

Single Integrated Metadata Structure (SIMS v2.0)

(User oriented)

Country: **Greece**

Compiling agency: **ELSTAT**

Domain name: **FSS 2016**

ELSTAT metadata

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3.1 Data description

The Farm Structure Survey (FSS) is a wide range, periodic statistical survey carried out in two forms:

- A basic survey (Agricultural-Livestock Census), conducted every ten years
- A sample survey conducted on a two-year basis till 2010 and on a three-year basis since, in the period between Agricultural-Livestock Censuses.

Census surveys were carried out in the years: 1921, 1929, 1950, 1961 and every 10 years since. Sample surveys were carried out in: 1966/67, 1977/1978, 1983 and since then, every 2 years until 2010. From 2010 onward the sample survey is carried out every 3 years.

The purpose of the FSS is to determine the basic structural features of the agricultural and livestock holdings in Greece. Data are collected, according to Community legislation, on:

- General characteristics
- Utilized agricultural area
- Livestock
- Variables of special interest, such as labour force, rural development issues, management and cultivation methods.

The development of the agricultural holdings' structure constitutes the main element upon which the National and Community policies in the Agricultural Sector are based.

The unit of the survey is the agricultural and/or livestock holding. The sampling frame, which was used for the 2016 FSS, was the updated Register of Agricultural and Livestock Holdings compiled by ELSTAT. The sampling method used is the single random stratified sampling, according to a stratification scheme based on the Regional Unit, the Typology and the Economic size, expressed through the Standard Output, of the holdings. The sample represents about 12% of the target population.

Aggregated data are tabulated and published online at the NUTS 1 (Large Geographical Area), NUTS 2 (Region) and NUTS 3 (Regional Unit) level.

3.2 Classification system

The typology of the FSS consists of a harmonized classification of the holdings all over the European Union. This classification is based on the type of farming activity and the economic size of the holding. These two factors are determined on the basis of the Standard Output (SO), the average monetary value of the agricultural output at farm-gate price.

Analytical information on the typology can be found in the following Community legislation:

- Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No 571/88.
- Regulation (EC) No 1242/2008 of 8 December 2008 establishing a Community typology for agricultural holdings.
- Commission Regulation (EC) No 1200/2009 of 30 November 2009 implementing Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on

agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

- Regulation (EU) No 715/2014 of 26 June 2014 amending Annex III to Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards the list of characteristics to be collected in the farm structure survey 2016
- Regulation (EC) 2015/1391 of 13 August 2015 amending Regulation (EC) No. 1200/2009 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.
- Typology Handbook, RI/CC rev.3, 5/10/2009.
- Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS).
- Commission Regulation (EU) No 1319/2013 of 9 December 2013 amending annexes to Regulation (EC) No 1059/2003 of the European Parliament and of the Council on the establishment of a common classification of territorial units for statistics (NUTS).

3.3 Sector coverage

The 2016 FSS was conducted in all the Regional Units (NUTS 3) of Greece and it covers at least 98% of the agricultural activity of the Country. The remaining 2% corresponds to very small agricultural holdings that, according to Regulation (EC) 1166/2008, are beyond the scope of the survey.

3.4 Statistical concepts and definitions

The main purpose of the FSS is to provide a common list of characteristics, which are studied on the basis of common rules and procedures, thus offering the possibility to make comparisons among the agricultural and livestock holdings all over the European Union. As a result, a complex volume of statistical data is compiled.

The surveyed characteristics and the relevant definitions are laid down by the Community legislation listed in section 3.2.

The information collected for each holding is grouped into the following categories:

- The number of agricultural and livestock holdings at national, regional and local level
- General information: location of the holding and system of farming (biological farming, owned or rented agricultural areas, etc)
- Management and labour force: all the people who are responsible for the holding or/and work in the holding
- Agricultural area and land use: size and distribution of the land of the holding and more specifically of the utilized agricultural area (arable land, permanent crops and kitchen gardens, permanent meadows and grassland), as well as specific cultivations
- Agricultural machinery and equipment
- Livestock: animals that are bred in the holding (cattle, sheep and goats, pig, poultry, horses and other animals)
- Irrigation, cultivation and manure management practices
- Secondary activities: activities, which are directly linked with the holding (making use of its production means) and agro-environmental issues

As mentioned in Section 3.1 the sampling scheme used is based on the Regional Unit, the Typology and the Economic size, expressed through the Standard Output, of the holdings. The standard output of an agricultural product (crop or livestock) is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock. The base year of the weights of the Standard Output for the 2016 FSS was the year 2010.

The type of the holding is determined by the relative participation of the various activities in the overall

Standard Output of the holding.

3.5 Statistical unit

The statistical unit of the FSS is the agricultural holding, namely a single unit, both technically and economically, which has a single management and which undertakes the following agricultural activities, within the economic territory of Greece, either as its primary or secondary activity: growing of non-perennial crops, growing of perennial crops, plant propagation, animal production, mixed farming, support activities to agriculture and post-harvest crop activities, which:

- a) has at least 0.1 ha (1 stremma) of utilized land or at least 0.05 ha (0.5 stremma) of greenhouses, regardless of the production type, ownership, or the location of the holding, or
- b) has at least: one (1) cow or two (2) other "large animals" of any type and age (oxen, horses, donkeys, mules), or five (5) "small animals" (sheep, goats, pigs) of any age and type, or fifty (50) poultry birds, or fifty (50) female rabbits, or twenty (20) hives of "domestic" or "European" bees or five (5) ostriches.
- c) cultivates mushrooms.

3.6 Statistical population

The statistical population of the FSS are all the statistical units in the updated Register of Agricultural Holdings of ELSTAT which satisfy the criteria of section 3.5.

3.7 Reference area

The 2016 FSS was conducted in all the Regional Units of Greece (74 Regional Units). The 74 regional units are a national level more detailed than NUTS 3. For the transition to NUTS 3 -52 regional units- some regional units are merged. Henceforth, the 74 Regional Units will be referred to as NUTS 3 level.

3.8 Time coverage

FSS data are available for the following years: 1983, 1985, 1987, 1991 (Census), 1993, 1995, 1997, 2000 (Census), 2003, 2005, 2007, 2009 (Census), 2013 and 2016. Data after 2000 are available in electronic form on the website of ELSTAT in the form of fixed tables grouped into categories:

Statistics> Agriculture, Livestock, Fishery>

- Holdings and number of animals: <http://www.statistics.gr/statistics/-/publication/SPK12/>
- Employment: <http://www.statistics.gr/statistics/-/publication/SPG12/>
- Holdings and areas: <http://www.statistics.gr/statistics/-/publication/SPG32/>

Data for the previous years are available in hardcopy or digitised publications through the Digital Library of ELSTAT:

http://dlib.statistics.gr/portal/page/portal/ESYE/categoryyears?p_cat=10007960&p_topic=10007960

3.9 Base period

Non applicable.

4. Unit of measure

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Two kind of units of measure are predominant:

- The units for measuring the survey characteristics (stremmas- 0.1ha- for agricultural areas, number of heads for livestock, persons or annual work units for the labour force), and
- The number of agricultural holdings having the specific characteristic.

5. Reference period

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The reference period for the 2016 Farm Structure Survey, as regards crops, labour force and other characteristics was the cultivation period from 1st October 2015 until 30th September 2016.

The reference date as regards animal capital of the holding was 1st November 2016. The reference period for the rural development measures was the 3-year period 2014-2016.

6. Institutional mandate

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6.1 Legal acts and other agreements

The legal framework concerning the organization and operation of ELSTAT is as follows:

- **Law 3832/2010** (Government Gazette No 38, Issue A): "*Hellenic Statistical System Establishment of the Hellenic Statistical Authority (ELSTAT) as an Independent Authority*", as amended and in force
- **Regulation on the Operation and Administration of the Hellenic Statistical Authority (ELSTAT)**, 2012, (Government Gazette No 2390, Issue B, 28-8-2012)
- **Regulation (EC) No 223/2009 of the European Parliament and of the Council**, on the European statistics (Official Journal of the European Union L 87/164).
- **Article 14 of the Law 3470/2006** (Government Gazette No 132, Issue A): "*National Export Council, tax regulations and other provisions*".
- **Article 3, paragraph 1c, of the Law 3448/2006** (Government Gazette No 57, Issue A): "*For the further use of information coming from the public sector and the settlement of matters falling within the responsibility of the Ministry of Interior, Public Administration and Decentralization*".
- **European Statistics Code of Practice**, adopted by the Statistical Programme Committee on 24 February 2005 and promulgated in the Commission Recommendation of 25 May 2005 on the independence, integrity and accountability of the national and Community statistical Authorities, after its revision, which was adopted on 28 September 2011 by the European Statistical System Committee.
- **Presidential Decree 226/2000** (Government Gazette No 195, Issue A): "*Organization of the General Secretariat of the National Statistical Service of Greece*".
- **Articles 4, 12, 13, 14, 15 and 16 of the Law 2392/1996** (Government Gazette No 60, Issue A): "*Access of the General Secretariat of the National Statistical Service of Greece to administrative sources and administrative files, Statistical Confidentiality Committee, settlement of matters concerning the conduct of censuses and statistical works, as well as of matters of the General Secretariat of the National Statistical Service of Greece*".

The Legal Framework is detailed in the following link:

<http://www.statistics.gr/en/legal-framework>

The national legislative framework for the implementation of the 2016 FSS is as follows:

- **Act No 6184/Γ2-492** (Government Gazette No 2193/B/15-07-2016) on the "*Approval, proclamation, assignment and distribution of costs for conducting the farm survey structure for the year 2016, as well as approval of using statistical representatives and determination of their fee for the year 2016*" as corrected by the Government Gazette (GG) no 716/B/08-03-2017.

The above-mentioned national legislation deals with the scope and the coverage of FSS, assigns ELSTAT the responsibility for the surveys, and determines the obligations of the respondents with respect to the survey and identification, as well as the protection and the obligations of enumerators. In addition, it includes administrative and financial provisions and provisions relevant to the right of access to

administrative data.

6.2 Data sharing

No

7. Confidentiality

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7.1 Confidentiality - policy

The issues concerning the observance of statistical confidentiality by the Hellenic Statistical Authority (ELSTAT) are arranged by articles 7, 8 and 9 of the Law 3832/2010 as in force, by Articles 8, 10 and 11(2) of the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System and by Articles 10 and 15 of the Regulation on the Operation and Administration of ELSTAT.

More precisely:

ELSTAT disseminates the statistics in compliance with the statistical principles of the European Statistics Code of Practice and in particular with the principle of statistical confidentiality.

<http://www.statistics.gr/en/statistical-confidentiality?inheritRedirect=true>

7.2 Confidentiality - data treatment

- ELSTAT protects and does not disseminate data it has obtained or it has access to, which enable the direct or indirect identification of the statistical units that have provided them by the disclosure of individual information directly received for statistical purposes or indirectly supplied from administrative or other sources. ELSTAT takes all appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by ELSTAT if and only if:
 - a) these data have been treated, as it is specifically set out in the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System (ELSS), in such a way that their dissemination does not prejudice statistical confidentiality or
 - b) the statistical unit has given its consent, without any reservations, for the disclosure of data.
- The confidential data that are transmitted by ELSS agencies to ELSTAT are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task and appointed by an act of the President of ELSTAT.
- ELSTAT may grant researchers conducting statistical analyses for scientific purposes access to data that enable the indirect identification of the statistical units concerned. The access is granted provided the following conditions are satisfied:
 - a) an appropriate request together with a detailed research proposal in conformity with current scientific standards have been submitted;
 - b) the research proposal indicates in sufficient detail the set of data to be accessed, the methods of analyzing them, and the time needed for the research;
 - c) a contract specifying the conditions for access, the obligations of the researchers, the measures for respecting the confidentiality of statistical data and the sanctions in case of breach of these obligations has been signed by the individual researcher, by his/her institution, or by the organization commissioning the research, as the case may be, and by ELSTAT.
- Issues referring to the observance of statistical confidentiality are examined by the Statistical

Confidentiality Committee (SCC) operating in ELSTAT. The responsibilities of this Committee are to make recommendations to the President of ELSTAT on:

- the level of detail at which statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible;
 - the anonymization criteria for the microdata provided to users;
 - the granting to researchers access to confidential data for scientific purposes.
- The staff of ELSTAT, under any employment status, as well as the temporary survey workers who are employed for the collection of statistical data in statistical surveys conducted by ELSTAT, who acquire access by any means to confidential data, are bound by the principle of confidentiality and must use these data exclusively for the statistical purposes of ELSTAT. After the termination of their term of office, they are not allowed to use these data for any purpose.
- Violation of data confidentiality and/or statistical confidentiality by any civil servant or employee of ELSTAT constitutes the disciplinary offence of violation of duty and may be punished with the penalty of final dismissal.
- ELSTAT, by its decision, may impose a penalty amounting from ten thousand (10,000) up to two hundred thousand (200,000) euros to anyone who violates the confidentiality of data and/or statistical confidentiality. The penalty is always imposed after the hearing of the defense of the person liable for the breach, depending on the gravity and the repercussions of the violation. Any relapse constitutes an aggravating factor for the assessment of the administrative sanction.

8. Release policy

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8.1 Release calendar

The release calendar fully meets legal requirements concerning the deadlines for the release of data by:

- meeting the legal and contractual requirements concerning the deadlines for the transmission of the survey results,
- ensuring the longest possible time for data checking,
- ensuring additional time in case it is needed.

8.2 Release calendar access

The release calendar is distributed to the press and is available free of charge to anyone interested. The release calendar is also posted on ELSTAT website:

<http://www.statistics.gr/en/calendar>

8.3 User access

Results are made available simultaneously to all interested parties and users through a Press Release, the publication of tabulated data on the website of ELSTAT, through the link [Statistics>Agriculture, Livestock, Fishery>](#), on the website of Eurostat and by submitting an application to <http://www.statistics.gr/en/provision-of-statistical-data>

Users do not have any kind of access to data prior to their release.

9. Frequency of dissemination

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The results of the Agricultural-Livestock Census are disseminated every 10 years, whereas the results of the in-between Farm Structure Surveys were disseminated every two years till 2010 and every three years since then.

The results of the 2016 FSS were released in April 2018.

10. Accessibility and clarity

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10.1 News release

A [Press release](#), was published on the 26th of April 2018 in order to present the results of the 2016 FSS.

10.2 Publications

No

10.3 On-line database

Tabulated data are available through the website of ELSTAT (<http://www.statistics.gr/statistics/agr>) as well as the website of Eurostat (<http://ec.europa.eu/eurostat/web/agriculture/data/database>)

10.3.1 Data tables - consultations

377 consultations in 2018, including consultations of metadata.

10.4 Micro-data access

For confidentiality reasons, access to microdata is permitted only under strict conditions and with respect to the relevant process. Users can request access to microdata by submitting an application through:

http://www.statistics.gr/en/scientific_provision_data

10.5 Other

Other relevant material can be accessed through:

<http://dlib.statistics.gr/portal/page/portal/ESYE/>

10.5.1 Metadata – consultations

See 10.3.1.

10.6 Documentation on methodology

The principles of the documentation on the methodology of data collection and dissemination are laid down by ELSTAT, taking into consideration international practices, guidelines and rules set out by Eurostat on the specific statistical theme:

- Regulation (EC) No 1166/2008 of the European Parliament and of the Council, of 19 November 2008, on farm structure surveys and the survey on agricultural production methods (<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R1166&from=EN>)
- Regulation (EU) No 715/2014 of 26 June 2014 amending Annex III to Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards the list of characteristics to be collected in the farm structure survey 2016 (<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0715&from=EN>)
- Regulation (EC) No 2015/1391 of 13 August 2015 amending Regulation (EC) No. 1200/2009 of the the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics. (<http://eur-lex.europa.eu/legal-content/LV/ALL/?uri=CELEX%3A32015R1391>)
- Regulation (EC) No 223/2009 of the European Parliament and of the Council, of 11 March 2009, on European statistics and repealing Regulation (EC, Euratom) No 1101/2008 of the European Parliament and of the Council on the transmission of data subject to statistical confidentiality to the Statistical Office of the European Communities

- <http://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32009R0223&from=EN>
- European Statistics Code of Practice (<http://ec.europa.eu/eurostat/web/quality/european-statistics-code-of-practice>)
- Quality Assurance Framework of the European Statistical System (http://ec.europa.eu/eurostat/documents/64157/4392716/qaf_2012-en.pdf/8bcff303-68da-43d9-aa7d-325a5bf7fb42)
- ESS Quality Glossary (http://ec.europa.eu/eurostat/ramon/coded_files/ESS_Quality_Glossary.pdf)
- ESS Handbook for Quality Reports (<http://ec.europa.eu/eurostat/documents/3859598/6651706/KS-GQ-15-003-EN-N.pdf>)
- Principles Governing International Statistical Activities (http://unstats.un.org/unsd/methods/statorg/Principles_stat_activities/principles_stat_activities.pdf)

10.6.1 Metadata completeness – rate

Metadata are complete.

10.7 Quality documentation

The following quality reports were/will be made available:

- Summary quality report for users, Farm Structure Survey, Year 2016, ELSTAT website
- Single Integrated Metadata Structure (SIMS), Farm Structure Survey, 2016, Greece, ELSTAT website
- National Methodological Report Farm Structure Survey 2016, Greece, Eurostat website

The National Methodological Report of the survey is also available from ELSTAT, upon request.

11. Quality management

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11.1 Quality assurance

ELSTAT aims at ensuring and continuously improving the quality of the produced statistics and maintaining user's confidence in these statistics. These goals are achieved, as described in the Quality Policy of ELSTAT, through the following principles:

- Safeguard and substantiate the operational independence of ELSTAT
- Produce timely and relevant statistics using scientifically sound methods
- Establish and maintain users' confidence in the reliability of the statistics
- Safeguard the confidence of the statistical units who provide their confidential information for the production of the statistics

(<http://www.statistics.gr/documents/20181/2571f853-1e37-46da-9387-595bbe2a162b>)

These quality objectives are achieved by incorporating the guidelines listed above in all the stages of collection, production and dissemination of the statistics.

11.2 Quality assessment

First phase:

The questionnaires that had been collected by ELSTAT staff in the Regional Statistical Offices (RSOs) were checked in order to identify any errors. Logical checks were conducted and the questionnaires were also checked for correctness and completeness.

Second phase:

After the optical character reading of the questionnaires, additional electronic checks were also applied. Then, checks were conducted for identifying double recordings in the questionnaires and in the database. In the cases where errors were found, there was a contact with the RSOs in order to validate the data or to correct the errors. The results of the 2016 FSS were compared with the results of other surveys and with

the available administrative data in order to identify the longitudinal trend and to assess the results. Therefore, the results of the 2016 FSS are considered to be of high quality.

12. Relevance

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12.1 User needs

According to ELSTAT's general policy the user needs are expressed in user conferences conducted at regular intervals: <http://www.statistics.gr/en/user-conference>

ELSTAT also records the user needs through the every day communication between the institution and the users. ELSTAT compiles its annual programs as well as the 3-year program of the Hellenic Statistical System setting as a goal the satisfaction of users needs.

The main users of the FSS results are the Ministry of Rural Development and Food, the Ministry of Environment and Climate Change, Universities and Research Institutes, and individual researchers and consultants. Their respective needs, as recorded in the relevant requests for data, fully correspond to the characteristics of the survey, which are in full compliance with EU Regulations.

12.2 User satisfaction

The 2016 FSS was conducted pursuant to EU Regulations which are compiled taking into consideration users' needs at European and international level. In order to fulfil the need of Greek users, ELSTAT carries out a User Survey. The data from this survey are posted on the portal of ELSTAT:

<http://www.statistics.gr/en/user-satisfaction-survey>

12.3 Data completeness

The only non-existent characteristic is "Berry species" (B_4_1_2).

The non-significant characteristics, collected and delivered to Eurostat under their own heading (NS1) are "Rape and turnip" (B_1_6_4) and "Flax" (B_1_6_9).

The non-significant characteristics, other than NS1 (NS2) are "Hops" (B.1.6.2), "Linseed (oil flax)" (B.1.6.7) and "Hemp" (B_1_6_10).

There are no characteristics surveyed only for national purposes.

13. Accuracy and reliability

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13.1 Overall accuracy

The main types of errors are the following:

- Sampling errors, that derive from the application of the one-stage stratified random sampling, and were estimated through the calculation of the coefficient of variation.
- Non-sampling errors, that derive from any other reasons except sampling and arise during the planning, conducting, processing and final stages of estimation, in all surveys. Non-sampling errors cannot be estimated through the sampled data.

The main sources of errors are:

1. Cases of new holdings that had not been included in the Register of Agricultural and Livestock Holdings, thus creating under-coverage errors.
2. Cases where the Register of Agricultural and Livestock Holdings included holdings that were closed or holdings which had merged and which were identified during the conduct of the survey.
3. Counting errors that were identified and corrected by means of logical checks.

4. Non-response errors, that result in bias, the importance of which is not possible to be measured through the sampling data. However, comparisons of the survey results with the corresponding data from administrative sources (Greek Ministry of Rural Development and Food), Annual Agricultural Statistical survey, as well the Livestock and the Crop Production Statistics surveys have taken place for gaining knowledge on biases and other non-sampling errors. Non-response errors, were addressed by imputation and, as a result, the remaining biases and other non-sampling errors are approximately negligible.

13.2 Sampling error

The sampling method used by ELSTAT is the single random stratified sampling. In the design phase of the survey an initial weight (design weight) was given to each sampling unit (holding), estimated as the inverse of the probability of selection. The initial weights were corrected by a factor that takes into account the change in sample size imposed by the holders that refused to respond. Corrections of this type were not applied to exhaustively surveyed strata.

Furthermore, for holdings that were split into two or more new ones, all the resulting new holdings were surveyed and the weight of the initial holding was given to each one of them. For cases where the result of the survey indicated that a holding has changed stratum, the holding retained the initial weight assigned to it during the design stage of the survey.

Sampling errors are estimated in terms of the coefficient of variation, CV (%) according to the following relationships:

In each stratum, h, let:

y_{hi} : the value of the characteristic y of the holding of order i belonging to stratum h

N_h : the total number of holdings belonging to stratum h

n_h : the number of the respondent holdings in stratum h

Then:

Y_h : the sum of variable Y over all the holdings in stratum h

$$Y_h = \sum_i y_{hi} \quad (1)$$

Y: the sum of variable Y over all the holdings in all the strata

$$Y = \sum_h Y_h \quad (2)$$

Estimates for Y_h and Y are given by:

$$\hat{Y}_h = \frac{N_h}{n_h} \sum_{i=1}^{n_h} y_{hi} \quad (3)$$

$$\hat{Y} = \sum_h \hat{Y}_h \quad (4)$$

The variance estimation of \hat{Y}_h and \hat{Y} is given by:

$$V(\hat{Y}_h) = \frac{N_h(N_h - n_h)}{n_h} S_h^2 \quad (5)$$

where

$$S_h^2 = \frac{1}{n_h - 1} \left[\sum_{i=1}^{n_h} y_{hi}^2 - \frac{\left(\sum_{i=1}^{n_h} y_{hi} \right)^2}{n_h} \right] \quad (6)$$

and
$$V(\hat{Y}) = \sum_h V(\hat{Y}_h) \quad (7)$$

The coefficient of variation of the estimate of Y is given by:

$$CV(\hat{Y}) = \frac{\sqrt{V(\hat{Y})}}{\hat{Y}} \quad (8)$$

Sampling errors, expressed as the coefficient of variation, CV (%), are presented in the following table:

Variable	Code	CV (%)	Variable	Code	CV (%)
Cereals	B_1_1	0.9	Olive plantations	B_4_3	0.5
Dried pulses and protein crops	B_1_2	4.0	Vineyards	B_4_4	1.2
Potatoes	B_1_3	4.1			
Sugar beet	B_1_4	7.4	Dairy cows	C_2_6	4.5
Oilseed crops	B_1_6_4 - B_1_6_8	2.9	Other cows	C_2_99	1.7
Fresh vegetables, melons and strawberries	B_1_7	3.1	Other bovine animals	C_2_1-C_2_5	2.5
Flowers and ornamental plants	B_1_8	11.0	Breeding sows	C_4_2	5.6
Plants harvested green	B_1_9	1.5	Other pigs	C_4_1, C_4_99	5.1
Pasture and meadow, excluding rough grazing	B_3_1, B_3_3	3.2	Sheep	C_3_1	1.1
Fruit and berry plantations	B_4_1	1.1	Goats	C_3_2	1.4
Citrus plantations	B_4_2	1.7	Poultry	C_5_1-C_5_3	3.7

In some cases the estimated RSEs are above the thresholds due to the following reasons:

- 1) For some holdings (mainly livestock holdings) there seems to be an inconsistency between the SO (provided from Eurostat) based on the Register's data and the SO based on the observed LSU from the survey's results.
- 2) The precision requirements in some regions are above thresholds as, during the design of the survey, according to the those regions' characteristics obtained from the Register's data, it was not necessary for them to comply with the precision criteria.

13.3 Non-sampling error

Non-response results in bias, the importance of which is not possible to be measured through the sample data. However, comparisons were made between the survey results and the corresponding data from administrative sources, namely the Greek Ministry of Rural Development and Food and the Payment and Control Agency for Guidance and Guarantee Community Aid (OPEKEPE), the Annual Agricultural Statistical survey, as well the Livestock and the Crop Production Statistics were made, to provide insights on the

biases and other non-sampling errors.

a. Unit non – response

In case of difficulties (no response, permanent absence of the holder etc.) the original sample holding was replaced by a holding from the “additional sample” according to the relevant rules that were given to interviewers.

The unit non-response rate is estimated to be 8.4%. In the design phase of the survey, an initial weight (design weight) was given to each sampling unit (holding), estimated as the inverse probability of selection. The initial weights were corrected by a factor that takes into account the change in sample size imposed by the holders that refused to respond. The essence of this correction is to increase the initial weights of the respondents, so that they represent the non-respondents. Corrections of this type were not applied to exhaustively surveyed strata.

When the above measures could not be applied, non-response errors were addressed by imputation.

b. Item non - response

There was no item non-response, because even in some very rare cases where a field in the questionnaire was not filled in, the personnel of ELSTAT contacted the farm owner in order to eliminate item non-response.

13.3.1 Coverage error

Over-coverage stems from the fact that there are units accessible via the frame but they do not belong to the target population. Corrections and weighting for under-coverage is difficult, because it cannot be obtained from the sample itself, but only from external sources. Due to refusals and the rest not surveyed holdings, from the sample data, about 10.4% of holdings were not covered by field enumeration:

Undercoverage (%) = $\frac{\{\text{Refusals} + \text{Rest not surveyed holdings}\}}{\{\text{Respondents} + \text{Refusals} + \text{Rest not surveyed holdings}\}} * 100$

Respondents = 85,746 holdings (includes also holdings that derived from splitting of other holdings and holdings that were used from the reserve sample)

Refusals = 2,338 holdings

Rest not surveyed holdings (holders were unknown, temporarily absent, etc) = 7,670 holdings

13.3.1.1 Over-coverage – rate

In agricultural surveys, the over-coverage mainly has to do with holdings that were included in the farm register, they were selected in the sample, but they did not actually exist at the time of the survey (holdings out of operation, permanently or temporarily, holdings fully turned over and merged with another holding etc.). These holdings actually reduce the initial sample size and inflate the variance of the survey characteristics.

By using the sample data, the over-coverage rate (%) of closed and merged holdings amounts to 5.99%, based on the following formula:

Overcoverage rate (%) = $100 * \frac{\{\text{Closed holdings} + \text{Merged holding} + \text{Duplicates}\}}{\text{Gross sample size}}$

Where,

Gross sample size = 101,858 holdings (Holdings in Register + New holdings + Holdings arisen from the division of holdings + Reserve sample)

Closed holdings = 3,226 holdings (Holdings that do not operate permanently + Holdings that do not operate temporarily + out-of-scope holdings)

Merged holdings = 2,725 holdings

Duplicates in the Register = 153 holdings

13.3.1.2 Common units – proportion

Non applicable.

13.3.2 Measurement error

The interview was conducted with the owner or the manager of the holding. However, if the owner or the manager was found temporarily absent then the required information could be retrieved by interviewing another member of the holder's family or from an employee with knowledge (e.g. foreman) of the holding. The most common problematic questions/characteristics identified during the quality control of the data were the following:

- Household consumption (item A_3_3_1), sometimes reported as "yes" for large holdings,
- Kitchen gardens vs outdoor fresh vegetables (items B_2 and B_1_7_1_2),
- Permanent grassland vs common land, in some cases were difficult to discern.

13.3.3 Processing error

During data processing that followed the data collection phase, errors were identified due both to the Optical Character Recognition (OCR) and erroneous or incomplete filling-in of the questionnaires.

During this validation phase all errors identified were corrected using as reference the Agricultural Register, the experience of ELSTAT's personnel and common sense. The estimated gross error rate was 5 errors per questionnaire, including all types of errors from simple misspelling of a postal code or omission to fill-in a total to erroneous values being entered.

During both the Validation and Quality control phases, corrections and/or completions deemed necessary were performed, in order of preference, according to:

- the data already in the questionnaire (i.e. completion of missing totals),
- logical conjecture based on the experience of the handler (mostly for minor errors),
- telephone contact with the interviewee (mostly for holdings of a significant size).

13.3.4 Model assumption error

Non applicable.

14. Timeliness and punctuality

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14.1 Timeliness

The deadline for the submission of data to Eurostat was the 31st of December 2017.

14.2 Punctuality

Data were delivered to Eurostat on time, on 29th of December 2017.

15. Coherence and comparability

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15.1 Comparability - geographical

The results of the 2016 FSS are comparable with the results of other EU Member States because they are based on common definitions of the variables and common procedures for data processing as stipulated in Article 2 and Annex I of Regulation (EC) 1166/2008 of the European Parliament and of the Council. There are no differences between the national and EU definitions of the surveyed characteristics.

15.1.1 Assymetry for mirror flows statistics – coefficient

Non applicable.

15.2 Comparability over time

All the variables of the Farm Structure Surveys can be compared longitudinally because the results are produced on the basis of common definitions of the statistical unit and common procedures for data processing.

15.3 Coherence cross-domain

The FSS 2016 results were compared with data from the FSS 2013 and the 2009 Agricultural Census, as well as other special annual agricultural surveys and data from administrative sources (Ministry of Rural Development and Food, OPEKEPE etc.).

In cases where large variations –depending on the variable– were detected, an in-depth analysis was carried out in close cooperation with the RSOs and the Ministry of Rural Development and Food.

The results exhibit partial coherence at the NUTS3 level, with the Livestock and the Crop Production Statistical Surveys.

15.3.1 Coherence – sub annual and annual statistics

Non applicable.

15.3.2 Coherence – National Accounts

Since the survey is conducted every 3 years, National Accounts can only use the results to cross-check the corresponding data from their annual data sources.

15.4 Coherence - internal

Internal coherence of correlating variables is ensured by means of checking the specific data of each holding.

16. Cost and burden

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According to the calculations for the cost and work burden for the 2016 FSS it is estimated that the personnel of ELSTAT worked during 126,572 hours over a period of 2 years.

No direct financial burden was imposed on the owners of the agricultural holdings that are surveyed. The questionnaires are designed to keep respondent burden low and to ensure good quality of the information collected. The total length of interviewing is on average 20 minutes for the complete fulfillment of the survey questionnaire.

17. Data revision

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17.1 Revision policy

The revision policy of the Hellenic Statistical Authority (ELSTAT) defines standard rules and principles for data revisions, in accordance with the European Statistics Code of Practice and the principles for a common revision policy for European Statistics contained in the Annex of the European Statistical System (ESS) guidelines on revision policy.

<http://www.statistics.gr/documents/20181/a49dca9a-dacf-4b52-b5df-b156216cb354>

17.2 Revision practice

The released data are final and have been validated by Eurostat and ELSTAT. Nevertheless, the data can be revised, if it is deemed necessary, following the provisions of the Revision Policy mentioned above.

18. Statistical processing

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18.1 Source data

The data were collected through a sample survey covering about 12% of the target population using one-stage stratified sampling, except for the data on common land which were obtained from an administrative source, namely the IACS register maintained by OPEKEPE.

The Sampling Frame, which was used in this survey, was the updated Register of Agricultural Holdings of ELSTAT (Farm Register) as this resulted from the Agricultural Census of 2009-2010 and the relevant updating procedures hence.

The Farm Register is a statistical register generated and updated periodically during the Agricultural Censuses. Furthermore, the Farm Register is updated from administrative sources, as well as other surveys conducted by ELSTAT such as the FSS (conducted every three years) and the specialized national annual agricultural surveys. Data from additional sources are compared and crosschecked to those of the Farm Register based on the identification data of the holder, and if not already included are added to the Register.

The Farm Register is a list frame.

The sampling frame for the 2016 FSS was based on the latest available version of the Farm Register including 731,182 holdings, 706,575 of which formed the population covered by the 2016 FSS.

The sampling method used by ELSTAT is the one-stage stratified random sampling (probability design), where the sampling unit is the agricultural, livestock or mixed holding. According to this sampling scheme, the strata were created by the combination of the following stratification criteria:

- The Regional Unit of the holdings (74 Regional Units in Greece)
- The particular type of farming according to the technical and economic orientation of holdings
- The economic size of holdings was divided into 6 classes. The economic size has been defined by the total Standard Output (SO) calculated in ESU (1 ESU=1,200 Euro)
- Holdings with zero SO, were stratified into 9 classes, according to their size, determined by their area with crops.

The sampling units were drawn randomly from the sampling frame. In detail, in each stratum the sample has been selected with equal probabilities by systematic random sampling from the population of holdings belonging to this stratum.

The following categories of holdings have been surveyed exhaustively:

- Holdings with economic size more than 65 ESU (6,084 holdings)
- Holdings breeding ostriches, included in the Register of the ELSTAT (27 holdings)
- Livestock and crop holdings that were included in the sample frame, for which their economic size and type of farming were unknown (3,982 holdings = 3,467 added from OPEKEPE + 515 from the specialized national annual agricultural surveys).

18.2 Frequency of data collection

The data for the Farm Structure Survey are collected every three years.

18.3 Data collection

The data of the FSS 2016 were collected by means of face-to-face interviews with the owners of the agricultural holdings, on the basis of a specially designed questionnaire.

The survey questionnaire was designed in such a way so as to satisfy both national and Community needs for statistical information. It covered all variables stipulated in Regulation 1166/2008 which must be analyzed, thus helping drawing the Hellenic agricultural policy.

The questionnaire was designed taking into consideration comments and observations made by the main

data users (Ministry of Rural Development and Food, Ministry of Environments and Climate Change), as well as by other Divisions of ELSTAT (Division of Methodology and Organization, Division of Informatics, Division of Statistical Information and Publication, Division of National Accounts).

In order to ensure correctness and efficiency of data collection, special training seminars were organized targeted to the competent personnel assigned with the conduct of the survey.

The RSOs had the responsibility to collect the data. Each Supervisor was responsible to organise and coordinate all the statistical tasks in the Department under his competency. The Assistant Supervisors were assisting the Supervisor and together they trained the enumerators, they assigned to them the holdings they had to survey and they monitored their work.

If a holding had been divided into two or more holdings, the enumerator had to survey all the newly created holdings.

The enumerator was also obliged to inform the competent assistant supervisor on the progress of the tasks on a weekly basis, and to submit the questionnaires he had filled in.

The Assistant Supervisors collected the completed questionnaires with the aim of checking their quality. They had the right to correct any errors, marking them with red pen and at the end they signed the questionnaires.

If the completed questionnaires did not meet the survey requirements, they had to be returned to the enumerator in order to be dully corrected.

18.4 Data validation

Errors in individual observations were identified and corrected during the two main phases of Processing:

- Data Processing and Validation by the Regional Statistical Offices
- Quality Controls at Regional Unit level by the Central Service

The data were validated according to the following procedure:

1. Logical and completeness checks of the questionnaires in the RSO, in order to check their correctness and to correct any errors, if necessary. It should be noted that the external survey workers themselves had already performed such kind of checks before submitting the filled in questionnaires to the employees of the RSO.
2. Data entry by means of OCR and correction of the errors due to erroneous reading.
3. Validation of data after a series of checks which identified errors or notifications.
4. Checks for identifying double recordings. The questionnaires were checked in order to identify the holdings that had been enumerated twice.

During the Quality Control phase, even though performed at the Regional Unit level, corrections were attempted at the holding level mostly by identifying abnormally high or low values. Such corrections were relatively seldom. At this stage, some follow-up interviews were also considered necessary, resulting in a number of questionnaires being completed by phone interviews. More specifically, the survey data were compared with the results for previous Censuses and previous Structure surveys, as well as with the results of the annual statistical surveys and with data from administrative sources (Ministry of Rural Development and Food, etc). In case where major inconsistencies were identified for a specific variable, an in-depth study and analysis were carried out in cooperation with the RSO and the Ministry of Rural Development and Food.

The ABBYY FlexiCapture 11 software was used for OCR and the preliminary validation of the data. Then the data were exported for further validation in ELSTAT's database where all software tools used are developed within the Oracle system and are custom made either by the staff of ELSTAT or by external contractors.

Data validation has been carried out at all levels, according to the respective time frame. Assistant supervisors and interviewers carried out data quality control and initial validation during the data

collection period. Supervisors and experienced personnel at the Regional and Central Offices carried out the final validation of the data after all data were collected and digitized, whereas specialised staff of the Central Office performed the final quality checks before the data were submitted to Eurostat.

18.5 Data compilation

After the collection of the questionnaires, the data, by means of OCR (optical character reading), were entered in an electronic file. Afterwards, data processing followed in order to identify and dully correct any errors. Limited unit imputation was applied (123 holdings) to address specific non-response errors.

Then, the sample weights were adjusted to account for the remaining non-response. In the design phase of the survey an initial weight (design weight) was given to each sampling unit (holding). This initial weight was estimated as the inverse of the probability of selection. More precisely, for the holding i that belongs to stratum h the initial weight is:

$$W_h = \frac{N_h}{n_h}$$

where,

N_h : population size according to the data of the Agricultural Register

n_h : number of holdings in sample stratum h , excluding the extra holdings derived from splitting of other holdings

Weights have been adjusted to account for non-response by updating the unit's selection probabilities. For the non-response cases, the initial weights were corrected by a factor that takes into account the response rates in each separate stratum. The essence of this correction is to increase the initial weights of the respondents, so that they represent the non-respondents. More specifically, the initial weight in each stratum h is multiplied by the inverse of the response rate, r_h , defined as:

$$r_h = \frac{m_h}{n_h}$$

where,

m_h : is the number of respondents.

The final weight in stratum h is:

$$w_h = W_h \cdot r_h^{-1} = \frac{N_h}{n_h} \cdot \frac{n_h}{m_h} = \frac{N_h}{m_h}$$

Finally, a database was created containing the microdata of the 2016 FSS and from those the tabulated data were produced.

18.5.1 Imputation – rate

The unit imputation rate was 0.12%. No item imputation was applied.

18.6 Adjustment

Non applicable.

18.6.1 Seasonal adjustment

Non applicable.

19. Comment

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