Food and Agriculture Organization of the United Nations

SPAIN – AGRICULTURAL CENSUS 2020 – METADATA REVIEW

1. **Historical outline**

The first agricultural census (AC) in Spain was carried out in 1962 and, since then, ACs were conducted in 1972, 1982, 1989, 1999, and 2009. The AC 2020, to which the metadata review and data presented here refer, was the latest census conducted in the country.

2. **Legal basis and organization**

Legal framework

The agricultural census legislation consisted of:

- law No. 12/1989, according to which statistics forming part of the National Statistical Plan (NSP) are mandatory;
- the 2019 annual program of the 2017-2020 NSP, adopted by Royal Decree 1518/2018 of December 28, which includes mandatory operations of the AC 2020.
- 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

The National Institute of Statistics (INE) is the body responsible for conducting the AC 2020 in the country. The AC 2020 was conducted in close and extensive collaboration with the Ministry of Agriculture, Fisheries and Food (MAPA). The INE signed a partnership agreement with the Basque Autonomous Community, whereby its statistics institute (EUSTAT) conducted the fieldwork and completed all of the questionnaires in its area.

Census staff

From the beginning of the preliminary work of the AC 2020, an interdisciplinary team with regular meetings was formed, whose mission was to direct and supervise the work to be carried out in order to meet the objectives of the project.

The staff who work directly in the AC is as follows:

- 5 statisticians
- 1 cartographer
- 2 desk-staff
- 2 IT and data processing specialists
- 1 communication specialist
- 2 fieldwork specialists.

The data collection has been carried out by a specialized company, subcontracted due to the lack of internal resources except holding from Basque Country that will be collected by the local statistical institute (Eustat).

In addition, two contracts have been signed with a company specialising in agricultural matters, to provide support in all the census tasks, especially in editing procedures.

3. **Reference date and period**

Reference day: 30 September 2020 for inventory items, such as livestock numbers.
Reference periods:
- the agricultural year 2020 (from 1 October 2019 to 30 September 2020) for characteristics relating to land and labour force, etc.
- the past three years (from 1 January 2018 to 31 December 2020) for rural development support and landscape characteristics.

4. **Enumeration period**

   The enumeration was carried out from October 2020 to March 2021. Regarding administrative information, a first file with provisional data was received in July 2020, and final data was received in November 2020. The reference period for administrative data was 2020, for which farmers have applied for support under the Common Agricultural Policy. Due to the COVID-19 pandemic, this information was slowly updated, and the Ministry of Agriculture extended the deadline for the CAP grants requests, which meant at least 45 days of delay.

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

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

   The *statistical unit* for the AC 2020 was the agricultural holding, defined both technically and economically, which has a single management, and which undertakes agricultural activities listed in annex I of the European Parliament and Council Regulation No. 2018/1091 within the economic territory of the EU, as either its primary or secondary activity.

   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

   For the AC 2020, the agricultural holdings that met at least one of the following thresholds were included:
   - 5 ha of utilised agricultural area (UAA)
   - 2 ha of arable land
   - 0.5 ha of UAA used for fresh vegetables and strawberries, and potatoes
   - 0.3 ha of UAA used for fruit trees, berries, nut trees, citrus fruit trees, olive trees, other permanent crops excluding nurseries and vineyards
   - 0.2 ha of UAA used for aromatic, medicinal and culinary plants, flowers and ornamental plants, seeds and seedlings, nurseries
   - 0.1 ha of UAA used for vineyards
   - 100 m2 of UAA use for greenhouses and cultivated mushrooms
   - 1.7 livestock units.

   With these thresholds, 98 percent of the total utilized agricultural area (excluding kitchen gardens) and 98 percent of the livestock units of national total were covered.
   However, for the NUTs of Galicia, these thresholds were lowered and an extended frame was formed and studied by means of a sample.

7. **Methodology**

   Methodological modality for conducting the census
   The modular approach combined with the use of administrative registers was implemented in the AC 2020. The AC was composed of a core module and three thematic modules on labour force and other gainful activities, rural development, and animal housing and manure management. Administrative registers were used to collect data for the core and the three thematic modules.

   Relation to other censuses

   No relationship with other censuses.

   Frame

   The frame was obtained from the INE Register or Census Directory. The Register lists all the reporting units considered to be potential agricultural holdings, including their relevant contact information. The Register was based on the use and integration of data from three key sources: (i) the Integrated Administrative Control System Register; (ii) the Spanish Agency for Tax Administration; and (iii) other administrative and INE statistical sources.

   Complete and/or sample enumeration methods

The AC 2020 was conducted using the combination of complete enumeration and sample enumeration. Some of the census data were also collected from administrative records. Direct collection has been carried out for information on the variables of the modules of labour force and other gainful activities, animal housing and manure management. For the information of the Rural Development module, the administrative registers of the rural development aids were used.

Sample design

The variables regarding the thematic modules on labour force and other gainful activities, and animal housing and manure management were investigated by stratified random sampling using optimal allocation. The sampling frame for the module of labour and other gainful activities was the pre-census directory formed by administrative sources referred mostly to 2019. For the module of animal housing and manure management, the sampling frame was a subset of the previous one, comprised only of those holdings that contain livestock head of cattle, goats, sheep, pigs or poultry.

The holdings that met the following thresholds were included with certainty in the sample: (i) 5 000 has of UAA; (ii) 1 000 has of land under cultivation (LUC); and (iii) 5 000 livestock units (LU). Approximately 0.1 percent of the holdings were included in each Autonomous Community (NUT2). With the remaining holdings, the Sigma Deviation Rule (Julien and Maranda, 1990) was applied, independently in each combination of Autonomous Community and two-digit technical-economic orientation (OTE2), to the variables UAA, LUC and LU to obtain other take-all holdings.

The sampling frame for the module of labour and other gainful activities was stratified by Autonomous Community, OTE2, and between 1 to 6 size groups, according to the characteristics of the distributions of the auxiliary variables and the number of holdings. The auxiliary variables that define the size were UAA and LUC in the main agricultural OTE2 and UAA and UG in the main livestock OTE2. For each of these variables, the size groups were initially created by applying the Cumulative Square Root of the Frequency Rule (Cochran, 1977). For the module of animal housing and manure management, the sampling frame was stratified by combining Autonomous Community, OTE2, and between 1 to 5 size groups, according to the characteristics of the distributions of the auxiliary variable and the number of holdings. The auxiliary variable defining size was the LU.

The precision requirements were determined by following Annex V of Regulation 2018/1091 and considering different level: (i) Autonomous Community with at least 10 000 holdings in the frame; or (ii) nomenclature of the territorial units of Spain (NUTS) with at least 1,000 holdings; or (iii) National Level, if the above conditions were not met.

For the module of labour and other gainful activities a maximum relative error of five percent was set to establish the sample size, while for module animal housing and manure management a 7.5 percent error was considered. When precision level for Autonomous Community was required, the agricultural and livestock characteristics considered relevant by the Regulation were those which fulfil the following conditions:

- for agricultural characteristics: those that represent 7.5 percent or more of the UAA of the Autonomous Community; and
- for livestock characteristics: those that represent 7.5 percent or more of the LU of the Autonomous Community and more than five percent of the national total.

The samples were obtained by applying the Permanent Random Number technique with positive coordination to get maximum overlap between samples of the two modules.

Data collection method(s)

The AC 2020 data were collected in two phases:
- Phase 1: data were collected from October 2020 to March 2021 using postal mail, CAWI and CATI methods; and
- Phase 2: data collection by face-to-face interview using CAPI method was planned to follow up with holders that had not yet responded at the end of phase 1. Due to the pandemic situation caused by covid-19, the personal interview collection phase was cancelled. Instead, an attempt will be made to recontact five percent of informants for whom data was not collected.

Questionnaire(s) and items covered

Two types of questionnaires were used for AC 2020 data collection: (i) a questionnaire for the AC; and (ii) a questionnaire for supplementary information on labour force, other gainful activities, animal housing and manure management.

The AC 2020 questionnaire covered 20 out of 23 essential items recommended in the WCA 2020.[1] The items were collected both by administrative register (70% of farms) and by direct collection (the remaining 30%). The items collected by administrative register were the same as those collected by direct questionnaire.

8. Use of technology

In the AC 2020, technologies were used for the following purposes: (i) to collect some census data directly from administrative registers, to reduce the response burden; (ii) for data capture using CAWI; and (iii) for the online dissemination of census results.

Regarding computer support systems, INE has developed in recent years a multichannel collection system (IRIA) for the collection of economic and social surveys. In order not to influence the ordinary collection of surveys, a second specific IRIA system was implemented for the census. The tasks to be carried out prior to and during the census collection are: installation, design of the questionnaire for each collection channel, configuration and parameterization of the system, administration, monitoring, exploitation of data and attention to users. These tasks will be subcontracted.

9. Data processing

The census data collected using the postal mail, CAWI and CATI methods and by administrative register were consolidated into a combined database.

Editing processes were established to ensure the consistency of the information. The execution of manual, semi-automatic and automatic editing tasks is foreseen. Regarding computer support systems, there were a customized interactive application for central data manual debugging. The design and the development parts of this interactive application was outsourced. Subsequently, other automatic editing processes were implemented in order to solve and correct inconsistencies. The intermediate and final files of administrative data collected and data directly collected were analysed. The units were recontacted and the error lists were determined, for further debugging or editing. Subsequently, data from administrative sources and those obtained by direct collection were integrated. Then the final data file was obtained.

Once data editing was finalized, some processes to calculate aggregated variables and other information needed for the publication were initiated.

10. Quality assurance

For that purpose, Member States shall transmit a quality report describing the statistical process, and in particular:

(a) metadata describing the methodology used and how technical specifications were achieved by reference to those laid down by the Regulation;

(b) information on compliance with the minimum requirements for the sampling frames used, including in developing and updating them, as laid down in European Regulation

11. Data and metadata archiving

The published microdata was at the level of individual agricultural holdings, without identification information. The module and the ad-hoc data shall be linked to the core data listed in Annex III at the individual agricultural holding level for the same reference year. The records provided shall include the sampling weights and information on stratification.

Member States shall transmit the data and metadata using a technical format specified by Eurostat. The data and metadata shall be provided to the Commission (Eurostat) through the single-entry point services.

12. Data reconciliation

With the information from AC 2020, the agricultural labour input (ALI) data series was revised, from 2017 to 2019, since the last survey was conducted in 2016.

13. Dissemination of census results and microdata

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[1] The following essential items were not covered: (i) 0107 Main purpose of production of the holding; (ii) 0108 Other economic activities of the household; and (iii) 0601 Use of agricultural pesticides.

The first technical project report of the AC 2020 was published on the INE website in September 2020 (https://www.ine.es/censoagrario2020/presentacion/innovador/docs/proyecto.pdf). The final AC results were published on the INE website in May 2022 and are available at https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176851&menu=resultados&idp=1254735727106.

The access of external users to the AC 2020 microdata was provided.

14. Data sources

National Statistical Institute. 2020. Technical project of the Agricultural Census 2020. Madrid, Spain, September 2020. (also https://www.ine.es/censoagrario2020/presentacion/innovador/docs/proyecto.pdf).

15. Contact

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