



## SLOVENIA – AGRICULTURAL CENSUS 2020 – METADATA REVIEW

### 1. Historical outline

The first agricultural census to be carried out in the independent Republic of Slovenia took place in 2000; the second one was conducted in 2010; and the most recent one, to which the metadata review and data presented here refer, was conducted in 2020. Previously, as part of former Yugoslavia, censuses of agriculture were undertaken in 1931, 1951, 1960, and 1969. In 1981 and 1991, the enumeration of agricultural holdings was conducted in the framework of the Population Census.

### 2. Legal basis and organization

#### *Legal framework*

The agricultural census legislation consisted of:

- the Annual Programme of Statistical Surveys (LPSR) (Official Gazette of the Republic of Slovenia No 68/2019 and No 106/20);
- the National Statistics Act (Official Gazette of the Republic of Slovenia No 45/1995 and No 9/2001);
- Regulation (EU) 2018/1091 of the European Parliament and of the Council of 18 July 2018 on integrated farm statistics and repealing Regulations (EC) No 1166/2008 and (EU) No 1337/2011; and
- Commission Implementing Regulation (EU) 2018/1874 of 29 November 2018 on the data to be provided for 2020 under Regulation (EU) 2018/1091 of the European Parliament and of the Council on integrated farm statistics and repealing Regulations (EC) No 1166/2008 and (EU) No 1337/2011, as regards the list of variables and their description.

#### *Institutional framework and international collaboration*

The Statistical Office of the Republic of Slovenia (SURS) was the census-executing institution with the authority for collecting, compiling, and publishing statistical information. Topics related to the AC were discussed and presented prior to the census to the Council for Statistics of Agriculture, Forestry and Fisheries. Three working groups were formed with representatives of key users of statistical results in the field of agriculture, forestry, and fisheries. The AC 2020 was partially funded by the EU based on Article 13 of the regulation (EU) 2018/1091 of the European Parliament and of the Council.

#### *Census staff*

The AC 2020 involves staff not fully dedicated to census activities. Supporting departments helped subject methodologist in all activities when preparing the census. Only some subject methodologists assigned directly, worked on agricultural census activities: three subject methodologists, five IT staff, one sampling methodologist, and three general methodologists. To collect data for the core module, 36 interviewers were involved supervised by one to three supervisors, while 27 interviewers and one to three supervisors carried out the collection of data for the thematic modules.

### 3. Reference date and period

**Reference day:** 1 February 2020, for livestock and animal housing.

#### **Reference periods:**

- from 1 January to 31 December 2020 for land variables, irrigation and soil management practices;
- from 2 December 2019 to 1 December 2020 for manure management and labour force; and
- from 1 January 2018 to 31 December 2020 for rural development measures.

### 4. Enumeration period

The core module was sourced from administrative registers and, for those holdings without administrative data, through CATI method. The latter was collected from July to August 2020. It was planned to start CATI in June, but due to the COVID-19 pandemic there were delays on gathering administrative data as the deadlines for farmers to provide the information were prolonged. For that reason, CATI was postponed for over a month. Also, there were difficulties recruiting temporary staff. The modules of labour force and other gainful activities and animal housing and manure management were collected from November 2020 to January 2021.

## 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 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, only the activities "Raising and breeding of semi-domesticated or other live animals" (except for raising of insects) and "Bee-keeping and production of honey and beeswax" were included.

### **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**

Slovenia applied the following thresholds in the AC 2020 in order to meet 98 percent of the total UAA (excluding kitchen gardens) and 98 percent of the livestock units (core module + frame extension):

- at least one ha of utilised agricultural area (UAA); or
- less than one ha of UAA, but: (i) at least 0.1 ha of UAA and 0.9 ha of forest; or (ii) at least 0.3 ha of vineyards and/or orchards; or (iii) two or more livestock units (LSU); or (iv) 0.15 to 0.3 ha of vineyards/orchards and one or two LSU; or (v) more than 50 beehives; or (vi) the holdings are market producers of vegetables, herbs, strawberries, mushrooms, flowers or ornamental plants.

Threshold for thematic modules were respected in core module.

In addition, the following thresholds were applied for the thematic modules: (I) at least five ha of UAA; (II) two ha of arable land; (III) 0.5 ha of potatoes, fresh vegetables, strawberries or aromatic crops; (IV) 0.2 ha of medicinal and culinary crops, flowers and ornamental plants, seeds and seedlings, or nurseries; (V) 0.3 ha of fruit trees, berries, nut trees, citrus fruit trees, olive trees, other permanent crops excluding nurseries and vineyards; (VI) 0.1 ha of vineyards; (VII) 100 m<sup>2</sup> of greenhouse or mushrooms; or (VIII) 1.7 LSU.

The thresholds for the thematic modules were respected when collecting core module.

## 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. Some census data for the core module, the frame extension of this module, and the labour force and other gainful activities module, and all census data related to a third thematic module, on rural development, were collected directly from administrative registers.

### **Relation to other censuses**

No relationship with other censuses.

### **Frames**

The list of agricultural holdings was based on the Statistical Register of Agricultural Holdings (SRAH) kept by the SURS, which is annually updated with administrative registers and statistical surveys available.

### **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 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 thematic modules of labour force and other gainful activities, and animal housing and manure management, a sample was selected using stratified random sampling. The stratification was made based on NUTS2 level, four size classes of agricultural holdings and agricultural enterprises. The sample size was determined by making experimental samples different sizes and estimating different response rates and was allocated using proportional allocation. Full coverage strata were defined for agricultural enterprises, and big family farms. Bias caused by non-response was reduced considering weighting adjustments, using adjustment groups defined by four size classes and two regions.

### ***Data collection methods***

The AC 2020 was conducted using the CATI method in combination with the use of administrative data sources kept by the Ministry of Agriculture, Forestry and Food (MAFF) and other related agencies. The data from agricultural enterprises were collected by printed questionnaires via the mail out/mail back method.

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

Three questionnaires were used for AC 2020 data collection: (i) a questionnaire for the core module for those family farms which did not have data in administrative registers; (ii) a questionnaire for family farms for the thematic modules on labour force and other gainful activities, and animal housing and manure management; and (iii) a questionnaire for legal entities for the thematic modules on labour force and other gainful activities, and animal housing and manure management.

The census questionnaires covered 20 out of 23 essential items recommended in the WCA 2020.<sup>1</sup>

## **8. Use of technology**

CATI was used for field data collection. Some census data were collected directly from administrative registers. Results of the AC 2020 were disseminated online.

## **9. Data processing**

Direct data capture was ensured by the CATI method, while manual data entry was used for the postal method. Staff from central department carried out data validation using data format checks, completeness checks, range checks, relational checks, and data flagging. Blaise software was used for CATI data collection. Data were edited with the combination of systematic corrections, individual corrections, and imputation procedures. The following imputation methods were used: mean imputations, random and sequential hot-deck imputations, nearest neighbour imputation. Sampling weights were adjusted for non-response but were not calibrated to the number of agricultural holdings from the census core module. Data editing, analysis and tabulation were carried out by SURS using the SAS software.

## **10. Quality assurance**

SURS operates on the basis of the National Statistics Act and Regulation (EC) No. 223/2009 on European statistics; in performing its tasks it follows the general principles of quality management, the European Statistics Code of Practice, and the Fundamental Principles of Official Statistics. In line with the stated, SURS declares that it considers the following principles: professional independence, process orientation, quality of products and services, planning of improvements, stimulating working environment for employees, data providers-friendly official statistics, user-oriented official statistics. Quality was assured and assessed through training courses, use of best practices, quality guidelines, and compliance monitoring. Some actions were carried out to minimise non-sampling errors: maintain of ineligible units in the registers, recalculate weights of all units by considering the corrected

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

population, and update administrative sources to minimise coverage errors; training of enumerators to minimise measurement errors; follow-up interviews, reminders, imputation and weighting to minimise non-response errors. Some administrative registers collected data for crops at the national level that were used to check the bias of the AC for these variables.

## 11. Data and metadata archiving

Data on AC 2020 was stored in one database, with no identification information. An online database is available to users at <https://pxweb.stat.si/SiStat/si/Podrocja/Index/85/kmetijstvo-gozdarstvo-in-ribistvo>. A national metadata is available at <https://www.stat.si/StatWeb/File/DocSysFile/8048/15-119-ME.pdf>. In the SURS, dissemination of statistically protected microdata to researchers is organized through the function of the Data Protection Committee, the advisory body of the Director General, in compliance with the system of rules and procedures related to the dissemination of statistically protected microdata to researchers, and the use of software for the statistical protection of data. Although microdata was not disseminated, it is available according to special conditions to researchers for research purposes. Basic instructions concerning the access and the use of statistically protected microdata are available at <http://www.stat.si/StatWeb/en/StaticPages/Index/For-Researchers>.

## 12. Data reconciliation

There was no reconciliation process of the AC 2020 data.

## 13. Dissemination of census results and microdata

Results were published through news releases in Slovenian and English. First provisional data of the AC 2020 was published on 29 March 2021 (available at <https://www.stat.si/statweb/en/News/Index/9459>). More detailed provisional data was published on 13 October 2021 and is available at <https://www.stat.si/statweb/en/News/Index/9883>. The final data of the AC 2020 was published on 18 March 2022 (available at <https://www.stat.si/statweb/en/News/Index/10211>), final results for the labour force and manure management module was published on 21 July 2022 and is available at <https://www.stat.si/StatWeb/en/News/Index/10466>, while final data, related to typology and economic size of agricultural holdings was published on 15 November 2022 and is available at <https://www.stat.si/StatWeb/en/News/Index/10703>). The SURS enables researchers to access microdata for the purpose of research (<https://www.stat.si/StatWeb/en/StaticPages/Index/For-Researchers>).

## 14. Data sources

**Eurostat**. 2022. *Integrated Farm Statistics - National quality reports 2020: Slovenia* [online]. Luxembourg. [Cited 13 February 2023]. [https://ec.europa.eu/eurostat/cache/metadata/en/ef\\_simsif\\_si.htm](https://ec.europa.eu/eurostat/cache/metadata/en/ef_simsif_si.htm)

**Statistical Office of the Republic of Slovenia (SURS)**. 2021. *Farm Structure Survey – Agricultural Census*. Methodological Explanation (also available at <https://www.stat.si/StatWeb/File/DocSysFile/8048>)

## 15. Contact

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