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PORTUGAL - Census of Agriculture 2009 – Explanatory notes

1. Historical Outline

In Portugal the series of agricultural and livestock surveys dates back to the first half of the last century. In fact, the first exhaustive, systematic and organized listing of statistical data on the Portuguese agriculture occurred in 1934.

The first "General Census on Agriculture" that was harmonized with the European Union was held in 1989, exhaustively and simultaneously across all regions in the country. Subsequently, farm structure surveys were held in 1992, 1995 and 1997, followed by the 1999 General Agricultural Census and the 2003, 2005 and 2007 sample iterations.

2. Legal Basis and Organization

The National enabling legislation is Law No 22/2008 laying down the principles, rules and structure of the National Statistical System (NSS) and Decree-Law No 166/2007, approving the organization of Statistics Portugal.

The Instituto Nacional de Estatística INE (Statistics Portugal) was the entity authorized and responsible for conducting the Census, that was conducted in cooperation with the Ministry of Agriculture, Rural Development and Fisheries, in particular the Regional Directorates of Agriculture and Fisheries and the Planning and Agro-Food Policies Office, and, in the Autonomous Regions, with the Regional Statistical Office of the Azores, the Regional Directorate for Community Agricultural Affairs of the Azores, the Regional Directorate of Statistics of Madeira, and the Regional Directorate for Agriculture and Rural Development of Madeira. The Agriculture and Environment Statistics Unit of the Economic Statistics Department and the Data Collection Department were the two units that coordinated the operation at the national level.

3. Reference Period or Date

There were four reference periods for the Census data, the reference period being dependent on the specific characteristic:

(1) Area and labour force - crop year 2008/2009, 1 November 2008 to 31 October 2009
(2) Livestock and some characteristics related to the household - day of the interview a reference date between November 2009 and October 2010,
(3) Related to animal grazing, animal housing, manure application and manure storage and treatment facilities - last 12 months
(4) Related to irrigated area, soil analysis, landscape features and support for rural development - last 3 years

4. Enumeration Period

The enumeration period started November 2009 and ended October 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.

Portugal applied the threshold of 1 ha of utilised agricultural area for the mainland and lower threshold for the autonomous regions.

6. Geographic Coverage

Covered the entire country.

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7. Exclusions and Cut-Off Thresholds

None noted other than those stated as the minimum threshold of agricultural activity in the national definition of an agricultural holding.

8. Methodology

Use of the FAO Modular Approach
No

Frame
The frame consists of all the agricultural holdings in Portugal. The frame was a list of producers prepared by Statistics Portugal based on it extensive statistical and administrative data files and sources. The result was a table containing 506,840 agricultural holders

Complete or Sample Enumeration Methods
The 2009 Agricultural Census was an enumeration of all agricultural holdings even for characteristics referring to other gainful activities carried out by the labour force and for the characteristics of the Survey on Agricultural Production Methods, which pursuant to EU legislation could be a sample survey.

Sample Design
Not applicable.

Collection Method
The census was conducted through face-to-face interviews, and collection was based on paper questionnaires. For the first time in Portugal in terms of agricultural surveys, most interviewers (86.3%) were also responsible for the recording of data on the laptops they were given.

The data recording process was characterised as "heads up", given that the tailor-made software application to support the agricultural survey system of Statistics Portugal (SAGR) supplied instantaneous feedback to the staff member using a laptop to record data electronically regarding the information that was being recorded.

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.

Portugal included some additional characteristics and variables to address national requirements: bookkeeping; membership in agricultural associations; farm succession; management of waste; access to public roads.

Three separate questionnaires were designed, one for the Mainland and one for each Autonomous Region (Azores and Madeira). Although similar in many respects, they reflect a number of regional specificities, notably as regards the existence/separate identification of certain temporary crops (sugarcane, sweet potato or yam), permanent crops (subtropical fruit and tea), and machinery and equipment.

For the mainland questionnaire, in addition to a set of specific questions for each agricultural region, specific validation rules were also implemented in the data entry system for each region, so as to identify and validate certain characteristics.

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Controls to Minimize Non-Sampling Errors

The primary approach to avoiding and minimising incorrect or incomplete data included:

(1) Interview techniques (interpretation of the questions) – asking questions in a way to avoid interpretation,

(2) Outline of the agricultural holding – preparation of an outline of the agricultural holding, to be used as an auxiliary tool in subsequent analyses. The outline would be duly identified and attached to the questionnaire,

(3) The "Observations" section of the questionnaire was designed to include all information deemed relevant by the interviewer, which would help to validate and analyse collected data after the interview.

Innovative Methodologies/Practices

To address the needs of the academic community Statistics Portugal established a protocol with the Ministry of Science, Technology and Higher Education, to facilitate micro data access for research purposes. Researchers must apply to the Office of Planning, Strategy, Assessment and International Relations for access.

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

Interviewers used laptops to enter data electronically. The data entry software program included a series of range and consistency edits that allowed for an initial check of the data, enabling the interviewer to confirm or correct entries in the field.

Validation rules for the data in both the data entry and headquarters processing systems could trigger errors failures that, depending on their seriousness or importance, could require a solution in order for the record to proceed. Those procedures were an invaluable support at an early stage of data analysis/validation.

10. Data Dissemination and Use

Statistics Portugal published the initial results December 2010. The final results were released May 2011. The information is available online from Statistics Portugal's website as a database or as a publication. The available information includes methodology and other Metadata of value to data users.

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11. Census Data Quality

In addition to validating the Census information identified by warning and fatal errors, aggregate data and micro data were also analysed. Information was analysed through the SAGR software application, by using features specifically developed for the purpose, in particular: totalizers, selections of holdings and comparison with external sources (micro data and aggregate data). There was also extensive use made of the available administrative data.

For budgetary reasons the Census did not include the planned quality survey, to estimate coverage errors, double-counting and content errors.

12. Data Sources

Eurostat:
http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural_census_2010

Final report:
http://ec.europa.eu/eurostat/documents/749240/749313/PT_NMR_FSS_2010.pdf/a83155db-7dfd-42ae-8ebc-042456a6688b

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