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## LATVIA - Census of Agriculture 2010 – Explanatory notes

### 1. Historical Outline

The first Agricultural Census of Latvia, organized in compliance with the requirements of the European Union legislation, took place in 2001, followed by the Farm Structure Surveys in 2003, 2005 and 2007.

In Latvia information on agricultural activities was first collected Population and Agricultural Census was conducted (1920). After that agricultural censuses were carried out every 3 to 5 years, 1923, 1929, 1935, and 1937. The most comprehensive Agricultural Census was organized in 1939, but its data were not compiled in full due to the war. During the post-war years, when Latvia was a part of the Soviet Union, censuses on sown area of agricultural crops, cropland, livestock and fruit gardens were organized.

### 2. Legal Basis and Organization

The Central Statistics Bureau of Latvia is the main institution responsible for the organization of the 2010 Agricultural Census (Farm Structure Survey) and the Survey of Agricultural Production Methods.

The Order of the Cabinet of Ministers No 843 of 11 December 2009 authorizes the Central Statistical Bureau to ensure the organization of the Agricultural Census of Latvia 2010. This Order establishes the reallocation of the State funding from the Ministry of Economics to the Ministry of Agriculture (MA), setting the participation of the MA in the acquisition of the Census information. Basing on this Order an inter-institutional agreement on conducting and technical provisions of the AC 2010 was concluded.

### 3. Reference Period or Date

The Census reference date was July 1<sup>st</sup> 2010 for characteristics such as livestock, buildings, machinery and other where it is meaningful to assign a specific day. Land and crops data refer to the crop year 2010. The reference period for labour force data were July 1, 2009 to June 30, 2010 and support for rural development was the last 3 years (2008, 2009, 2010)

### 4. Enumeration Period

The enumeration period was from 16 April till 30 October 2010 and was undertaken in several stages.

### 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.

Due to the limited funding it was decided that Agricultural Census 2010 would include only agricultural holdings meeting the requirements of the European Parliament and Council Regulation (EC) No 1166/2008 - the smallest agricultural holdings which together contribute 2% or less to the total utilised agricultural area and 2% or less to the total number of livestock units were excluded.

As a result all active agricultural holdings with agricultural area exceeding 1 ha or with *Standard Output*, exceeding EUR 70 regardless the area, were included in the Census. The standard output threshold was also used when selecting holdings, which did not have agricultural land area but had breeding livestock.

### 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 EU definition of an agricultural holding.

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## 8. Methodology

### ***Use of the FAO Modular Approach***

No

#### ***Frame***

The frame was the Statistical Farm Register (SFR). The list of holdings included the Census was prepared on the base of its information. The SFR was developed in the CSB in 1999 and is updated on regular basis. To update the SFR various data sources are used – information from regular statistical surveys and censuses, Statistical Business Register, State Land Cadastre, Population Register, Agricultural Data Centre Animal Register, and Rural Support Service IACS data base. Before the AC 2010 the Statistical Farm Register was updated using information from the annual Crop and Animal Survey, Land Cadastre Register, IACS database and Statistical Business Register. Such updating ensured possibility to find new holdings and add them to the SFR.

#### ***Complete or Sample Enumeration Methods***

The 2010 Census was conducted as enumeration of all agricultural holdings and the Survey of Agricultural Production Methods that was a sample.

#### ***Sample Design***

The sample for the Survey of Agricultural Production Methods (SAPM) was a simple stratified random sample. The holdings were stratified by region (5), type of farming (3), economic size classes (13), based on standard output, in Euros. Total sample size was 20,005 agricultural holdings.

The sampling ratio was 100% in strata with a population size of one, where adjusted Neyman sample size was equal to the population size of strata, and where standard output for the agricultural holdings were larger than 15,000 EUR. The *Neyman Allocation* was used to calculate the optimal sample size for each stratum, based on the economic size of holdings for active holding and the agricultural land area of holding for non-active and new holdings. This method optimally allocates the sample between strata where the total sample size is fixed, by minimizing the variance within strata.

#### ***Collection Method***

In order to reduce respondent burden and avoid duplication of the questions SAPM was conducted simultaneously with the Agriculture Census 2010 and statistical survey activities during the Census data collection period were coordinated. When developing the Crop Survey 2010 for example, the results of the 2010 Census and SAPM were taken into account and the Crop Survey questionnaire was prepared in a way that respondents did not have to repeatedly provide the same information

Four data collection methods were used, (1) face-to-face interviews (CAPI – Computer Assisted Personal Interviewing), (2) telephone interviews (CATI - Computer Assisted Telephone Interviewing), (3) a postal survey, and (4) a web survey CAWI (Computer Assisted Web Interviewing).

The Internet based Web survey was conducted for the first time. Holdings with known e-mail addresses and which in 2010 used the RSS electronic area payment application system had an opportunity to fill in the Census and SAPM questionnaires on the Internet. The total number of completed Web questionnaires was 616 or 0.7% of the total number of respondents.

The 2010 Census used a new data collecting system Computer Assisted Statistical Information System (CASIS). The CAPI and CATI interviews were based on software developed by Informatics Department of the Central Statistical Bureau of Latvia and data are stored in Microsoft (MS) SQL database. For the web questionnaires the CSB common system CASIS CAWI version was used. This system was designed to harmonise data collection, processing and storage in the Central Statistics Bureau.

#### ***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

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(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. In addition Latvia included items on unutilised agricultural area, agricultural buildings by type, more detailed information on renewable energy resources.

The 2010 Agricultural Census used administrative data whenever possible in order to reduce response burden and be in compliance with EC Article 4 and Council Regulation No 1166/2008 that Member States shall use information from the Integrated Administration and Control System provided for in Regulation (EC) No 1782/2003 and the System for the Identification and Registration of Bovine Animals provided for in Regulation (EC) No 1760/2000. Within the framework of the 2010 Agricultural Census two state registers were used: ADC Animal Register and the Rural Support Service's (RSS) Integrated Administration and Control System (IACS) databases. Number of livestock (except number of pigs and poultry) was obtained from the ADC Animal Register. Data on support for the rural development was taken from IACS database.

There were two questionnaires, one for the 2010 Agricultural Census (farm Structure Survey) and the other for the Survey of Agricultural Production Methods.

#### ***Controls to Minimize Non-Sampling Errors***

As interviewers were using laptop computers, the Census (FSS) and SAPM data entry was carried out during the interview. The task of the interviewers was to obtain information from the respondent as well as to carry out the first data analysis and quality control using the range and consistency edits at the time of the interview allowing them to note errors during the interview and allow them revisit and correct errors while interviewing the respondent.

#### ***Innovative Methodologies***

The use of computer assisted personal interviews (CAPI), computer assisted telephone interviews (CATI) and web-based method (CAWI).

The in-house development of the software by the Informatics Department of the Central Statistical Bureau of Latvia that was used to support the CAPI and CATI interviews and store the resulting information in a Microsoft (MS) SQL database.

Use of administrative data sources to replace partly the data collection.

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

As interviewers used laptop computers, the 2010 Census and the Survey of Agricultural Production Methods data entry was made during the interview (CAPI). The task of the interviewer was to acquire information from the respondent as well as to carry out the first data analysis and quality control. Approximately 280 controls were incorporated in the CAPI data entry application, in CATI – it was approximately 230 controls, to ensure not only mathematical and logical control, but also technically correct data input. The CAWI application included only the most significant mathematical and logical validations facilitating the information provision for the respondents.

When data were sent to the CSB server, the mathematical and logical control at holding level was undertaken. If necessary, the interviewer or respondent was contacted. Missing information was imputed using data from administrative data sources.

### **10. Data Dissemination and Use**

The information on progress, as well as on provisional and final results of the 2010 Agricultural Census has been published on the CSB Web site in several press releases:

- (1) 1st provisional results (general information) in a press release of December 2010  
<http://www.csb.gov.lv/en/notikumi/provisional-results-agricultural-census-2010-27452.html>
- (2) 2nd provisional results in a press release of May 2011  
<http://www.csb.gov.lv/en/notikumi/provisional-results-agricultural-census-2010-31977.html>

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- (3) Final results in a press release of December 2011 <http://www.csb.gov.lv/en/notikumi/final-results-agricultural-census-2010-32185.html>
  - (4) CSB Web Page data base at the end of December 2011  
[http://data.csb.gov.lv/DATABASEEN/laukskait\\_10/databasetree.asp](http://data.csb.gov.lv/DATABASEEN/laukskait_10/databasetree.asp)

The data file of the Agricultural Census 2010 was sent to the Eurostat in March 2012 and the collection of statistical data from the Agricultural Census of Latvia 2010 was published in the 1<sup>st</sup> quarter of 2012.

## **11. Census Data Quality**

The results of the AC 2010 at holding and national level were compared with the administrative data sources as well as with the annual surveys conducted by the CSB - 2010 Crop Production Survey and the 2010 Livestock Survey.

## **12. Data Sources**

Eurostat:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural\\_census\\_2010](http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural_census_2010)

Final report:

[http://ec.europa.eu/eurostat/documents/749240/749313/LV\\_NMR\\_FSS\\_2010.pdf/1633bffb-d1fd-43ea-8d41-b79d5a5fe554](http://ec.europa.eu/eurostat/documents/749240/749313/LV_NMR_FSS_2010.pdf/1633bffb-d1fd-43ea-8d41-b79d5a5fe554)

## **13. Contact**

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