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## LITHUANIA - Census of Agriculture 2010 – Explanatory notes

### 1. Historical outline

The 2010 Agricultural Census of the Republic of Lithuania was carried out on 3<sup>rd</sup> May to 30<sup>th</sup> September 2010. It was the second Agricultural Census after the restoration of Independence of Lithuania; the first was conducted in 2003 and shortly after Lithuania became a member of the European Union. During the period between the Agricultural Census 2003 and the Agricultural Census 2010, two sample farm structure surveys (FSS) were carried out.

### 2. Legal Basis and Organization

Statistics Lithuania is the government agency with the legal authority and responsibility for statistical surveys and carried out the Agricultural Census 2010 according to the European Union regulations and national legal acts and is responsible for the methodological, technical and organizational preparation of statistical survey.

The acts and legislation pertaining to statistics are as follows:

- (1) Law on Statistics of the Republic of Lithuania (Official Gazette, 1999, No VIII-1511);
- (2) Resolution of the Government of the Republic of Lithuania No 516 of 27 May 2009 on the Agricultural Census 2010 of the Republic of Lithuania (Official Gazette, 2009, No 67-2700);
- (3) Order No DJ-32 of 28 January 2008 of the Director General of Statistics Lithuania on the approval of the work plan for the Agricultural Census 2010;
- (4) Order No DJ-163 of 21 August 2008 of the Director General of Statistics Lithuania on the formation of an organizational methodological working group for the Agricultural Census 2010;
- (5) Order No 174 of the Director General of Statistics Lithuania of 22 July 2009 on the approval of the composition of the High-Level Commission for the Agricultural Census of the Republic of Lithuania 2010 (Official Gazette, 2009, No 89-3825);
- (6) Order No 36 of the Director General of Statistics Lithuania of 28 January 2010 on the approval of a questionnaire for the Agricultural Census 2010 of the Republic of Lithuania (Official Gazette, 2010, No 17-817).

### 3. Reference Period or Date

The Census reference date was 1 June 2010 for all characteristics such as livestock, buildings, machinery and other variables, where it is meaningful to assign a specific day. Land and crops data refer to the reference year 2010. The reference period for labour, and agricultural production methods was the 12 months ending on the reference day of the survey (1 June 2009 to 31 May 2010). The reference period for support for Rural Development was the last 3 years (2008, 2009, 2010)

### 4. Enumeration period

Data collection was started with an e-Census May to June 2010, Farmers that did not respond during the e-Census, and did not declare crops, were interviewed 19 July until 31 August 2010. Small farms were interviewed from 1 June 2010 until 16 July 2010.

### 5. Definition of the Statistical Unit

EC Regulation 1166/2008 defines the statistical unit as an agricultural holding. "Agricultural holding" or "holding" means a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No 1166/2008 within the economic territory of the European Union, either as its primary or secondary activity. In addition, the EU regulation determines thresholds of size.

In line with the EU Regulation, the minimum threshold of at least one hectare of utilized agricultural land was used. For those with less than 1 ha of utilized agricultural land, the threshold for income from agricultural production sales was not less than LTL 5,000 per year or approximately EUR 1,448.

In total 364,414 holdings met the conditions and were surveyed. There were 199,913 agricultural holdings (646 enterprises plus 199,267 family farms), and 164,501 small farms. The small farms with less than 1 ha of utilized agricultural land and income less than LTL 5,000 per year (under the threshold) were surveyed only for national purposes.

### 6. Geographic Coverage

Covered the entire country.

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## 7. Exclusions and Cut-Off Thresholds

Small farms, for example, farms with the utilised agricultural area of less than 1 hectare and income from agricultural activity per calendar year less than LTL 5,000, provided only the basic data on land and farm animals for national data needs.

## 8. Methodology

### *Use of the FAO Modular Approach*

No

### *Frame*

Prior to the Census, lists of respondents by municipality were prepared using the following statistical and administrative sources: Integrated Administration and Control System Register, Livestock Register, Agricultural Census 2003 database updated with data from all statistical surveys. Holdings were taken and divided into two lists –farms with at least 1 hectare of utilized agricultural area, growing farm animals or having greenhouses, and farms under 1 hectare of utilized agricultural area, which have 1-2 farm animals and in 2003 were participated in a small farm survey. The quality of the list was checked and some corrections have been done by a specialist in municipalities.

The list consisted of 239933 holdings with one or more hectares of utilized agricultural land or income of not less than LTL 5000 per year and 219176 small farms.

### *Complete or Sample Enumeration Methods*

The 2010 Census and the Survey on Agricultural Production Methods (SAPM) were both an enumeration of all agricultural holdings. There was no sampling.

### *Sample Design*

Not applicable.

### *Collection Method*

Data collection was started with an e-Census May to June 2010. At the same time, workplaces for Census specialists were equipped in every ward office. Farmers who came to a ward office to declare crops through the Integrated Administration and Control System (IACS) were surveyed by a Census specialist. Farmers that did not respond during the e-Census, and did not declare crops, were interviewed 19 July until 31 August 2010, using paper questionnaire. Small farms were interviewed from 1 June 2010 until 16 July 2010, using paper questionnaire. Agricultural enterprises had to fill in questionnaires themselves and send them directly to Statistics Lithuania for further processing.

### *Questionnaire(s)*

EU Regulations require information on holding location and geo-coordinates, legal status, ownership and tenancy, land use and crops grown, irrigation, livestock, organic farming, machinery (mandatory in 2013 FSS), renewable energy installations, other gainful activities, socio-economic circumstances (full and part-time farming), labour force (family, non-family, contractors), agricultural and vocational training of the manager, inclusion in rural development support programmes, soil tillage methods, crop rotation, and erosion protection, livestock keeping places and keeping methods, animal grazing, manure application and manure storage and treatment facilities, maintenance and installation of landscape features.

In addition Lithuania included items on bookkeeping and membership in an agricultural cooperative. There were four questionnaires in total including the main questionnaire, for enterprises and family farms that met the EU minimum thresholds for agricultural activity. The second was the Small Units Questionnaire for very small farms that were below the minimum thresholds. The third was a questionnaire to be filled in if the land and or the livestock of the holding were in different municipalities, and the fourth was a questionnaire to collect information on farm buildings and machinery.

The questionnaire with all annexes requests information for 780 variables. Data on both the Survey on Agricultural Production Methods (SAPM) and other gainful activities (OGA) were collected together by the main Agricultural Census questionnaire.

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### ***Controls to Minimize Non-Sampling Errors***

The respondents filling in the questionnaire and interviewers were provided with clear instructions and reference material to ensure the quality of the data. Errors detected in the process of entering statistical data were corrected by returning incorrectly filled in Census questionnaires to the census takers for corrections. Errors were corrected manually, based on discussions with census takers, and contacting farmers.

In terms of completeness the data transfer system would not accept incomplete questionnaires or questionnaires that failed range and consistency edits. All errors had to be corrected before the data would be accepted and loaded on the database and users of the transfer system would not be sent a note of the file having been received until the record was accepted.

Furthermore, specialists responsible for the Census in the regional statistical offices and the central statistical office, who used Oracle software for entering data, gave a feedback in an effort to reduce the most common errors. There were 317 different logical and arithmetic controls for the main questionnaire and 26 for the Small Unit Questionnaire.

### ***Innovative Methodologies***

Lithuania used an E-census with personal interview follow-up of initial non-response.

A Small Unit Questionnaire was used in an effort to collect data on all agricultural activity including activity on holdings falling below the EU minimum thresholds.

## **9. Data Entry, Edits and Imputations, Estimation and Tabulation**

The statistical data prepared in the Ward Offices were submitted to Statistics Lithuania for further data handling. When the data were received by Statistics Lithuania they were checked once again: whether they complied with the conditions of control. If non-conformity was found, its origin was determined, and corrected.

ABBYY Form Filler 2.5 software was used for entering statistical data into laptop computers and to fill in the electronic questionnaire. A special program created using ORACLE software was used for statistical data processing at Statistics Lithuania. ORACLE software was also used for the recoding and preparation of statistical data received in the process of the Census for transmission to Eurostat.

SAS was used for linking statistical data of several sources according to the selected criterion and for the calculation of derived statistical indicators. Results were transferred into MS Office Excel worksheet tables. Excel was also used for the comparison of statistical data with statistical data of the previous year and the results of the Agricultural Census 2003 and those of other statistical surveys. Imputations for the data on Organic Farming, taken from the Organic Farming Register, were done directly on the Oracle database.

Final data check was performed using the administrative sources. The following administrative sources were used:

- Integrated Administration and Control system;
- Livestock Register.

## **10. Data Dissemination and Use**

4 press releases on the preliminary results of the Agricultural Census 2010. First one was published on 15 December 2010, presenting the first results of the Agricultural Census 2010, provisional data on the number of farms possessing 1 and more ha of agricultural land utilized and a breakdown of farms by area of utilized agricultural land.

The second press release was published on 28 February 2011. Such statistical data as farms by category and land utilized, agricultural land utilized by farms, the structure of agricultural crops, the number of farm animals on all farms were presented and analysed.

The third press release was published on 30 August 2011. The main aim of the press release was to analyse the provisional results of the Agricultural Census 2010 on labour force in agriculture.

The fourth press release was published on 29 November 2011. It was related to information on the agricultural production methods used: soil cover in winter; the systems of keeping cattle, pigs, laying hens; grazing the livestock kept on the farm; the share of agricultural land fertilized with organic fertilizers; manure and slurry storage facilities used on the farm; irrigated lands on the farm.

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Three publications on the final results of the Agricultural Census 2010 were published. The first publication, Results of the Census of Agriculture 2010 in Lithuania was published on July 2012. The second publication, Results of the Census of Agriculture 2010 in Lithuania by County and Municipality was published on September 2012. The third publication, Results of the Census of Agriculture 2010 in Lithuania by Ward was published on December 2012.

### **11. Census Data Quality**

Comparisons of the Census data were made at both the micro and macro level to ensure data quality by detecting outliers and discrepancies. Micro data were compared with the following:

- (1) IACS (Crop Declaration Database) was used for the comparisons of crops;
- (2) The Livestock Register was used for the comparison of farm animals;
- (3) The State Social Insurance Fund Board database was used for the comparison of labour force;
- (4) Other agricultural statistics surveys (crop production, livestock survey, etc.).

Comparisons of macro data that showed large discrepancies were returned to the micro level and comparisons of micro data were done in greater detail. Macro data were compared with the following:

- (1) IACS (Crop Declaration Database) aggregated data;
- (2) Livestock Register aggregated data;
- (3) Census 2003, FSS 2005 and FSS 2007 aggregated data;
- (4) Other agricultural statistics surveys (crop production, animal survey, etc.).

The validation and verification exercise detected only minor differences and the Census results have been accepted as reliable. Comparisons with the Lithuanian Labour Force Survey were not made due to fundamental methodological differences.

### **12. Data Sources**

Eurostat:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural\\_census\\_2010](http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural_census_2010)

Final report:

[http://ec.europa.eu/eurostat/documents/749240/749313/LT\\_NMR\\_FSS\\_2010.pdf](http://ec.europa.eu/eurostat/documents/749240/749313/LT_NMR_FSS_2010.pdf)

### **13. Contact**

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#### **Website**

Official Statistics Portal:

<http://osp.stat.gov.lt/en/2010-m.-surasymas>