SPAIN - Census of Agriculture 2009 – Explanatory notes

1. Historical Outline

Since Spain's accession as a full member to the European Community on 1 January 1986, the Instituto Nacional de Estadística (INE) or, National Statistics Institute joined the Community programme of surveys on the structure of agricultural holdings – an agricultural census every 10 years (1989, 1999, 2009) and 3 farm structure surveys between 2 censuses . Prior to joining the EU Spain conducted a census of agriculture in 1962, 1972, and 1982.

As there is no statistical record on agricultural holdings, agricultural censuses are particularly useful for updating the frame used for sampling in the intercensal period.

2. Legal Basis and Organization

The National Statistics Institute (INE) is the institution with the authority and responsibility for the collection, compilation and publication of statistical information.

Laws 4/1990 and 13/1996 state that statistics forming part of the National Statistical Plan, and specifically those whose compilation is a EU requirement, are mandatory. The current National Statistical Plan is the National Statistical Plan 2009-2012 adopted by Royal Decree 1663/2008, which includes operations of the 2009 Agricultural Census and the Survey on Production Methods (operations 5001 and 5003 respectively)

Given the complexity of the Census and to foster coordination with other cooperating government bodies, Royal Decree 972/2009 of June 2009 was passed.

To implement this Royal Decree, in December 2009 Ministerial Order EHA/3475/2009 was Enacted, establishing the rules binding the organization and execution of the 2009 Agricultural Census.

3. Reference Period or Date

For characteristics relating to land and labour force (including OGA), the reference period is the agricultural year 2009, which is 1 October 2008 to 30 September 2009.

For livestock, the reference date is 30th September 2009.

For rural development and landscape characteristics, the reference period is the past three years, or 1st January 2007 to 31st December 2009.

4. Enumeration Period

Enumeration took place October 2009 to April 2010 in 3 phases - postal phase, telephone phase (CATI) and personal interview phase (PAPI).

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.

In line with the EU legislation, the following population was surveyed in the agricultural census:

- Agricultural holdings with at least 1 ha of utilised agricultural area (UAA).
- Agricultural holdings with less than 1 ha of UAA used for specialized crops
- Agricultural holdings with one or more livestock units (LSU) and a total standard output (TSO) equal to or above 0.75 economic size of holdings (ES).

As in all EU countries, purely forestry holdings are excluded from the Census, where they do not meet the minimum threshold conditions. This is because the Census is for agricultural holdings only. However, when the surveyed agricultural holding has woodland, it is included in the questionnaire.

6. Geographic Coverage

Covered the entire country.

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 included all agricultural holdings that satisfied the national minimum agricultural activity thresholds.

The frame was obtained from the INE *List Register or Census Directory.* The Register lists all the reporting units considered to be potential holders of agricultural holdings, including their relevant contact information. The Register was based on the use and integration of data from three key sources:

(1) Integrated Administrative Control System Register, register of livestock holdings and register of holdings with insurance arranged with the State Agency for Agricultural Insurance

(2) Spanish Agency for Tax Administration (AEAT) (Census on taxpayers related to agricultural and livestock activities)

(3) INE statistical sources (Agricultural Census 1999, PADRON (Municipal Continuous Register) and Business Register).

In total, 1,449,785 agricultural holdings were surveyed.

Complete or Sample Enumeration Methods

The Farm Structure Survey was an enumeration of all agricultural holdings as defined by EC Regulations 1166/2008 and 1200/2009. The Survey on Agricultural Production Methods was carried out using stratified random sampling.

Sample Design

The Agricultural census 2009 (Farm Structure Survey) was an enumeration of all agricultural holdings with no sampling.

The Survey of Agricultural Production Methods design was a stratified random sample from all agricultural holdings.
The sample was selected by dividing the Farm Structure Survey holdings into strata, (1) types of farming, and (2) five farm size groups. The sample size was calculated by applying optimal allocation, meeting the precision requirements set down in Annex IV to Regulation (EC) No 1166/2008. The sample was randomly selected in each stratum.

Collection Method

Data collection was undertaken in three phases
Postal phase, October to December 2009 questionnaires were mailed for self-completion to all farm holders (except for a small subset such as public bodies or holders of multiple holdings that, due to their special characteristics, were reserved from the start for the next stage of PAPI interviews).
During this phase respondents were able to complete the questionnaire on paper and return it by post in the enclosed envelope. The option of completing it online (CAWI) was also provided. A free helpline (L900) was set up to assist data collection and answer calls from respondents. During this phase a preliminary review with respondents from whom some kind of clarification or correction was required.

Computer Assisted Telephone Interviewer phase (CATI), January to March 2010. Data collection was through telephone calls (CATI) to those holders who had yet to send the completed questionnaire as required in phase 1.

Paper Assisted Personal Interview phase (PAPI), January to April 2010, the objective of this phase was to follow-up with Farm Structure Survey cases that had not yet responded and to collect data for the Survey of Agricultural Production Methods.

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.

There were three questionnaires, the Farm Structure Survey, Survey of Agricultural Production Methods and a supplementary questionnaire on Farm Labour.

Controls to Minimize Non-Sampling Errors

During the collection and recording phases for mailed questionnaires, the data underwent a dual check, with a quality control of recording and control of the data supplied. The quality control of recording consisted of the repeat recording of a random sample of questionnaires allowing an average error of no more than 6 per thousand of all recorded batches controlled.

The external collection company also conducted a preliminary review of the data using a list of error specifications provided by INE. All questionnaires containing errors were corrected. A check was carried out on this error review by the continuous selection of a random sample of questionnaires received by mail.

The CAWI programming incorporated the same error controls as the questionnaires received by mail, so the CAWI processing could only proceed if the data were error free.

Similar checks on errors and inconsistencies during the interview were also included in the CATI software application to ensure that questionnaires were completed properly.

Innovative Methodologies

There was use of a multi-mode data collection operation. Although most of the data collection was based on printed questionnaires that were sent by post some respondents were given an opportunity to use a computer assisted web interview option. In addition follow-up of non-response used computer assisted telephone interviews and the Agricultural Production Methods module was a paper assisted personal interview.

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

Administrative data were used to reduce response burden for information on farm ownership (legal personality of the holder, and sex and age of the holder in the case of natural persons).

Questionnaire Scanning was used for the information from the self-completed questionnaires returned by post, but no optical character recognition (OCR) was used. As a consequence, a data entry operation was used to capture the information from the self-completed questionnaires and the files collected through other means, PAPI, CATI, and CAWI (the computer assisted web interview) were consolidated and into a merged database.

The datasets obtained from the recording stage were uploaded into a centralised database in DB2 to allow editors access to the records in query and update mode through an application developed in Natural Windows. The application detects and lists coverage errors (duplicates, misidentification, etc.) and inconsistencies in the questionnaires (partial absence of data in a questionnaire, inconsistent data between different variables and control of the range and the existence of quantitative variables). It also detects and lists controls of outliers, such as crops that appear in certain regions in which they had not previously appeared.

In all, more than 176 controls were set up. When an editor detected an error, changes could be made to the questionnaire data. It also allowed editors to bring up a scanned image of the questionnaire, where available, to enable the editor to review the original data.

Following the manual correction of errors and prior to obtaining the datasets with the final data, all questionnaires underwent a process of automatic data imputation (AIP). The AIP consist of edits to identify the characteristics failing an edit and requiring imputation and the imputations themselves.

The imputations were of two general types. One type is deduced from the information in the questionnaire itself by applying given criteria, while the second type required recourse to external information to make up for missing data in the questionnaire.

10. Data Dissemination and Use

The 2009 Farm Structure Survey results on general information about land use, land tenure, holding size, legal status, livestock, organic production, renewable energy production, rural development and labour force were published on the INE website July of 2011.

In October 2011 the Census Data Warehouse system became available. The system provides information processing power, greater flexibility and faster access to information (including custom queries), which will reduce response times and operating costs. The Survey of Agricultural Production Methods were released and published on the INE website January 2012.

11. Census Data Quality

Prior to final approval of the data, the results were subjected to a final evaluation. The comparisons were a challenge as the reference periods are not identical to those of the check data nor are the definitions and the populations are different as the Census uses EU definitions that exclude the very small farmers. In general however the data were judged to be comparable, with no significant differences.

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/ES_NMR_FSS_2010.pdf/be028011-2d76-4216-b50b-bc01513458ea

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