
CYPRUS - Census of Agriculture 2010 – Explanatory notes

1. Historical Outline

The Statistical Service of Cyprus (CYSTAT) has been conducting a Census of Agriculture over the last 40 years, at approximately 10-year intervals (in 1960, 1977, 1985, 1994, 2003 and 2010). The main objective of these censuses was to enumerate the whole population of agricultural holdings in the country and to collect data on various basic characteristics of each holding. This Census data then became the basis for the agricultural register that was used for drawing samples of various sample surveys, which were carried out on an annual basis between census years. In 2003, an agricultural census was carried out in the country, which was based, for the first time, on the guidelines and relevant regulations of the EU regarding farm structure surveys, as Cyprus was becoming a full member of the EU in 2004.

2. Legal Basis and Organization

The legal basis for the Farm Structure Survey (FSS), as indeed for the conduct of all Statistical Surveys carried out by CYSTAT, is the National Statistics Law of 2000. The law is very explicit in terms of the obligation of agricultural holders in providing the requested information, whereas, it is equally explicit in terms of the obligation of CYSTAT in treating all collected information as confidential. The law also allows CYSTAT to have access to administrative records.

The Farm Structure Survey (FSS) and the Survey of Agricultural Production Methods (SAPM) 2010 were also carried out in Cyprus based on the Regulation No 1166/2008 of the European Parliament and of the Council, which requests that in 2010 Member States shall carry out surveys on the structure of Agricultural Holdings (FSS) and a survey on agricultural production methods used by agricultural holdings (SAPM).

The organization of the 2010 FSS and 2010 SAPM was undertaken entirely by the section of Agricultural Statistics of CYSTAT. A four-member team was formed in January 2010 comprising four permanent members of the staff of the Agricultural Section under the direct guidance and supervision of the head of the section. The team met frequently (at least once a week) in order to brief each other on work progress and to exchange views on issues arising.

3. Reference Period or Date

The reference period of the survey was October 1, 2009 to September 30, 2010, for the livestock characteristics was November 1, 2010. This reference period has also been used during five (5) previous censuses and, thus, allowed a good comparison with the past results. The reference period for the benefit of the holding for rural development measures was years 2007, 2008 and 2009.

4. Enumeration Period

The Farm Structure Survey data collection period was between September 2010 –and April 2011. The Survey of Agricultural Production Methods field collection operation was undertaken in May and June 2011

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.

Cyprus applied the following definition: holdings to meet at least one of the following thresholds of size:

- 0.1 ha utilised agricultural area or 0.05 ha greenhouse or
- own animals, and specifically one or more cows or a total of two or more other large animals of any kind and age (such as horses, camels) or a total of five and more small animals of any

age and gender (such as goats, sheep, pigs) or fifty and more poultry, or twenty and more beehives, or five and more ostriches, or ten or more rabbit breeding females.

6. Geographic Coverage

Government control area of Cyprus.

7. Exclusions and Cut-Off Thresholds

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

8. Methodology

Use of the FAO Modular Approach

No

Frame

For operational reasons the target population is considered as consisting of two distinct parts. The first refers to urban areas where the target population consisted of all agricultural holders residing in these areas as recorded in the updated Farm Register. The second part refers to rural areas where all households were visited through the door-to-door method identifying all agricultural households and holdings. All questionnaires completed in rural areas were also checked against the existing register mentioned above in order to identify and/or explain any changes in those holdings which were included on the register.

The Register was created based on the census 2003, and was updated using FSS 2005 and 2007, other annual surveys and using information from a wide variety of sources.

The results of the Census 2010 were used to replace entirely the old register.

Complete or Sample Enumeration Methods

The Farm Structure Survey was a complete enumeration of all agricultural households and farms. The Survey on Agricultural Production Methods was a sample.

Sample Design

The Farm Structure Survey was a complete enumeration of all agricultural households and farms. The Survey on Agricultural Production Methods was a stratified random sample. According to the budget available to the Agricultural Sector of the Statistical Service of Cyprus, it was decided that the total sample size should be about 7,200 holdings from the total of 38,859 farms.

At a first stage, a "*Standard Output*" for each holding was calculated using the standard output coefficients. These coefficients were applied on data collected by the Census on the utilized agricultural area (by crop) and the number and type of animals.

At the second stage, all holdings were divided into 4 Groups according to their "*standard output*", the first Group representing the smallest farms and the fifth Group the largest. The largest farm size Group was the Group most heavily sampled (one in every three farms) and the smallest the most lightly sampled (one in every seven farms).

The sample represented the 40% of total utilised agricultural area and the 47% of the total number of animals, and 46% of the total area of cereals.

Collection Method

Data collection was carried out through paper questionnaires in both surveys, which were filled out by interviewers during personal visits to the respondents. No use of administrative data sources was made by the FSS or SAPM other than as a valued source of information for cross-checking estimates, and a means to evaluate the Census results.

In the case of rural areas, the survey was carried out from door-to-door, thereby ensuring that all agricultural households were enumerated. All questionnaires completed in rural areas were also checked against the updated Agricultural Register. Furthermore, all households in rural areas were visited with the assistance of the community authorities and the Local Council. This ensured not only that all households were contacted but also that the population in each village was

encouraged by its local authorities to cooperate with the enumerators and to provide truthful information.

In the case of urban areas coverage was based on the list of agricultural households on the updated Agricultural Register. The Register was based on information from the 2003 Census, and updates from the FSS 2005 and 2007, annual surveys and information from a wide variety of other sources.

The 2010 Survey on Agricultural Production Methods, data collection followed the same procedures as those of the Farm Structure Survey. Data entry centres were established in the central office of CYSTAT, where the data entry software program was installed.

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.

Cyprus included more detailed breakdown for crops and equidae than requested by the EU legislation. There were two questionnaires one for the Farm Structure Survey and one for the Survey on Agricultural Production Methods.

Controls to Minimize Non-Sampling Errors

A multi-level checking system of questionnaires was set up immediately after data collection started. The first step of this checking process was in the hands of area supervisors. The checks made by area supervisors were of twofold nature. First, they were obligated to check the information contained in each questionnaire for errors or inaccuracies. Second, they were instructed to make coverage checks. They were asked to contact 10 percent of all of the respondents for whom a questionnaire was completed (either through telephone or personal visit) and to ensure that the interviewer filled out the questionnaire according to instructions, and that all questions were asked.

District Officers were given responsibility for contacting respondents who reported no agricultural activity. It was an effort to ensure that the interviewer had visited these households and the declaration of not having an agricultural holding is correct.

The final checks were carried out during data entry by the software program itself. The program carried out several checks, such as, consistency checks, valid value and range checks, arithmetic checks.

Coverage and other non-sampling errors were minimized during the multi-stage checking process that took place concurrently with data collection and data entry. In the case of rural areas, the target population was fully covered through door-to-door visits. In the case of urban areas, a primary concern was coverage, which was limited by the quality of the data in the Register. Under coverage in the urban areas was estimated to be approximately 4 percent.

Innovative Methodologies

None noted

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

Accurate and good quality data were set from the start as a primary objective of the survey. This goal could only be achieved if the collected data could efficiently and effectively be checked. For this purpose, a multilevel checking system of questionnaires by supervisors and District Officers was set up immediately after data collection started.

The final checks were carried out during data entry by the software program itself. The program carried out several checks, such as, consistency checks, valid value and range checks, arithmetic

checks. After the completion of data collection, follow-up interviews ended. The non-response rate for the 2010 Census is estimated to be 1.8 percent.

With regard to the data processing system it does not appear that it had an imputation module and there do not appear to have been any imputations for missing data, data that failed edits, or non-response.

Errors that were made during the data entry process such as typing errors were corrected by re-entering of the data. Other errors were checked by the by checking the data against the information available in the existing Register and in many cases by contacting the holder again by telephone.

10. Data Dissemination and Use

The analytical and final results were published in the first half of 2013. A paper publication is also planned. The publication is available for sale from the Government Printing Office. The publication contains methodological information as well as analytical comparative data between the results of the 2010 Census of Agriculture and the corresponding results of the censuses of 2003 and 1994.

11. Census Data Quality

The plan was to compare and evaluate the 2010 Census to the results of the Census of 2003, FSS 2005, FSS 2007 and in relation to information received from administrative sources. The results were also compared to the information available in the initial list of units that in turn was based on information collected through the annual surveys of the Statistical Service as well as administrative sources.

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/CY_NMR_FSS_2010.pdf/acbbbbe-e865-4ea0-9519-955ab1dfef5e

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