



## LITHUANIA – AGRICULTURAL CENSUS 2020 – METADATA REVIEW

### 1. Historical outline

The first general agricultural census (AC) in Lithuania was conducted in 1930. The second AC in independent Lithuania was conducted in 2003. The third AC was carried out in 2010, after Lithuania's accession to the EU. The fourth AC, to which the metadata review and data presented here relate, was carried out in 2020.

### 2. Legal basis and organization

#### *Legal framework*

The legal basis for the AC 2020 was provided by:

- the Law on Official Statistics of the Republic of Lithuania (Official Gazette, 1993, No. I-270), last amended on 19 July 2022 (No. XIV-1396);
- Official Statistics Programme 2020, Part I, which included the statistical surveys conducted by Statistics Lithuania and other bodies managing official statistics;
- Orders of the Director General of Statistics Lithuania; and
- Regulation (EU) 2018/1091 of the European Parliament and of the Council of 18 July 2018 regarding integrated statistics on agricultural holdings, that regulates and details the information that the countries of the European Union must provide.

#### *Institutional framework and international collaboration*

Statistics Lithuania is the government agency with the legal authority and responsibility for statistical surveys, including the methodological, technical, and organizational preparation of the AC as well as for the preparation of the census results. A task force was established for tackling the methodological and organisational issues arising during the preparation for the AC and the implementation thereof (Order No DJ-257 of 29 November 2018 of the Director General of Statistics Lithuania on establishment of this task force was adopted).

#### *Census staff*

The AC 2020 involved the following staff from Statistics Lithuania: nine specialists from the Agricultural, Environmental and Energy Statistics Division, one staff member from the Methodology and Quality Division, one staff member from the IT Division, three staff members from the Survey Organisation Division, and ten staff members from the Data Preparation Division. Data collection process was subcontracted, and 190 enumerators participated in it. Advertising and communication activities were also subcontracted.

### 3. Reference date and period

**Reference day:** 1 June 2020, for livestock and animal housing facilities, and for all other variables.

**Reference periods:**

- year 2020, for crops;
- the 12-month period ending on 1 June 2020, for irrigation and soil management practices, fertilization, manure management and labour force; and
- from 1 January 2018 to 31 December 2020, for rural development measures.

### 4. Enumeration period

The AC 2020 was conducted between August and December 2020. Due to the COVID-19 pandemic, most of the personnel of Statistics Lithuania teleworked from home in 2020. However, the activities continued as were planned, and census data collection started on 19 August 2020 and lasted until 31 December 2020. Some measures were taken to minimise the effect of the COVID-19 pandemic; for example, training of interviewers was conducted remotely (e-learning) and extensive use of CATI for interviews.

### 5. Scope of the census and definition of the statistical unit

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, that has a single management, and that undertakes economic activities in agriculture in accordance with Regulation (EC) No 1893/2006 belonging to groups A.01.1, A.01.2, A.01.3, A.01.4, A.01.5 or to the "maintenance of agricultural land in good agricultural and environmental condition" of group A.01.6 of ISIC within the economic territory of the Union, either as its primary or secondary activity, as it is stated in the Regulation (EU) No. 2018/1091 of the European Parliament and of the Council on integrated agricultural statistics. Regarding activities of class A.01.49 of ISIC, only the activities "Raising and breeding of semi-domesticated or other live animals" (apart from raising of insects) and "Bee-keeping and production of honey and beeswax" were included. Two types of agricultural holdings were considered: (i) farmers' and family farms; and (ii) agricultural companies and enterprises. Agricultural holdings with at least one cattle, pig, sheep, goat or poultry were included in the animal housing and manure management module.

#### ***Community-level data***

There were no community-level data collected along with the census.

### **6. Census coverage**

#### ***Geographic coverage***

The AC 2020 covered the entire country.

#### ***Cut-off threshold and other exclusions***

Lithuania applied the following threshold in the AC 2020 for all farmers' and family farms: (i) one ha of utilised agricultural area (UAA); (ii) 0.5 ha of potatoes (including seed potatoes) – outdoor or fresh vegetables (including melons) and strawberries – outdoor; (iii) 0.2 ha of aromatic, medicinal and culinary plants, flowers and ornamental plants, seeds and seedlings, nurseries; (iv) 0.3 ha of fruit trees, berries, nut trees, citrus fruit trees, other permanent crops excluding nurseries, vineyards and olive trees; (v) 0.01 ha of UAA – under glass or high accessible cover or cultivated mushrooms; (vi) 1.7 livestock units; or (vii) EUR 1000 of standard output. There were no exclusions of agricultural companies and enterprises.

### **7. Methodology**

#### ***Methodological modality for conducting the census***

The modular approach combined with the use of administrative registers was used in the AC 2020. The AC was composed of a core module and two thematic modules on labour force and other gainful activities, and animal housing and manure management. All census data related to a third thematic module, on rural development, were collected directly from administrative registers, which were also used partially for the core module, and the frame extension of this module.

#### ***Relation to other censuses***

No relationship with other censuses.

#### ***Frames***

The frame used in the AC 2020 was compiled based on the Statistical Farm Register, the Register of Agricultural and Rural Business of the Republic of Lithuania (Register of Agricultural Holdings), declarations of agricultural land, and other areas, and the Register of Livestock. The Statistical Farm Register is a list frame continuously updated several times per year including new farms and excluding farms which finished their activity. This list involves all active farms in Lithuania.

#### ***Complete or/and sample enumeration methods***

The AC 2020 used a combination of complete and sample enumeration. The core module and the frame extension of this module were collected using complete enumeration, while the two supplementary thematic modules referred to labour force and other gainful activities, and animal housing and manure management were collected using sample enumeration. Data on rural development was sourced from administrative registers using complete enumeration.

### **Sample design**

For the supplementary thematic modules, a stratified sampling was used where a simple random sampling of farmers' and family farms was selected independently from each stratum. For the labour force and other gainful activities module, a sample of 30 000 farmers' and family farms was selected, and a sample of 25 000 farms was considered for the animal housing and manure management module. The sampling sizes were allocated between strata using Neyman allocation. Holdings with income from agricultural activity per calendar year of at least EUR 8 000, certified organic farms, and holdings belonging to specific groups growing walnut trees, nurseries, perennial crop for weaving and plaiting, flax, oilseeds, tobacco, hops, aromatic, medicinal, and spice crops, seed and seedling crops, other energy, industrial and fibre crops, as well as farms raising ostriches, were completely enumerated in the labour force and other gainful activities module. For the animal housing and manure management module, a full coverage stratum was defined by agricultural holdings with a standard output of EUR 8 000 or more from livestock, certified organic livestock holdings; and those belonging to specific group keeping ostriches. The remaining farmers' and family farms were stratified using production from the previous year and municipalities. The production was computed from statistical farm registers, administrative sources, and previous statistical survey data. For the labour force and other gainful activities module, 278 strata were considered and for the animal housing and manure management module, 274 strata. The agricultural companies and enterprises were complete enumerated.

### **Data collection methods**

In the AC 2020, data was collected using CAWI, CAPI and CATI methods. Farmers' and family farms were able to complete the questionnaire through the CAWI method from 19 August to 9 September 2020. Those farms that did not complete the questionnaire using this method, were contacted in person or by phone, and data was collected using CAPI and CATI method, respectively. Due to the high Covid-19 intensity during the last few weeks of the CAWI period, in some municipalities data collection method was changed. The face-to-face CAPI interviews were changed to CATI. Two separate companies were selected during a public procurement procedure for above-mentioned data collection methods. Data on the thematic module of rural development was collected using administrative registers. Agricultural companies and enterprises completed the questionnaire using CAWI from 10 October to 16 November 2020.

### **Questionnaire(s) and items covered**

Two questionnaires, agreed with the Ministry of Agriculture of Republic of Lithuania and the Lithuanian Institute of Agrarian Economics, were used in the AC 2020: (i) the questionnaire for farmers' and family farms, which included the questionnaires for the two thematic modules as annexes to be applied to the sampled holdings; and (ii) the questionnaire for agricultural companies and enterprises. The questionnaire covered 19 out of 23 essential items recommended in the WCA 2020<sup>1</sup>.

## **8. Use of technology**

CAPI, CAWI, and CATI were used for field data collection. Some census data were collected directly from administrative registers that were also used as sources for data imputation and validation. Census results were disseminated online using GIS technologies.

## **9. Data processing**

Direct data capture was ensured by the three methods of data collection used. The data collection system contained internal checks to validate data when entered, and the questionnaire was not accepted until all errors were solved. Validation was carried out by interviewers, supervisors and staff from central department and included data format checks, completeness checks, range checks, relational checks, comparisons with previous rounds of the data collection, and comparisons with other domains in agricultural statistics. There were two types of errors: (i) ignorable, which did not cause the rejection of the questionnaire; and (ii) significant, which caused its rejection. The accepted questionnaires were re-verified. The errors were solved by re-contacting the respondents to check their answers or using administrative sources or previous surveys. Missing information from agricultural

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<sup>1</sup> The following essential items were not covered: (i) 0107 Main purpose of production of the holding; (ii) 0407 Number of permanent crop trees in scattered plantings; (iii) 0601 Use of agricultural pesticides; (iv) 0801 Household size by sex and age groups.

companies and enterprises was obtained by repeatedly re-contacting the respondent. In the case of farmers' and family farms, administrative register and previous statistical surveys were used to complete the missing data. Sampling weights were adjusted for non-response. For data capture of agricultural companies and enterprises, the ABBY Form Filler 2.5 software was used; for farmers' and family farms, the ORBEON software was employed. For data processing, analysis, and tabulations, the software used were Oracle, SAS, and R.

## 10. Quality assurance

In 2007, a quality management system, conforming to the requirements of the international quality management system standard ISO 9001, was introduced at Statistics Lithuania. The main trends in activity of Statistics Lithuania aimed at quality management and continuous development in the institution are established in the Quality Policy available at [https://www.stat.gov.lt/documents/29256/5665418/Quality\\_Policy.pdf](https://www.stat.gov.lt/documents/29256/5665418/Quality_Policy.pdf). Quality was assured and assessed through training courses, use of best practices, quality guidelines, designated quality manager, quality unit and/or senior level committee, compliance monitoring, and self-assessment. In 2019, the review of the AC 2020 statistical forms was carried out and recommendations received were implemented. Quality of the obtained statistics was analyzed during the evaluation of the indicators. Different actions were carried out to minimize non-sampling errors: Removal of ineligible units from the records, leaving unchanged the weights for the other units to minimize over-coverage errors; population checks via various administrative data sources to minimize under-coverage errors; pre-testing questionnaire, explanatory notes or handbooks for enumerators or respondents, on-line FAQ or Hot-line support for enumerators or respondents, and training of enumerators to minimize measurement errors; reminders, imputation, and weighting to minimize non-response errors. In the AC 2020, the statistics derived from sample enumeration were accompanied by estimates of sampling errors according to the sampling design used. If the coefficient of variation was higher than 30 percent, then the estimation was not published.

## 11. Data and metadata archiving

The metadata for farming structure and AC indicators was published and is available at <https://osp.stat.gov.lt/documents/10180/5118910/%C5%BDem%C4%97s+%C5%ABkio+strukt%C5%ABra+ir+sura%C5%A1ymai+%5BEN%5D+674.html>. An online dataset is available for viewing and analysing statistical information at <https://osp.stat.gov.lt/statistiniu-rodikliu-analize#/>. Anonymization of microdata was carried out using reduction of information.

## 12. Data reconciliation

There was no reconciliation process of AC 2020 data.

## 13. Dissemination of census results and microdata

Preliminary results were published through a news release on 30 November 2020 and is available at <https://osp.stat.gov.lt/informaciniai-pranesimai?articleId=9460213>. Final results were published in July 2022 in Lithuanian and English and is available at <https://osp.stat.gov.lt/en/zus2020-rezultatai/ivadas>. Census results are available at NUTS 2 level. Also, in the Database of Indicators at the Official Statistics Portal, data is available at NUTS 3 level (counties) and LAU 1 (municipalities). Statistics Lithuania actually provides access to microdata for scientific purposes. Confidential statistical data may be provided for use for scientific purposes if scientific institutions ensure the protection of the data in the way that it is not possible to directly identify respondents.

## 14. Data sources

**Eurostat.** 2022. *Integrated Farm Statistics - National quality reports 2020: Lithuania* [online]. Luxembourg. [Cited 18 April 2023]. [https://ec.europa.eu/eurostat/cache/metadata/en/ef\\_simsif\\_lt.htm](https://ec.europa.eu/eurostat/cache/metadata/en/ef_simsif_lt.htm)

**Statistics Lithuania (SL).** 2021. *Agricultural Census*. In: *SL* [online]. Vilnius, Lithuania. [Cited 18 April 2023]. <https://osp.stat.gov.lt/en/zemes-ukio-surasymai/>

## 15. Contact

Statistics Lithuania  
Agricultural Statistics Division.  
Address: 29 Gedimino Ave., Vilnius, Lithuania  
Telephone: (+370) 65090302

E-mail: [sandra.mikute@stat.gov.lt](mailto:sandra.mikute@stat.gov.lt)  
Website: <https://osp.stat.gov.lt/>