
FINLAND - Census of Agriculture 2010 – Explanatory notes

1. Historical Outline

The first Agricultural Census in Finland was conducted in 1910, and the tenth in 2010. Since Finland joined the EU in 1995, the Information Centre of the Ministry of Agriculture and Forestry (Tike) has been responsible for implementing Farm Structure Surveys.

2. Legal Basis and Organization

The Agricultural Census complies with current EU legislation. There is no separate national legislation governing agricultural censuses. Tike's statistical production is based on the Act on the Information Centre of the Ministry of Agriculture and Forestry (1200/1992 and 667/2006) and the Act on Rural Business Statistics (1197/1996). The Act on Rural Business Statistics (1197/1996) grants Tike extensive rights to collect data on commercial agriculture and horticulture that involves trade, product processing, and running a commercial rural enterprise.

Finland's Statistics Act (280/2004) governs statistical production and disclosure obligation. According to this act, statistical authorities must attempt to produce their statistics using existing administrative material. Information that cannot be gathered from other sources may be collected from informants, as long as this has been agreed on in advance with either the informants or their benefits organizations.

Tike was responsible for the implementation of the Agricultural Census and Survey on Agricultural Production Methods, which were carried out as a project. The project's sub-areas were: data content, data collection, data processing, publication of the results, communications, and a survey of agricultural production methods. The Agricultural Census and Survey on Agricultural Production Methods were implemented at the same time.

3. Reference Period or Date

The Census reference date was 1 April 2010 for horses, pigs and poultry, 1 May 2010 for cattle, sheep and goats. The reference period for crops was harvest year 2010 (crops harvested during the year 2010), for irrigation, other gainful activities, grazing land and manure the reference period was the calendar year 2010, for labour force - 1 September 2009–31 August 2010 and for Rural development characteristics, the three years 2008, 2009, and 2010.

4. Enumeration Period

The data collection operation started 1 September 2010 and ended 1 March 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.

The 2010 agricultural census in Finland covered all farms and horticultural enterprises engaged in commercial agricultural or horticultural production, that have an utilised arable land area of at least one hectare or at least one animal unit of livestock, or a horticultural enterprise with less than one hectare of arable land that is engaged in horticultural production intended for sale (for example, greenhouse enterprises). Farming for a household's own consumption is not classed as active farm operation.

6. Geographic Coverage

Covered the entire country.

7. Exclusions and Cut-Off Thresholds

None noted other than those stated in the national definition.

8. Methodology

Use of the FAO Modular Approach

No

Frame

The frame for the Agricultural Census included, (1) all farms in the 2009 Farm Register, (2) all horticultural enterprises in the 2009 Horticultural Enterprise Register, and (3) all farms that were new applicants for farming subsidies in 2010. There were 63,874 farms and horticultural enterprises in Finland in 2010.

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.

Finland collected additional items on foreign labour force, generation change – the year and method, use of computers and type of Internet connection, as well as more detailed breakdown on labour force and other gainful activities,

There were two questionnaires: one for the census of agriculture and one for the Survey of Agricultural Production Methods (Maatalouslaskenta laaja kysely).

Complete or Sample Enumeration Methods

Whenever possible, data were obtained from administrative records. The majority of the data for the Agricultural Census 2010 was taken directly from statistical registers and the remaining data were collected from farmers using one of two surveys.

The Agricultural Census was an enumeration of all agricultural holdings with no sampling. The Survey on Agricultural Production Methods was a stratified random sample.

Sample Design

Agricultural census was conducted as complete enumeration.

Data for the Survey on Agricultural Production Methods were collected with a sample survey. A stratified sample was used. The sample frame was constructed using three variables: geographical location (20 municipalities), production sector (8 classes) and economic size (5 classes). After initial stratification, the small strata (which only contained a few farms) were combined. There were a total of 566 strata. In total, 15,021 farms and horticultural enterprises (representing 23.8 per cent of all holdings in the sample frame) were selected.

The sample was allocated using the mean of a proportional and optimal allocation (Neymann allocation). The allocation variable was the economic size of the farm (euros) according to 2009 Register data. All large farms were included (275 farms) and nearly all of the largest broiler farms. All greenhouse enterprises of at least 10,000 square meters were selected for the sample. In Finland, broiler chickens are centered on major farms and it is difficult to obtain a representative sample from such farms, as some areas only have a few large broiler farms. Sample selection was therefore more geared towards broiler farms than others.

Collection Method

The Ministry of Agriculture and Forestry (Tike) follows the data collection principle laid down in the Finnish Statistics Act that existing register data should be utilized where possible, and no information in registers should be requested from respondents for statistical purposes. The majority of the data for the 2010 Agricultural Census was taken directly from two statistical

registers, the Farm Register and Horticultural Enterprise Register.

However, not all the data required for the Agricultural Census and Survey on Agricultural Production Methods was available in the registers. The missing data (labour force, education and training, other gainful activities, renewable energy, irrigation,) was collected using either the Agricultural Census (Farm Structure Survey) or the Survey on Agricultural Production Methods.

Information for the Agricultural Census and the Survey on Agricultural Production Methods was collected both electronically (CAWI) and using computer assisted telephone interviews (CATI). When data collection began, farmers were sent a printed letter containing a) a request to provide data electronically, and b) a user ID and password for the electronic data collection system. A reminder was sent to those farmers who had not responded after a set period. A printed data collection form was only sent with the second reminder. Farmers were, however, still able to respond electronically at that stage. Once electronic data collection had closed, telephone interviews were conducted with those farmers who had not responded electronically.

Controls to Minimize Non-Sampling Errors

Farmers almost invariably fill in their subsidy applications meticulously, to avoid sanctions. Information is copied from administrative registers to the Farm Register annually in October, when all subsidy applications have been recorded. All the information, irrespective of the data source (administrative or farmer survey) was subject to thorough range, consistency and coherence edits

Innovative Methodologies

Administrative sources (mainly the Integrated Administrative Control System) replace significant part of the data collection, CAWI, CATI.

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

The same checks were used in both the online forms and the software used to enter data from telephone interviews. There were two types of checks: a) errors that had to be corrected before the survey could continue, and b) warnings that could be skipped and did not prevent submission of the form.

All the registers used as data sources for the Agricultural Census employ the same ID (farm code) for their basic units (farms and horticultural enterprises). It is therefore relatively easy to integrate data from different registers, and units can be linked reliably between registers.

In Finland, questions required for statistical purposes have been added to subsidy application forms. These sections of the subsidy application forms have been designed in cooperation with the agricultural administration and Tike's Statistics Group. Therefore, as far as definitions are concerned, data extracted from, for example, the Integrated Administrative Control System (IACS) also match well with the data required for statistics.

IACS included data on over 200 variables for crops and land use. However, only about 50 different crops and land use variables are recorded in the Agricultural Census of Finland, so the IACS data had to be selected and summed when compiling the census results.

The results were estimated with SAS software. Variances were estimated using the CLAN software developed by Statistics Sweden. Mean square errors for key variables are mostly under or above 2 per cent.

Missing information on farms and horticultural enterprises that did not respond to the Agricultural Census was filled in using imputation methods. The imputation method used varied depending on the amount of background information available for the variable in question. For example, IACS data on the farmer or farmer's spouse could be used to fill in missing data about a farm's labour force. The most common imputation method was to fill in a missing data item using an average obtained from similar farms, or to substitute information on a missing farm with data from a similar farm that had filled in the questionnaire. Missing geographical coordinates were obtained using the farm's address details.

10. Data Dissemination and Use

Preliminary data for the Farm Structure Agricultural Production Methods surveys were published on Tike's website: www.maataloustilastot.fi/en/etusivu. The preliminary results consisted of Excel spreadsheets and press releases on major points (in Finnish, Swedish and English). An online release also accompanied every publication of preliminary Census results. The releases are all available at: <http://www.maataloustilastot.fi/en/tilasto/133/tilastojulkaisulistaus>

The results of the Agricultural Census were also published using Tilastolaari's dynamic reporting service. Initially, only preliminary data on labour force and workloads were available, but the service was later updated with information about other sub-areas. Once complete, the remaining data will be published via Tilastolaari. Data can be found at http://www.maataloustilastot.fi/tilastolaari_fi.

11. Census Data Quality

Comparisons of the estimates of variables common to both the Census of Agriculture (enumeration of all holdings in the population) and the Survey of Agricultural Production Methods (sample survey) were undertaken for structural data such as livestock numbers, total farmland and crop areas. These kinds of comparisons were also made during post-stratification.

The values for the most important crop areas and livestock numbers from the sample survey differed very little from the values from the complete enumeration of all holdings, the differences usually less than 5 per cent and well within the coefficients of variation of the sample.

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/FI_NMR_FSS_2010.pdf/b44ca9dd-122a-4f9d-bfef-67a82c49ddd

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