer to the attached file for further details.

Please note that the administrative source does not separately disclose the berry and nut plantations from the fruit species but only under a single caption. Please refer to the attached file for further details.

[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:

List of NE and NS characteristics for LU FSS 2013

4.3.1. Data completeness - rate

[Not requested]

5. Accuracy and reliability

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5.1. Accuracy - overall

Main sources of error

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

The main sources of error are:
- measurement errors, in particular for machines and equipment for the production of renewable energy;
- non-response (<5%) and the related unit imputation errors;
- item imputation errors;
- asynchronous administrative sources (minor impact).

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.

not applicable

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.

not applicable

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.

Please refer to the subsections hereafter.

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 is unavoidable for demographic reasons regarding the agricultural holdings and is eliminated by reframing with the administrative data sources.

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 is possible, however, the agricultural holding has the choice not to respond to the questionnaire under the condition that it is not in the scope of survey (cf. applicable thresholds in the survey questionnaire). Any records from responding holdings which should not be in the final target population are eliminated.

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.

There were no misclassification issues.

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

Contact errors are dealt with by a research in the national register of physical and legal persons. Whenever possible, the units are recontacted with the new address. In the worst case, they are dealth with through imputation.

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 administrative data of the SER were tested for multiple listing. Multiple listing is possible because surface data were collected on viticulture by the SER for holdings that had also other surfaces and by the Institut viti-vinicole (IVV) for holdings with only vineyards. The multiple listing issues have been solved on a case by case basis.

5.3.1.f Other relevant information, if any

not applicable

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 a priori probability of over-coverage (i.e. without any reframing) is approximately 3%. However, the reframing process pushes this probability practically down to 0%. A few minor cases due to asynchronous administrative sources remain but they are as already mentioned minor in terms of the key FSS characteristics.

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 following measurement errors were detected:
- inconsistent data concerning OGA and working time ;
- (rarely) absence of machines (be it rented or owned ones) ;
- difficulty to measure equipment for production of renewable energy (methan from biomass) beyond the yes/no answer.

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

not available

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

not available

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.

Had it been for reasons of bias, unit non-response would not have needed to be accounted for (unit non-response rate being less than 5%). However, given that the Regulation requires a completely imputed micro data set in case of census data, i.e. including unit non-response, the imputation procedures had to be extended to impute the characteristics covered by the STATEC survey to entire agricultural holdings. This process was performed in 2014. The impact of this imputation was low, except for the work force characteristics.

Reasons for unit non-response

It appears that smaller agricultural holdings who receive less or no agroenvironmental funding are more likely not to respond to the survey. Another explanatory factor are holdings who are classified as specialist horticulture and specialist permanent crops - these farm types respond relatively less often to the survey than other farm types. While agro-environmental payments were found to significantly explain non-response, taking into account holding size and farm type was also important to avoid any unwanted and uncontrolled side effects during imputation.

Treatment of unit non-response

First of all, unit non-response is minimised by 2 stage reminder policy, one early on after the launch of the survey (May / June of the reference year), another one upon reception of the first set of administrative data (somewhere in autumn of the reference year). In some minor cases, big agricultural holdings are contacted by telephone to encourage response. Once unit non-response remains confirmed, the fall-back strategy is imputation. Re-weighting is not an eligible strategy because of the census type survey.

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.

Identification of item non-response

The questionnaire design has been optimised since 2011 to minimise the item non-response and in the worst case to at least identify item non-response. For example, before asking about the various types of available equipment for the production of renewable energy, a yes/no question would capture whether or not there are any such equipments. A non-response on this question or yes-answer on this question without any subsequent answers would trigger item non-response analysis.

Reasons for item non-response

Item non-response by agricultural holdings is by far less common. The sections typically burdened by such problems are machinery and equipment for the production of renewable energy.

Another rare form of item non-response are responses invalidated by STATEC due to internal inconsistencies. Such responses would then be set to missing and imputed by the relevant strategy.

Treatment of item non-response

At the stage of data entry, we distinguished between two scenarios:

1) the questionnaire was insufficiently filled out for an agricultural holding in the target population: we contacted the agricultural holding either by phone or by mail to request the remaining information ;

2) the questionnaire contained a few minor item non-responses. If the missing item was a structural characteristic (e.g. legal status, holding manager, etc.) and the prior year questionnaire was available, the information was directly manually imputed. This procedure was not performed for characteristics that are likely to change every year (e.g. labour force, other gainful activities, machinery, etc.).

After that, imputation procedures serve as fall-back strategy.

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).

4.53%

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.

For FSS 2013, item non-response which had to be dealt with by imputation was close to 0% for almost all variables.

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.

As for any survey of this kind, there are a multitude of processing error sources, such as e.g. data entry errors for paper questionnaires, double counting due simultaneous reception of paper questionnaire and web form data for a given holding, non-respect of the questionnaire routing or inconsistencies between the questionnaire sections. etc. Most of the these sources are either addressed by application controls or ex-post validation rules.

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.

Refer to 5.3.3 and 5.3.4.c for imputations.

At several pre-defined spots, the production process contains a few working areas which allow to correct or adjust the data.

5.3.4.c Imputation methods

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

The non-response strata

The strata were defined so that they would best explain non-response. Various combinations of variables available in administrative sources, provided by SER and thus for all agricultural holdings in the target population, were tested against unit non-response using the logit classifier.
Consequently, based on our analysis conducted in 2010 and reconfirmed in 2013, the strata defined on the basis of the following ancillary information were found to sufficiently explain unit non-response:
- UAA size class: less than 10 ha, at least 10 ha ;
- 1st digit of the farm type code in reference to the typology defined in Commission Regulation (EC) No 1242/2008 ;
- agro-environmental payments (rural development support): yes, no.
The strata were used both for item non-response and then for unit non-response.

The imputation strategies for unit non-response
Item non-response was addressed before unit non-response. At the stage of data production, we used automated rules to impute:
Cold-deck imputation was used for labour force and related characteristics. The cold-deck contained fresh 2012 survey data. Data available in 2012 were then directly imputed without any other adjustment for a given agricultural holding. This imputation procedure concerned 3% of the target population in terms of number of units ;
A few characteristics required deductive imputation in case of item non-response. These were mainly the characteristics related to the manager in case of group holdings and legal persons but also for some national characteristics.
Random hot-deck imputation was performed by predefined strata. The procedure was used for all characteristics other than those imputed by hot-deck or deductive imputation.

The imputation strategies for item non-response
Item non-response was addressed before unit not response.
A few characteristics required deductive imputation in case of item non-response. These were mainly the characteristics related to the manager in case of group holdings and legal persons but also for some national characteristics.
Random hot-deck imputation was performed by predefined strata. The procedure is used for any characteristics for which there is no prior year data and no deductive imputation strategy.

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

Corrections on the sole survey data are performed by the statistical analysts at STATEC. Corrections on the administrative sources are ideally dealt with at SER - in the worst case, the survey manager is the only person who is authorised to implement other corrections where deemed necessary. Whenever possible, imputations are dealt with automatically (using statistical software SPSS and Stata) and not manually.

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.

Refer to 5.3.3.2

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.

not applicable

5.3.6. Data revision

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5.3.6.1. Data revision - policy

Brief description of the revision policy

Generally, STATEC performs revisions when receiving packages of administrative data from the SER or in case of major errors detected in the STATEC survey.

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.

Revisions are a matter of definition. We produce at least 2 versions of data each year, one preliminary and one final. Only the final version is fully published, whereas the preliminary serves as input for preliminary economic agricultural accounts.

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

See below

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.

No publication of first results. However, t+7 months is feasible for use as input in preliminary economical agricultural accounts.

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.

Generally, t+11 months for annual national data collections. However, for "European years" (e.g. 2010, 2013), t+23 months given the many additional characteristics as well as the GPS and SO data.

6.2. Punctuality

See below

6.2.1. Punctuality - delivery and publication

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

No official national schedule.
Data were transmitted to Eurostat in late November 2014, with a finally validated data set transmitted in early February 2015.

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.

On-line tables and metadata are the main publication channel. Occasionally, a detailed written publication (including metadata) is published. Short publications (4 pages max) are currently in development.

7.2.b Date of issuing (actual or planned)

Refer to 6.1 regarding availability of data.

7.2.c References for on-line publications.

Tables:
http://www.statistiques.public.lu/stat/ReportFolders/ReportFolder.aspx?IF_Language=eng&MainTheme=4&FldrName=2&RFPath=7274
Metadata and publications:
http://www.statistiques.public.lu/en/methodology/methodes/enterprises/Agriculture/agriculture/index.html

7.3. Dissemination format - online database

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

http://www.statistiques.public.lu/stat/ReportFolders/ReportFolder.aspx?IF_Language=eng&MainTheme=4&FldrName=2&RFPath=7274

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.

approx. 3 000 consultations during the 12 month period March 2014 to February 2015.

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.

http://www.statistiques.public.lu/en/methodology/methodes/enterprises/Agriculture/agriculture/index.html

7.5.b Main scientific references
Please provide references.

not applicable

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.

http://www.statistiques.public.lu/en/methodology/methodes/enterprises/Agriculture/agriculture/index.html

7.7. Dissemination format - other

[*Not requested*]

8. Comparability

Top

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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.

As stated in section 12.1.a.1, there are no differences in definition in terms of the agricultural activities undertaken by the agricultural holdings.

Since FSS 2010, the threshold differences are the following:

- the cut-off threshold of 3 hectares of utilised agricultural area differs from the 1 hectare threshold;
- the physical cut-off thresholds are less strict in the national survey than in the Regulation.

The national threshold combined with the physical thresholds are sufficient to account for at least 98% of LSU and UAA and it was therefore decided in 2010 to use the threshold of 3 hectares instead of 1.

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.

no difference

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 characteristics that have been surveyed and their definitions are in general those of the Regulation No 1166/2008 of the European Parliament and the Council of the 19th November 2008, as they are specified in the Handbook implementing the definitions of the FSS without distinction between the data obtained via SER from administrative sources or the data obtained directly from the survey.

For reasons of consistency with economic accounts of agriculture in Luxembourg, the definition of the Annual Work Unit (AWU) is, as in 2010, defined as follows: “a person is considered working full-time with an average of 8 hours a day during 275 days (2 200 hours a year). Persons with less than 15 years or with more than 80 years are excluded. Persons aged between 15 and 18 years as well as persons aged at least 65 years declared as full-time working in the survey have been transformed into part-time working using fixed coefficients, which is in line with national economic accounts of agriculture recommendations.

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.

Though existing in the Middle Ages, common land has disappeared in Luxembourg due to a specific evolution of agricultural laws.

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.

not applicable

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.

The coordinates have been determined on the basis of the address register obtained from the cadastral administration. In cases where the address from this register differs from the localization of the holding's stables, the coordinates of the stables have been taken.

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 coordinates are transmitted to EUROSTAT in the reference system WGS 84 (Decimal-Degrees)

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).

For the rounding procedure, a GIS program working with coordinates in the European Terrestrial Reference System WGS84 (Decimal Degrees) is used.
The grouping of coordinates is done by drawing a 5x5' (0.0833°) grid on the NUTS 3 region representing Luxembourg.

For every grid cell a centroid is defined under the condition that it is assigned to the part of the grid cell belonging to the same NUTS 3 region as the holdings inside that cell. In the case of Luxembourg, this condition only applies to the grid cells on the border of the country, which partly cover Luxembourg and a neighbouring country at the same time.
A geo-reference (longitude, latitude) is assigned to every centroid. For each holding, the geo-reference (longitude, latitude) of the centroid of the grid cell that it is belonging to is assigned to the holding.
In case there is only a single holding inside a grid cell, the said holding is moved to the closest neighbouring grid cell in order to avoid assigning a sole geo-reference to one single holding.

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).

not applicable because of the single NUTS3 region for Luxembourg

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).

An agricultural holding in Luxembourg cannot be partially organic. Either it is certified for all its surfaces or under certification for all its surfaces.

[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.

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.

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.

No changes

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.

Not applicable

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.

Not applicable

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

Not applicable

8.2.f Major trends on the main characteristics compared with the previous sample survey/census data
Please complete the following table. Comments must be given in case there is a change of more than 10% in the current FSS survey compared with the previous one for any numeric main characteristic.
This comparison concerns the population covered by the records sent to Eurostat.

Main characteristic	Current FSS survey	Previous FSS survey	Difference in %	Comments
Number of holdings	2077	2201	-5.63	
UAA (A_3_1), ha	131 043	131 106	-0.05	
Arable land, ha	62 527	61 951	+0.93	
Permanent grassland (B_3), ha	66 897	67 593	-1.03	
Permanent crops (B_4), ha	1 532	1 503	+1.93	
Wooded area (B_5_2), ha	5 898	6 029	-2.17	
Unutilised Agricultural area (B_5_1), ha	323	339	-4.72	
Fallow land (B_1_12_1 + B_1_12_2), ha	157	139	12.95	minor
LSU	165 398	167 662	-1.35	
Cattle (C_2), head	193 623	198 830	-2.62	
Family Labour force, persons	3 814	4 177	-8.69	in line with the decrease of the number of holdings
Family Labour force, AWU	2 403	2797	-14.08	in line with the decrease of the number of holdings
Non family labour force, persons	1 156	884	30.77	in line with recent historical evolution
Non family labour force, AWU	964	752	28.19	in line with recent historical evolution

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

There are no comparisons with other data at this level of agregation.

8.3.b Comparisons at macro level

At the macro level, only the equipment for the production of renewable energy (i.e. installed production capacity) was subject to a comparison with administrative data available on the country level. The evolution of the data are in line.
Most comparisons are done with prior survey data.

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 data are reconcilable with other data sources. However, due to multiple identifier types existing in the various sources, the micro-data linking through such identifiers is not always possible or flawless.
However, perfect reconciliation is possible with administrative sources obtained through SER due to the use of a common identifier.

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.

The survey questionnaire was sent by STATEC at the same time as the subsidy application package sent by the SER. The idea is to avoid agricultural holdings having to delve twice into their reporting systems and thus accelerating the response. Moreover, the questionnaires are specialised such that double counting of characteristics is practically minimised.
For the 2013 reference year, we asked the agricultural holdings how long it took them to complete the questionnaire. 1820 holdings responded to this question, 80% of the respondents spent between 5 and 30 minutes to respond to the survey questionnaire, the average time being 16 minutes. This duration excludes any post-collection procedures (e.g. phone calls, etc.).

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.

No micro-data dissemination.

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).

Tabular data are protected using the following approaches:
- table design: very detailed tables are avoided (e.g. data published by municipality) unless the data is not confidential (e.g. number of agricultural holdings, total UAA, etc.). On a national level, almost any data (i.e. low occurrence variables) can be published. Problems arise with national data broken down by one or more spanning variables (farm type, size class, municipality, etc.). The table design usually results in a compromise between relevance and confidentiality;
- cell suppression: any cell that contains confidential data according to a sensitivity rule (n,k) or a minimum frequency rule are suppressed due to primary confidentiality. Any cell that is needed to protect one or more primary confidential cells are suppressed due to secondary confidentiality. In practice, suppression comes down to aggregation for one-dimensional tables and to flagged cells for multi-dimensional tables – linked tables are also accounted for. To guarantee the proper protection of tabular data, the exact parameters used to apply the above rules are kept confidential. Calculations are performed with tau-Argus and verified ex-post.

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:*	The organisation of the survey 2013 started at the end of November 2012 with a user consultation (coordinated by SER) in order to update the questionnaire. These discussions ended in January 2013. The printed questionnaires were available in the end of March 2013. SER managed the data collection of surfaces, animals, organic farming and rural development. Surface and animal figures proceed from the application forms for subsidies, which were sent to all agricultural holdings. Data on organic farming exist in the Organic farming register and data on rural development are provided by the Ministry of Agriculture MAFEA database (payments supporting rural development). These data were merged and made available to STATEC as an administrative source to minimise the statistical burden on agricultural holdings. Consequently, STATEC covered the characteristics related to other gainful activities, labour force, machinery and equipment for the production of renewable energy through the census. In the mid of April 2013, the agricultural holders received the STATEC survey questionnaire (reference date April 1, 2013) at the

2.1. set-up organisation of the survey (e.g. detailed timetable, specification of resources, costs estimation); *2.2. definition of the survey variables;* *2.3. design of the sampling frame and sampling procedures;* *2.4. design of data collection procedures (e.g. questionnaire design, selection of data collection modes etc.);* *2.5. design of data processing procedures (e.g. CATI/CAPI/CAWI input programmes etc.);* *2.6. pilot survey organisation and execution.* *3. data collection:* *3.1. sampling frame construction and sample selection;* *3.2. recruitment of interviewers;* *3.3. training of interviewers;* *3.4. fieldwork;* *3.5. evaluation and assessment of fieldwork.* *4. data processing and validation:* *4.1.data entry and data coding:* *4.2. data validation (at record level);* *4.3. data correction and imputation.* *5. data compilation:* *5.1. weight calculation and estimation;* *5.2. calculation of derived variables;* *5.3. calculation of quality indicators (e.g. non-response rates, relative standard errors, coverage errors, bias etc.);* *5.4. aggregation and tabulation;* *5.5. validation of aggregated data.* *6. data analysis* *7. data dissemination*	same time as the SER application forms for subsidies (reference date April 1, 2013). The web forms were ready to use before the paper questionnaires were sent. The survey questionnaires were sent back by the agricultural holdings to STATEC during the period covering April until September 2013. Data entry of survey questionnaires was done by STATEC staff as from July 2013 onwards using the BLAISE software tool for managing survey forms. In autumn 2013, the administrative sources obtained through SER were combined with the survey data using an official common identifier to form a combined micro data set. Micro data validation was performed at STATEC to check the accuracy and plausibility of both the survey and the administrative data. Analysis was also performed at a national aggregate level with historical data. Moreover, SER assisted the data validation by providing feedback on the aggregated data at national level for the purpose of the production of economic accounts of agriculture. While data entry was achieved in the end of 2013, the data validation process was only completed by the end of the year 2014, this delay being caused by the late availability of the validated standard output (SO) coefficients and the complete GPS coordinates. The final target population comprised 2 077 agricultural holdings for the reference year 2013 defined in conformity with the Regulation and was obtained from the database of agricultural holdings managed by SER. Item non-response was addressed using cold-deck imputation, hot-deck imputation and, to a minor extent, ratio imputation as well as deductive imputation – the type of imputation applied depended on the nature of the variables to be imputed. Imputation was also extended to unit non-response for regulatory reasons. Meanwhile, the transmission format, i.e. the conversion program of national variables into the characteristics defined in the Regulation was updated in spring 2014. On November 21, 2014, the first batch of micro data established in conformity with the farm structure characteristics (including rural development) defined in the Regulation was transmitted to Eurostat via the Edamis platform. Data were validated by Eurostat by the end of February 2015. At the moment of finalising this report, national data dissemination was still work-in-progress.
12.b The bodies involved and the split of responsabilies among bodies with respect to the main steps of the survey process	The actors involved in the survey organisation are: - STATEC as a coordinator to ensure the achievement of the data collection and in charge of the survey; - SER as the data provider for administrative sources and the national producer of economic accounts of agriculture. Technically, each actor is only responsible for the variables under their respective supervision. Nonetheless, the cooperation and coordination goes beyond the data collection. Both actors meet regularly every year.
	For several reasons, the production of 2013 farm structure micro data got delayed but was still transmitted to Eurostat before the official deadline: - The validated standard output (SO) coefficients were not available

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.*	earlier; - GPS coordinates were incomplete before September 2014; - 2013 reference year data collection saw the rise of some serious item non-response issues, in particular labour force related variables (e.g. other gainful activities dimension) and renewable energy related variables. To deal with the item non-response, automated imputation procedures have been performed; - The annual survey for 2014 had to be organised to satisfy the yearly needs of economic accounts of agriculture produced by SER. Therefore, the resources could not be all allocated to the completion of the 2013 data collection.

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.

There are no differences between the national and the EU definition in terms of activities. As already mentioned in section 8.1.a, there are differences in terms of physical thresholds. If the land thresholds are not fulfilled, the legal definition implies that an agricultural holding also encompasses farms who own at least 10 horses / donkeys or 10 bovines or 20 sheep or 20 goats or 50 pigs or 1 000 laying hens or 1 000 other poultry or 1 000 rabbits or 50 bee hives.
Excerpts in French from the modified law as of April 18, 2008 on the revision of rural development support.
(1) Au sens de la présente loi, la notion d'exploitant agricole couvre l'ensemble des activités des agriculteurs, viticulteurs, éleveurs, arboriculteurs, horticulteurs, pépiniéristes, jardiniers, maraîchers, pisciculteurs, sylviculteurs et apiculteurs.
(2) Par exploitation agricole, on entend une unité technico-économique à caractère agricole gérée distinctement de toute autre, disposant d'un ensemble de moyens humains et matériels, et comprenant en propriété ou ayant à sa disposition permanente, notamment par voie de location, tous les moyens de production nécessaires permettant d'en assurer une gestion indépendante, dont notamment les bâtiments, les machines et les équipements et exploitant au minimum 3 hectares de terres agricoles ou 0,10 hectare de vignobles ou 0,50 hectare de pépinières ou 0,30 hectare de vergers ou 0,25 hectare de maraîchages.
(3) Par association d'exploitations agricoles, on entend la fusion de deux ou plusieurs exploitations agricoles.
Un règlement grand-ducal fixe les conditions auxquelles doit répondre l'association d'exploitations agricoles et notamment:
- la forme juridique;
- la durée minimale;
- la formation du capital social;
- le statut des membres de l'association;
- la participation des membres à la gestion;
- l'âge maximum des membres au moment de la constitution.
(4) Par entreprise, au sens de la présente loi, on entend un ensemble de moyens humains et matériels concourant, sous une direction économique, à la réalisation d'un objectif économique."

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.

The final list of agricultural holdings provided by SER and used by STATEC as a basis to determine the target population contained 2 237 registered agricultural holdings with a total utilised agricultural area (total UAA) of 131 128 hectares.

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 questionnaire was sent to all the agricultural holdings which were on the list communicated by SER in March 2013.
Not all agricultural holdings in that list are considered to be agricultural holdings as specified by the Regulation definition. Only those agricultural holdings which met any of the following criteria at the reference date were obliged to respond to the survey:
- at least 3 hectares of utilised agricultural area, i.e. arable land, permanent grass land, permanent crops, kitchen gardens;
- at least 0.25 hectares of fresh vegetables, melons and strawberries, flowers and ornamental plants or at least 0.30 hectares of fruit and berry plantations or at least 0.50 hectares of nurseries;
- at least 0.10 hectares of vineyards;
- at least 10 horses/donkeys or 10 bovines or 20 sheep or 20 goats or 50 pigs or 1 000 laying hens or 1 000 other poultry or 1 000 rabbits or 50 bee hives.

Holdings with less than 3 hectares of utilised agricultural area don't have to answer if they hold woods or bushes or if they keep riding horses or fatten pigs for their own consumption or cultivate vegetables, strawberries and so forth for their own consumption, unless they exceed any of the above thresholds.
The survey is carried through at the headquarters of the holding. It is considered that the whole surface of the agricultural holding resides in the municipality where the headquarters are located, even if the surfaces are all in another municipality or outside the national borders. This is also true concerning geolocalisation.
Surfaces on lease are not indicated by the owner but by the tenant.

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

The final target population comprised 2 077 agricultural holdings for the reference year 2013 defined in conformity with the Regulation.

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 difference.

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*).

No difference.

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.

No such records.

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 target population (2 077 agricultural holdings) as defined by national criteria represents 99.94% of total UAA and 99.87% of total LSU.

12.1.b Source of data

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

The survey design was based on a census data collection based on a survey conducted by STATEC for the characteristics related to other gainful activities, labour force, machinery and equipment for the production of renewable energy, complemented with administrative data from SER on the rest of the characteristics.

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.

Agricultural holdings were based on the database of agricultural holdings managed by SER.

12.1.c.2 Type of frame
Please specify whether it is a list frame or an area frame, whether you used a combination of multiple frames etc.

The type of frame was a list with administrative source data.

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

The initial frame referred to March 2013. The time frame of the administrative source data collection was April 2013. Updated frames for FSS 2013 were provided in November 2013 and January 2014.

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.

Not applicable

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.

Not applicable

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.

Not applicable

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.

Not applicable

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.

Not applicable

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).

Not applicable

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.

Not applicable

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.

Not applicable

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

Not applicable

12.1.d.10 other relevant information, if any

Not applicable

12.1.e Use of administrative data sources

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

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

The characteristics of the sections A_2, D, E, and F as well as characteristic A_3_3_2 of the FSS have been obtained directly from the holders whereas the characteristics of the remainder of section A and of the sections B, C and G were taken from administrative sources. The administrative data were gathered by the SER and provided to the STATEC.
The administrative data sources used are the following:
- Integrated administration and control system (IACS);
- Bovine register (SANITEL);
- Data base of the Ministry of agriculture on the payments made to farmers and other beneficiaries eligible for FEAGA or FEADER (MAFEA);
- Organic farming register.

Legal base
IACS
EU-legislation: regulation (EC) 73/2009, chapter 4;
National legislation: Règlement grand-ducal du 25 novembre 2011 portant application, au Grand-Duché de Luxembourg, du régime de paiement unique, de la conditionnalité et du système intégré de gestion et de contrôle dans le cadre de la politique agricole commune.
SANITEL
EU-legislation: regulation (EC) 820/97;
National legislation: Règlement grand-ducal du 22 avril 1999 portant mesures d'application du règlement (CE) 820/97.
MAFEA
EU-legislation: regulation (EC) 1290/2005;
National legislation: Règlement grand-ducal du 25 novembre 2011 portant application, au Grand-Duché de Luxembourg, du régime de paiement unique, de la conditionnalité et du système intégré de gestion et de contrôle dans le cadre de la

politique agricole commune.
This data base is fully integrated with the IACS data base.
Organic farming register
EU-legislation: regulation (EC) 834/2007.
Time reference and updating of the source
IACS
Time reference: crop year for crop productions, 1st April 2013 for livestock.
Please note that the crop year is the 12 months period covering the whole cultivation period (from seed to harvest) of the main arable crops cultivated in Luxembourg. It lasts from September 1, T to August 31, T+1. As the crop year goes over 2 civil years, by convention the year under which the information is stored in IACS is the year of harvest.;
Updating of the source: annually.
SANITEL
SANITEL is a permanently updated database. The bovine livestock can be derived from SANITEL at any date.
MAFEA
Time reference: an extraction of the payments made to farmers can be derived from MAFEA. For FSS, it is checked whether there was a payment or not in for at least one of the 3 preceding harvest years;
Updating of the source: permanent.
Organic farming register
This register is permanently updated and is fully compatible with IACS (same identification of the units). The information on the status of the holdings concerning organic farming at a reference day (1st of April) is uploaded in IACS yearly. The register of agricultural holdings certified or under certification in organic farming is managed by the Administration des Services Techniques de l'Agriculture (ASTA), an administration of the Ministry of agriculture.

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.

Definition of the reporting unit (holding):
IACS: see article 2 of regulation (EC) 73/2009 for the said definition.
SANITEL: holder of bovine animals. A link with the reporting unit in IACS (agricultural holding) exists. Regular exchange of information and permanent mutual updating between IACS and SANITEL concerning the list of reporting units (holding/holder).
MAFEA: This register is permanently updated and is fully compatible with IACS (same identification of the units). See article 2 of regulation (EC) 73/2009.
Organic farming register: This register is permanently updated and is fully compatible with IACS (same identification of the units). See article 2 of regulation (EC) 73/2009.

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

Purpose	**Administrative source** *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).*
- to totally replace the survey, on all characteristics and on the whole survey population	not applicable
- to replace the survey on some of the characteristics and on the whole survey population. *Please indicate these (groups of) characteristics, the common identifiers and the method(s) of integration (record linkage algorithm).*	Admin sources: IACS, SANITEL, MAFEA, Organic farming register Groups of characteristics replaced: surfaces, livestock, rural development (payments made to agricultural holdings), organic farming, geolocalisation, farm type; Common identifiers: the same across all sources; Record linkage algorithm: not applicable because matching was performed using the common identifier.
- to replace the survey on all characteristics and on a	

part of the survey population	not applicable
- to replace the survey on some of the characteristics and on a part of the survey population. *Please indicate these (groups of) characteristics, the common identifiers and the method(s) of integration (record linkage algorithm).*	not applicable
- to build/update the (sampling) frame (used for census or for sample survey)	not applicable
- to pre-fill answers in the questionnaires which are then checked by farmers during the survey	not applicable
- to impute item/unit non-response	IACS, SANITEL
- to validate the survey data (quality control). *Please indicate actions taken in case of large discrepancies*	only the cross-checks foreseen in the Eurostat micro-validation programme. Some data on equipment for the production of renewable energy have been validated using administrative data (refer to 8.3.b).
- to calibrate of survey estimates. *Please indicate the calibration variables*	not applicable
- other (*please specify in the next column*)	not applicable

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

Concepts/definitions

There are no differences in the definition of the characteristics between administrative source and FSS as the statistical division of SER is involved in the preparation of the data collection process from the beginning on. The definition of the unit (agricultural holding) in IACS corresponds to the definition of the statistical unit in FSS.

Population coverage, completeness

The register of agricultural holdings of the Ministry of Agriculture is complete for all holdings applying for payments within CAP or which have to be officially registered at the Ministry of Agriculture following the EU and national legislation (for example bovine register, food safety, animal welfare, ….). Not all the units of the population to be covered by FSS apply for payments within CAP and thus no IACS data are available for these units. The units not covered are addressed with a special questionnaire containing the characteristics needed from IACS.

SANITEL

Concepts/definitions

Definition of the characteristics

The characteristics requested in FSS are calculated/deducted from the characteristics registered in SANITEL per individual animal (date of birth, sex, age of first calving, date of slaughtering, etc).

Definition of the unit

In SANITEL, the reporting unit is the holder of the animals. A permanent mutual updating between IACS and SANITEL concerning the list of reporting units (holding/holder) exists.

Population coverage, completeness

SANITEL covers all units holding bovine animals.

MAFEA

Concepts/definitions

There are no differences in the definition of the characteristics between administrative source and FSS as the statistical division of SER is involved in the preparation of the data collection process from the beginning on. The definition of the unit (agricultural holding) in MAFEA corresponds to the definition of the statistical unit in FSS.

Population coverage, completeness

The register of agricultural holdings of the Ministry of Agriculture is complete for all holdings applying for payments within CAP or which have to be officially registered at the Ministry of Agriculture following the EU and national legislation (for example bovine register, food safety, animal welfare, ….). Not all the units of the population to be covered by FSS apply for payments within CAP and thus no MAFEA data are available for these units.

Organic farming register

Concepts/definitions

A list of organic farms is extracted from this register. For the units within the scope of FSS, all the characteristics from other administrative sources and survey results are considered as “organic”. This is possible because in Luxembourg, a holding only can be 100% organic or not at all. There are no holdings with a partial organic production.

Population coverage, completeness

This register also covers farms that don’t belong to the scope of FSS, so there is over-coverage. The units not covered by FSS are ignored.

12.1.e.5Quality 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 *Please specify the name of the administrative source(s) in this column, along with information required for each row.*
-coverage:		
	- over-coverage *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.*	**SANITEL** covers all units holding bovine animals. The out-of-scope units are excluded. **Organic farming register.** The register covers all organic units. The out-of-scope units are excluded. **IACS and MAFEA.** Due to the application of the thresholds in FSS, there is overcoverage. However, any out-of-scope units are excluded.
	- under-coverage *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.*	**IACS and MAFEA.** Not all the units of the population to be covered by FSS apply for payments within CAP and thus there is under-coverage. The units not covered are addressed with a special questionnaire containing the characteristics needed from IACS. **SANITEL and Organic farming register.** No undercoverage.
	- misclassification *Please mention whether the information allows*	

	for the requested classification of units and whether there are errors in classification variables.	no such issue
	- multiple listings *Please provide an assessment on units which were present more than once in the source and specify how the duplicates were eliminated.*	Normally no such duplicates due to a common identifier.
	- rate of unreported events *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.*	Rate of unreported events in **SANITEL** (bovines): It is excluded that events concerning live bovine animals are not reported to SANITEL. At the end of life (slaughterhouse , rendering plant) or at the export of each animal the official documents (passport, ear tags) are subject to official controls and in case of missing documents, the different events in the life of the animal are retraced. Sanctions are applied, for instance through cross compliance applicable to the direct aids of the common agricultural policy, to the holder of the animal in case of missing official documents
- missing data (analogue to item and unit non-response errors in a survey).*Please provide an assessment of missing data, specify for which characteristics and how it was accounted for (e.g. by imputation).*		None
- errors in register variables (analogue to measurement errors in a survey) i.e. erroneous values for certain variables		SER is contacted by STATEC to deal with the detected issues (if any).
- **processing errors.** *Please provide an assessment. You can mention here imputation methods used, if any.*		None detected
- **coherence** (comparison to other available data) of the administrative data (ex-ante and/or ex-post)		Only historical comparisons. No major issues.
- other drawbacks (if any) of the use of data from the administrative source. *Please specify the drawbacks in the next column.*		no other drawbacks

[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.
annual

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.

Mixed-mode: choice to respond via paper questionnaire (90%) or web questionnaire (10% of the target population)

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.

For the survey characteristics covered by STATEC, the software Blaise was used for this task. Some application controls were configured. However, most data accuracy and plausibility tests were only performed and documented after data entry.
Electronic data for web questionnaires (roughly 10% of the target population).

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.

The following measures were initially planned to increase response rates:
- The survey questionnaire was sent by STATEC at the same time as the subsidy application package was sent by SER. The plan was to avoid agricultural holdings having to delve twice into their reporting systems and thus accelerating the response.
- Reminders were managed by STATEC for the reference year 2013. While unit non-response was acceptable, there were a significant number of blanks for some questions and of farmers who taught wrongly not to be part of the target population. Consequently, a late reminder had to be sent out by STATEC to agricultural holdings in November 2013 to improve the response rate on these characteristics. In the end, no legal actions were taken, as the unit non-response was only 4.53%.
No special priority was given to important agricultural holdings. However, non responding agricultural holdings identified as being part of the final target population were subject to a dedicated final reminder in November 2013.

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.	**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**	2077 holdings in the (target) population covered by the records sent to Eurostat 2226 holdings in the survey frame
2.	**Number of holdings in the gross sample** *The number of holdings selected from the sampling frame to be included in the sample.* *This item should be completed only in case of a sample survey, in which case* **2=3+4+5**	not applicable
3.	(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.*	36 who responded fully to the questionnaire despite being out-of-scope according to administrative filings 113 who responded "No" on the question whether they are in the survey scope
3.1	**Number of holdings with ceased activities** *This item is a subset of* ***3****.* **3.1>=3.1.1+3.1.2**	unavailable
3.1.1	**Number of holdings which definitively ceased i.e. the land is abandoned.** *This item should be completed only if information is available.*	unavailable
3.1.2	**Number of holdings with ceased activities following the change of manager** *This item should be completed only if information is available.*	unavailable
4	(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.*	0
5	(new) **Number of eligible holdings** *The number of surveyed holdings which are eligible* ***5=5.1+5.2***	2077
	Number of non-responding holdings *The number of eligible holdings which:* *- were contacted but refused to take part in the survey;*	

5.1	*- 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**	94
5.1.1	**Number of non-responding holdings – re-weighted**	not applicable
5.1.2	**Number of non-responding holdings – imputed**	94
5.2	**Number of responding holdings** *This item includes holdings which provided completed questionnaires, either entirely or partially.*	1983 (excluding the 36 units who are out-of-scope and who responded with the full questionnaire)

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.

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[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:

German questionnaire for FSS 2013 (excluding characteristics covered by admin sources)
French questionnaire for FSS 2013 (excluding characteristics covered by admin sources)

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.

The questionnaires are first checked manually to find the missing items and obvious errors in order to complete and correct the answers even before entering the data. The comparison with the prior year begins here. At this stage, the questionnaires are made ready for coding. Moreover, it is decided whether or not the questionnaire can be accepted as such. Sometimes, a high item non-response causes the survey manager to get back to the agricultural holding for further information.

As far as web forms are considered, tests were integrated in them to make impossible missing, inaccurate or implausible items as far as possible. The results of web forms were moved to an excel file and checked manually.

The second set of checks occurs when coding the data into Blaise. The checks are implemented as application controls. The software reacts with dialogue windows if it finds any missing, inaccurate or implausible items; alternative coding possibilities are sometimes suggested. Moreover, some items only allow a fixed list of responses (e.g. single or multiple choice, yes/no, etc.). For numeric figures, the number of digits may be limited by a lower and/or upper bound or checked for out-of-plausible-range items. Blaise is also suited for internal consistency checks, but in order not to render the 2013 coding too burdensome, these checks were performed ex-post, i.e. after the coding stage. Typically, the tests are written using statistics software syntax (e.g. SPSS).

As the survey FSS data did not include any surface and animal figures, arithmetic checks and ratio edits were not necessary when entering the data, but the administrative data (i.e. surfaces and animals) were checked for arithmetic, ratio and coherence issues at the integration with the survey data of the STATEC.

Same as above, the tests were written in statistical software.

12.4.b Tools used for data validation

Please mention tools used.

Application controls in Blaise.
The Eurostat validation programme for micro-data was implemented using SPSS.

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.

Survey data were directly handled by STATEC. Admin data were handled by SER. The data integration as well as any data processing thereafter was performed by STATEC.

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.

Not applicable

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.

Not applicable

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.

Not applicable

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

Not applicable

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)

Not applicable

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.

n.a.

13.b Possible improvements in the future

Please suggest possible improvements.

n.a.

13.c Other annexes

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

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

n.a.

Related metadata

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Annexes

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