ITALY – GENERAL CENSUS OF AGRICULTURE 2020 – METADATA REVIEW

1. Historical outline

The General Census of Agriculture (GCA) is carried out every ten years in Italy. Agricultural censuses have been conducted in the years 1930, 1961, 1970, 1982, 1990, 2000, 2010, and the latest in 2020, to which the metadata review and data here relate.

2. Legal basis and organization

Legal framework

The agricultural census legislation consisted of:
- Article 15 of Legislative Decree No. 322/89 identifies the National Institute of Statistics (Istat) as the agency in charge of census activities;
- General Census Plan of the Seventh General Agricultural Census approved by the Istat Council on 11 June 2020;
- Law No. 205/2017: "State budget for the financial year 2018 and multi-year budget for the three-year period 2018-2020", article 1, paragraphs 227 to 237.
- 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 institution responsible for carrying out the GCA 2020 was Istat. The regions and the autonomous provinces of Bolzano and Trento decided the level of their involvement in the census by choosing between three organizational models[1]: basic, medium and high participation. Among the 21 Regions and autonomous provinces,13 adopted the basic level, 2 adopted the medium and 6 the high participation. In addition to Istat and the regions and autonomous provinces, the following organizations participated in the census activities: Ministry of Agricultural, Food and Forestry Policies (MAFFP), and the Agency for Disbursements in Agriculture (AGEA), the Italian Integrated Administration and Control System (IACS) authority. A specific GCA Committee was created. It included experts from the above mentioned institutions. Funds for supporting the census costs derived from the Italian Government and from a grant supported by EUROSTAT.

Census staff

The GCA 2020 involved 60 Istat experts and reviewers and about 6.000 enumerators.

3. Reference date and period

Reference days:

- 1 December 2020, for livestock (except poultry, for which the average number in a 12-month period including the 1 December 2020 was considered) and for all other variables; and

- 7 January 2021, for items on the identification of the holding and legal status.

Reference periods:

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[1] Principal characteristics of the models: (i) Basic participation: the regions monitor the census through macro checks on reports, and of the questionnaires collected with the CAWI, CATI and CAPI methods taking into account particular domains agreed with Istat; (ii) Medium-size participation: the same as the basic model plus the control of questionnaires collected with CAWI, CATI and CAPI methods, on a subset of relevant/influential companies, for particular domains identified with Istat, and correction of micro-data through desk activities; and (iii) High participation: the same as the medium-size model plus re-interviews with CATI and CAPI methods.

- the agricultural year (from 1 November 2019 to 31 October 2020) for land use, crops, management of the holding, land tenure, irrigation, animal production method, poultry, other gainful activities, and labour force;
- from 1 January to 31 December 2020, for animal housing, manure management; and
- from 1 January 2018 to 31 December 2020 for management innovation and rural development support.

4. Enumeration period

Data collection was conducted from 7 January to 30 July 2021. Istat planned to start data collection in October 2020 until March 2021. Italy's census involved circa 1 700 000 units and 6 000 enumerators but the lockdown due to COVID-19 pandemic slowed down activities. New training plans were implemented for CATI and CAWI. Therefore, data collection was postponed to 2021. Istat used CAWI, CATI and CAPI; CATI was carried out by an external company, while CAPI was carried out using the same territorial offices in charge of compiling the yearly CAP forms.

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 GCA 2021 covered the entire country.

Cut-off threshold and other exclusions

The following thresholds were applied for the agricultural holdings in the GCA 2020: (i) 0.2 ha of UAA; (ii) 0.1 ha of grapes - outdoor; (iii) 0.01 ha of UAA - under glass or high accessible cover or cultivated mushrooms; (iv) one livestock unit; or (v) three beehives. Thresholds were lowered compared to Regulation (EU) 2018/1091.

7. Methodology

Methodological modality for conducting the census

The AC was composed of a core module and three thematic modules on labour force and other gainful activities, on rural development, and on animal housing and manure management. However, the classical approach (one-off complete enumeration) was used in the GCA 2021, even for the thematic modules. Some census data for the core module and all census data regarding the rural development module were collected directly from administrative registers.

Relation to other censuses

No relationship with other censuses.

Frames

The frame used in the CGA 2020 was the Statistical Farm Register, held by Istat and updated annually based on the integration of various sources. It comprises a list of agricultural holdings defined following the context of the European Union (EU) Regulation 2018/2091 and accepted in the General Plan of the

GCA. This definition is very broad and can include both agricultural businesses and family units that are believed to carry out an agricultural activity. The list was built by integrating several administrative and statistical registers and includes units that in recent years have shown signs of agricultural activity, although they are not market-oriented.

Complete or/and sample enumeration methods

The CGA 2020 was a complete enumeration of all agricultural holdings.

Sample design

No sampling was used.

Data collection methods

In the GCA 2020, data was collected using CAPI, CATI and CAWI, and respondents were able to choose between the different methods. Almost 15 percent of the holdings used the CAWI method, approximately 39 percent chose both CATI methods, inbound and outbound channel, and 46 percent used the CAPI method. Data collection through the CAPI method was carried out by the network of almost 2 200 Agricultural Assistance Centres (AAC) present in all regions and autonomous provinces. Although data collection modes that are not based on face-to-face physical interviews were empowered due to the COVID-19 pandemic, the data collection methods remained the same.

Regarding administrative data as a census data source, identification data and legal status of the holding were pre-compiled in the questionnaire with information from the Farm Register; and several variables regarding labour force, ecological areas, livestock, etc., were obtained from different sources, for example, the livestock register. All census data regarding rural development support were obtained from AGEA administrative data.

Questionnaire(s) and items covered

One questionnaire was used in the GAC 2020. The questionnaire covered 20 out of 23 essential items recommended in the WCA 2020[2]. The items from administrative sources referred to information, at the individual holding level, on subsidies received from the European Union under the CAP (Common Agricultural Policy).

8. Use of technology

CAWI, CATI and CAPI 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. Aerial photos were used for better geo-localization of agricultural holdings. Results were disseminated online through specialized websites and corporate data warehouse. The Survey Management System (SGI) was developed for monitoring the phases of the census process.

9. Data processing

Direct data capture was ensured by the three methods of data collection used. Data editing was carried out during data collection and continued after completion and was shared by Istat and the regions according to the chosen participation model. Supervisors, and staff from local and central departments carried out data validation through data format checks, range checks, relational checks, comparisons with previous rounds of the data collection, and comparisons with other domains in agricultural statistics. Part of the validation process was done using the SGI system. Some administrative registers were considered for data validation and imputation process. Imputation methods included random hot deck and nearest neighbour imputation. Data validation and correction were carried out using SAS, R, Banff (from Istat).

10. Quality assurance

Istat has a quality management system. Although Istat has not formally adopted a specific quality management model, like TQM or EFQM, its quality policy is based on most of the core values of such models. Quality assurance and assessment procedures included training courses, quality guidelines,

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[2] The following essential items were not covered: (i) 0407 Number of permanent crop trees in scattered plantings; (ii) 0601 Use of agricultural pesticides (for each tree crop); and (iii) 0801 Household size by sex and age groups.

designated quality manager, quality unit and/or senior level committee, and compliance monitoring. Istat implemented different systems to ensure the quality of the GCA 2021. The SGI was a web application that monitored the phases of the collection process. A system was implemented including rules of correctness, compatibility, consistency and correspondence with administrative and statistical data, in compliance with the practices recommended by Eurostat for checking and correcting data from statistical surveys on businesses.

In order to foster the degree of collaboration of the respondents and the commitment of the various census bodies, Istat carried out an integrated communication campaign through a plurality of actions and tools, both traditional (billboards and national and local press) and digital. Several actions were carried out to minimize non-sampling errors in the GCA 2020: removal of ineligible units from the records, leaving unchanged the weights for the other units to minimize over-coverage error; the inclusion of the frame extension in the population frame to reduce under-coverage error; the most up-to-date contact information possible was used to build the reference list to minimize contact error; 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; follow-up interviews, reminders, and imputation to minimize non-response errors.

11. Data and metadata archiving

National reference metadata is available at https://www.istat.it/it/archivio/252629.The confidentiality provisions applied are those foreseen by the Legislative Decree of 9 September 1989, No 322 (concerning the statistical confidentiality) as amended by Legislative Decree No 281/99, Legislative Decree of 30 June 2003.

12. Data reconciliation

There was no reconciliation process of GAC 2020 data.

13. Dissemination of census results and microdata

A first set of infographics was released on 6 July 2022 and is available at https://www.istat.it/it/archivio/272689. Some first results at national level were published on 28 June 2022 through a news release available at https://www.istat.it/it/archivio/272404. Results for Regions and Autonomous Province were released as a supplement on 9 August 2022 through a news release available at https://www.istat.it/it/archivio/273753. More detailed information was published on 23 September 2022 through a news release available at https://www.istat.it/it/archivio/274950. A website dedicated to the GCA 2021 is available at https://7censimentoagricoltura.it/, containing the already published results and those in the process of being published. The regional data is available at NUTS level 2. Final census microdata was released in November 2023. Final census tables were released on 29 January 2024 and are accessible online at https://esploradati.istat.it/databrowser/#/it/dw/categories/IT1,Z1100AGR,1.0/CENSAGR. Further tables will be released in May 2024.

14. Data sources

Eurostat. 2023. *Integrated Farm Statistics - National quality reports 2020: Italy* [online]. Luxembourg. [Cited 12 June 2023]. https://ec.europa.eu/eurostat/cache/metadata/en/ ef_simsif_it.htm.

National Institute of Statistics (Istat). 2021. 7° Censimento Generale Agricoltura. In: *Istat* [online]. Rome, Italy. [Cited 17 September 2021]. http://7censimentoagricoltura.it/.

National Institute of Statistics (Istat). 2020. *Piano Generale di Censimento.* General Census Plan (also available at https://www.istat.it/it/files//2016/03/PGC_AGR.pdf)

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