

# **FARM STRUCTURE SURVEY 2007**

## **NATIONAL METHODOLOGICAL REPORT**

Member State: LATVIA

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## **SUMMARY**

The main target of the FSS 2007 was to obtain information about structure and typology of the agricultural farms and their agricultural activities in Latvia in accordance with EU and national requirements.

The questionnaire form of FSS 2007 was developed in co-operation with the Ministry of Agriculture and other State institutions concerned. The list of characteristics included in the survey was compliant with EU requirements concerning the Farm Structure Survey 2007 (Commission Regulation (EC) No 204/2006 of February 6, 2006 adapting Council Regulation (EEC) No 571/88 and amending Commission Decision No 2000/115/EC with a view to the organization of Community surveys on the structure of agriculture holdings in 2007). Data transmission deadlines are provided in the Commission regulation (EC) 2139/2004 of 8 December 2004 adapting and implementing Council Regulation (EEC) No 571/88 and amending Commission decision 2000/115/EC with a view to the organisation of Community surveys on the structure of agricultural holdings in 2005 and 2007.

The FSS 2007 in Latvia was made as combination of exhaustive enumeration and sample. Exhaustive enumeration was done for active farms with economic size equal or greater than 2 ESU. The sample of farm structure survey was made as stratified simple random sample. The reference date for FSS 2007 was June 1, 2007. The crop area was recorded as area sown with winter crops last autumn and as area sown with summer crops in current summer. In FSS 2007 the reference period for indicator number of persons employed in agricultural holdings was June 1, 2006 - May 31, 2007.

Latvia has only one type of questionnaire form for all types of farms. In the FSS 2007 two data collection methods were used - face-to-face interviews and telephone interviews. Face-to-face interviews were conducted between 2 June and 15 July. It was organised by the Central Statistical Bureau (CSB) in cooperation with the employees of the Market and Public Opinion Research Centre (MPORC). The questionnaire form was designed for processing in scanners. Telephone interviews were made alongside with the face-to-face interviews in the time period between June 14, 2007 and September 28. They were held in the CSB CATI Centre in Preiļi.

Pursuant to the Article II.9 of the General Conditions of the Grant Agreement No. 32103.2005.001-2006.033, which governs award of contracts, it was decided that subcontractor will be the one who will carry out interviews for the Farm Structure Survey 2007. An international tender was announced in December 2006. The Market and Public Opinion Research Centre (MPORC) was the one who won the tender. The task of the MPORC was fieldwork organization and conducting financial operations pursuant to the service agreement.

In the Farm Structure Survey 2007 26 persons were employed as supervisors in districts and 604 persons as interviewers.

The training of supervisors of FSS 2007 took place on from May 16 to 17, and the training of interviewers took place in the Regional Information centres of districts from May 21 to 25.

Users of land were informed by several information channels: on the website of the CSB, in national agricultural magazines and in local and republican newspapers, via public television and radio channels. During the survey interviewers gave informative brochure on FSS to each respondent. Brochure included telephone numbers, calling to which during the survey the respondent was able to find out additional information.

The first provisional FSS 2007 results were published on November 15, 2007 in a press release, but final results will be published at the end of June 2008 – in Statistical bulletin “2007 Survey on the Structure of Agricultural Holdings in Latvia”. On June 2, 2008 final results were published in the Web Page of the CSB in press release on FSS 2007.

## **1. Introduction**

### **1.1 History, scope**

The first Farm Structure Survey in accordance to the requirements of EP Regulation (EEC) No 571/88 was carried out in 2001 in the form of census. The list of indicators included in the survey was formed in accordance to the EU requirements and needs of national users. Before that Agricultural Census was carried out in 1939, but results of this census were not completely compiled due to the war.

Information acquired in the Agricultural Census of 2001 was essential for national needs. In this Census basic information on the number of agricultural farms, their size, structure and economic activities was obtained. This information served as base for the creation of farm concept in the Statistical Farm Register, which was built up at household level in 1999.

After Agricultural Census, Farm Structure Surveys are carried out every second year. The main target of the Farm Structure Surveys is to obtain information on structure and types of agricultural farms and their agricultural activities in Latvia in accordance with the EU and national requirements. The information obtained in the FSS survey is very important also for the local users, for analysis of the situation in agriculture of Latvia, and to draw up its development trends.

In 2003 and 2005 Latvia organized FSS surveys similar to other EU Member States. All individual data files and methodological descriptions of FSS were sent to Eurostat.

FSS 2007 was the last survey before Agricultural Census in 2010.

### **1.2. National legislation**

Following EU and national legal acts were the legal basis of the survey on the structure of agricultural holdings in Latvia in 2007:

#### **EU legislation:**

- Council Regulation (EEC) No 571/88 of 29 February 1988 on the organization of Community surveys on the structure of agricultural holdings between 1988 and 1997
- Council Regulation (EC) No 2467/96 of 17 December 1996 amending Regulation (EEC) No 571/88 on the organization of Community surveys on the structure of agricultural holdings
- Regulation (EC) No 1435/2004 of the European Parliament and of the Council of 22 June 2004 amending, as a result of enlargement, Council Regulation (EEC) No 571/88 on the organisation of Community surveys on the structure of agricultural holdings

- Commission Regulation (EC) No 204/2006 of 6 February 2006 adapting Council Regulation (EEC) No 571/88 and amending Commission Decision 2000/115/EC with a view to the organisation of Community surveys on the structure of agricultural holdings in 2007

### **National legislation:**

- The Official Statistics Law of the Republic of Latvia adopted by the Parliament of Latvia on November 6, 1997, with amendments on January 28, 1999; on March 18, 2004; on October 7, 2004; on March 16, 2006 and on November 15, 2007;
- The annual State Program of Statistical Information 2007, which has to be approved every year by the Cabinet of Ministers (annex 1 of the Cabinet Regulation No 1008 of December 12, 2006).

In accordance with the Official Statistics Law, all individual data on each person and each farm are confidential. Each interviewer signed an approved paper that this confidentiality will be noticed.

## **2. CONTENT**

### **2.1 Characteristics and reference period**

The list of characteristics included in the survey and their definitions were compliant with EU requirements concerning the Farm Structure Survey 2007 (204/2006 of February 6, 2006 adapting Council Regulation (EEC) No 571/88 and amending Commission Decision No 2000/115/EC with a view to the organization of Community surveys on the structure of agriculture holdings in 2007).

The questionnaire form was adapted by Regulation of the Cabinet of Ministers No 922 (annex 115) in 6 November 2006.

As some of the characteristics were considered as either non-existent or having minor economic significance in Latvia, they were not collected.

#### **List of non-existent characteristics (NE)**

- Mountain area (A02a);
- Durum wheat (D02);
- Grain maize (D06);
- Rice (D07);
- Tobacco (D23);
- Cotton (D25);
- Sunflower (D27);
- Soya (D28);
- Other textile crop (D33);

- Rough grazing (F02);
- Fruit and berry species of subtropical climate zones (G01b);
- Nuts (G01c)
- Citrus plantations (G02);
- Olive plantations (G03, G03a, G03b);
- Vineyards (G04, G04a, G04b, G04c, G04d).

**List of non-significant characteristics (NS)**

- Other protein crops harvested dry (D09g);
- Hops (D24);
- Other oil seed crops (D30);
- Hemp (D32);
- Industrial plants, not mentioned elsewhere (D35);
- Other permanent crops (G06);
- Permanent crops under glass (G07);
- Irrigated area (I03, I03a, I03b);
- Livestock not mentioned elsewhere (J19).

**List of characteristics collected solely for national purposes:**

- registration number of farm in Statistical farm register;
- registration number of household in Statistical farm register;
- personal ID code of holder;
- registration No in register of Enterprises;
- registration code of tax-payer;
- CATTU of farm location;
- name and address of farm;
- mailing address;
- hothouses by type of cover and heating facilities
- Stock of agricultural machines;
- Farm storage facilities of manure.

The reference date for FSS 2007 was June 1, 2007. The crop area was recorded as area sown with winter crops last autumn and as area sown with summer crops in current summer. If sowing was not completed until June 1, 2007, the area planned to be sown was also recorded. In FSS 2007 the reference period for indicator number of persons employed in agricultural holdings was June 1, 2006 - May 31, 2007.

Type of tenure and farming system - for share farming or other modes (CC03); areas no longer used for production purposes, subject to the payment of subsidies, and area subject to set-aside incentive

schemes - areas used for the production of agricultural raw material for non-food purposes (I08b), areas converted into permanent pasture and meadow (I08c), former agricultural areas converted into wooded area or being prepared for a forestation (I08d) and other areas (I08e) are not significant for Latvia. The value for these characteristics is zero in FSS 2007 in accordance with information, which came from Integrated Administration and Control System (IACS) of Rural Support Service.

## **2.2 Questionnaire**

For all types of farms (private farms, state farms and statutory companies) Latvia has only one type of questionnaire form. The questionnaire form of FSS 2007 was developed in co-operation with the Ministry of Agriculture and other State institutions concerned.

The questionnaire form was designed so that later it can easily be processed on scanners. The size of the questionnaire form is 8 pages. The following parts are included:

- General description of the farm and holder (user)
- Land use
- Utilisation of arable land
- Number of livestock and poultry
- Stock of agricultural machines
- Farm storage facilities of manure and irrigation devices
- Farm labour force, permanent and temporary
- Rural development

An English copy of the FSS 2007 questionnaire is attached in annex 1 of the report.

## **3. Survey methodology**

### **3.1 Survey organisation**

Preparation for the Farm Structure Survey 2007 was started in July 2006. The Central Statistical Bureau (CSB) of Latvia is the main institution responsible for the organization of the FSS in Latvia.

In the FSS 2007 two data collection methods were used:

- Face-to-face interviews for 50.0 thsd farms;
- Telephone interviews for 8.0 thsd farms.

Pursuant to the Article II.9 of the General Conditions of the Grant Agreement No. 32103.2005.001-2006.033, which governs award of contracts, it was decided that subcontractor will be the one who will carry out interviews for the Farm Structure Survey 2007. An international tender was

announced in December 2006. The Market and Public Opinion Research Centre (MPORC) was the one who won the tender.

The task of the MPORC was organisation of the fieldwork and conducting of financial operations pursuant to the service agreement. Since FSS 2003 and FSS 2005 the MPORC already had experience in FSS field organization.

### **Responsibilities of the CSB:**

- Agricultural Statistics Section – responsible for elaboration of survey methodology, for development of survey questionnaire in accordance with the recommendation of Eurostat considering national needs, for creation of manual for interviewers, for training of regional staff, for data control, analysis, creation of data file, preparation of press release and statistical bulletin;
- Mathematical Support Division – responsible for the design of the FSS sample, determination of extrapolation factors and estimation of sampling errors;
- Informatics Department – responsible for the design of survey questionnaire, its suitability for scanning, programming of data entry, verification, logical control and processing; for development of application for telephone survey;
- CSB Telephone Interviews Centre (CATI centre) – located in Preiļi, responsible for the organization and progress of telephone interviews.
- Information, Publishing and Printing Department – responsible for printing and dissemination of informative and methodological materials and bulletin containing final data of FSS 2007;
- Technical Maintenance and Procurement Division – responsible for the purchase of stationery, provision of working rooms, communications (telephone, computer), forms, and methodological stuff to the supervisors, for the purchase of stationery for Regional Information Centres.

### **Survey staff**

- Agricultural statistics section: 4 regular employees and 2 additional persons employed during the FSS 2007 work process: for data collection, analysis, processing and publishing;
- Mathematical Support Division – 1 person;
- Informatics Department – 2 persons;
- CSB CATI Centre – 3 regular employees and 5 additional persons;
- 8 temporary employees for 4 months: data entry (scanning and verification), data control and processing;
- 2 organizational work coordinators in MPORC;
- Managers of FSS in districts responsible for the process of survey at district level – 27 persons;
- FSS manager assistants – 26 persons;
- Supervisors which at district level were responsible for the work quality – 61 person;
- Interviewers – 604 persons.

### 3.2 Work process

The first works related to the preparation of the Farm Structure Survey 2007 started in 2006. In order to find what kind of questions should be additionally included in questionnaire form for national needs, a lot of consultations were made at that time. In the survey of 2007 new method of data acquisition was used (CATI), therefore, careful planning and preparation was necessary.

Activity	Started	Finished
Updating of the Farm Register	01.07.2006	30.06.2008
Survey documentation design and development of survey methodology	10.10.2006	20.03.2007
Printing of survey forms	01.04.2007	26.04.2007
Sampling design and evaluation	02.04.2007	13.04.2007
Preparation and printing of farm register survey forms, list of farms involved in FSS 2007, and delivery to regional offices	16.04.2007	10.05.2007
Training of supervisors (in CSB)	16.05.2007	17.05.2007
Training of interviewers (in Regional Information Centres)	21.05.2007	25.05.2007
Development and testing of the technical system and software for data processing	02.04.2007	31.07.2007
Field work	02.06.2007	15.07.2007
Training of telephone interviewers (in CATI Centre of CSB)	04.06.2007	04.06.2007
Telephone interviews	14.06.2007	28.09.2007
Compilation of telephone interviews and linking of both databases	01.10.2007	19.10.2007
Delivery of survey forms to the CSB	30.07.2007	24.08.2007
Scanning, verification and data control	01.08.2007	30.10.2007
Press release (provisional information)	-	15.11.2007
Work on preparation of Eurofarm data from national data files, data delivery to Eurostat	01.12.2007	30.06.2008
Press release on final results of the FSS 2007	-	02.06.2008
Preparation and publication of bulletins on FSS 2007 final data	02.01.2007	30.06.2008

### **3.3 Preparing the survey operations**

#### **3.3.1 Population and frame**

##### **Population**

All economically active farms - farms, which produce agricultural production, were involved in the target population for the FSS 2007.

The definition of a holding is in line with the EU Farm Structure Survey definition.

Agricultural holding is a single unit both technically and economically, which has a single management and the output of which is agricultural production. The holding may also provide other supplementary (non-agricultural) products and services.

##### **Frame**

The statistical Farm Register, which was built up in 1999 and has been regularly maintained, was the base for drawing of the sample for Farm Structure Survey 2007. The data sources for updating the Register are special register surveys, regular statistical surveys and censuses, Statistical Business Register, Land Cadastre Register, Population Register and other available data sources.

After AC 2001, structure of Farm Register was changed: economical information on farms – economic size, type of farm, number of livestock, etc. were added. This information is used for several statistical samples.

Before the FSS 2007, the Farm register was updated with information from regular survey, Land Cadastre Register and information from local municipalities on household members. This updating gave possibility to find out new farms and add it to Farm Register.

In the frame of FSS 2007 were included active farms with economic size higher or equal than 0.1 ESU, non-active farms with agricultural land area higher or equal than 10 ha, new farms with agriculture land area higher or equal than 5 ha were also included in the sampling frame.

*Remark: As the registered activity of farm does not always correspond to the real activity of unit, so also non-active farms were included in the frame.*

#### **3.3.2 Survey design**

The FSS 2007 in Latvia was made as combination of exhaustive enumeration and sample. Sampling design was made as fully probabilistic sampling. The new sample was selected – permanent sample was not used.

The total sample size was 58 002 farms.

Exhaustive enumeration was done for active farms with economic size equal or greater than 2 ESU. Exhaustive enumeration was done for 17875 farms.

The sample of farm structure survey was made as stratified simple random sample.

The farms were stratified by size of farm, location of farm (Nuts level 4), type of farming and their activity.

The farms were divided into 3 activities groups - active farms, non-active farms and new farms.

Also, farms were divided into 8 following groups according to the type of farming (EU typology codes are used):

- Farm type A (1310-1443);
- Farm type A (6010-6062);
- Farm type B (2011-2034);
- Farm type D (3211-3400);
- Farm type E, F (4110-4440);
- Farm type G (5011-5032);
- Farm type H (7110-7230);
- Farm type H (8110-8232).

*Remark: Non-active and new farms were not stratified by type of farming because type of those farms is unknown.*

The size class of farms was defined according to characteristic of farm. Economical size (ESU) of farm was used as stratification variable for active farms. Agricultural land area of farm was used as stratification variable for non-active and new farms because economic size is unknown for those farms.

The active farms were grouped by economic size (in ESU) into 4 economic size groups:

- 0.1 – < 0.5;
- 0.5 – < 1.0;
- 1.0 – 2.0;
- higher than 2.0.

The non-active and new farms were grouped by size of agricultural land area (in ha) into 7 size groups

- 0 – < 2;
- 2 – < 6;
- 6 – < 38;
- 38 – < 96;

- 96 – < 240;
- 240 – < 600;
- 600 or higher.

Neyman Allocation was used to calculate the optimal sample size for each stratum, based on the economical size of farm for active farms and the agricultural land area of farm for non-active and new farms. This method optimally allocates the sample between strata where the total sample size is fixed, by minimising the variance within strata.

The formula for Neyman Allocation is following:

$$n_h = n \cdot \frac{N_h S_h}{\sum_{h=1}^H N_h S_h}, S_h = \sqrt{\frac{1}{N_h - 1} \sum_{i=1}^{N_h} (y_i - \bar{y}_i)^2},$$

- $n_h$  – Sample size in stratum  $h$ ;
- $n$  – Total sample size;
- $n N_h \wedge$  – Population size in stratum  $h$ ;
- $n y_i$  – Variable of interest in stratum  $h$ ;

The resulting Neyman sample allocation was adjusted using following conditions (verified in given order and only the first realizing condition is performed for each stratum):

- Stratum sample size was set equal to 1 if the population size of stratum is 1;
- Stratum sample size was set equal to stratum population size if round Neyman sample size was greater than stratum population size;
- Stratum sample size was set equal to 2 if round Neyman sample size was lower than 2;
- Stratum sample size was set to round Neyman sample size in all other cases.

Strata where sampling ratio was 100%:

- All strata fully covered by the exhaustive enumeration;
- All strata with population size 1;
- All strata where adjusted Neyman sample size was equal to the population size of strata.

The main goal to assign sampling ratio equal to 100% in those strata is to get lower sampling errors for estimates.

### **3.3.3 Pilot Survey**

A Pilot Survey was not carried out.

### **3.3.4 Informing and training of the staff and respondents**

Popularisation of the survey was based on several information channels. On the website of the CSB respondents were able find all information related to the survey.

Articles about the survey were placed in national agricultural magazines and in local and republican newspapers. Information about the survey was transmitted also via public television and radio channels.

During the survey interviewers gave informative brochure on FSS to each respondent. Brochure included telephone numbers, calling to which during the survey the respondent was able to find out additional information.

In order to obtain reliable and high quality results of the survey, it was very important to have well-trained specialists, interviewers and telephone interviewers. Training of supervisors took place at CSB on 16<sup>th</sup> and 17<sup>th</sup> of May 2007. The training of interviewers at district level took place from May 21 – 25, 2007. Training of phone interviewers took place in CATI centre in Preiļi on June 4, 2007.

Methodological materials containing detailed instructions were disseminated to all participants before the training. The training was provided by the representatives of the CSB and MPROC. Participants were informed on organizational and legal side of the survey, as well as, on indicators and definitions of the FSS 2007, on procedure how to fill in the questionnaire forms, and filled them in practically.

## **3.4 Sampling, data collection and data entry**

### **3.4.1 Drawing the sample**

The Latvian farm structure survey 2007 was made as combination of exhaustive enumeration and sample. All units were sampled in the part of sampling frame where exhaustive enumeration was done. Stratified simple random sampling was done in the sampling part of the frame. For more details see 3.3.2. For each farm structure survey new sample is drawn. Procedure for sample selection is self-made using SPSS®.

### **3.4.2 Data collection and entry**

The Farm Structure Survey 2007 was carried out with the help of face-to-face und telephone interviews.

#### **Face-to-face interviews**

In May questionnaire forms, instructions and other attributes of the FSS 2007 were delivered to the District Information Centres for further distribution to supervisors and afterwards also to interviewers. In the time period between June 2 and July 15, 2007 the interviewers of the Farm

Structure Survey visited 50.0 thousand farms. The interview of each separate farm took on average about 45 min (maximum 1 hour).

The District Information Centres were responsible for collection of filled in questionnaire forms, reception of portfolios and their delivery to the CSB from July 30 to August 24, 2007.

For the data entry in the CSB scanners were used. Information from 50002 questionnaire forms was entered in the computer system with the help of 3 fars-acting scanners. At the time when information was in input process, in 8 computerized working places adjustments and corrections of the unrecognized letters and digits of the computing system were made, and the archives of unscanned questionnaire forms were created on computer discs. If necessary, in the archives it is possible to find needed questionnaire form and to obtain the pictures of the computer screen.

### **Telephone interviews**

Telephone interviews were made alongside with the face-to-face interviews in the time period between June 14, 2007 and September 28. They were held in the CSB CATI Centre in Preiļi, where 8 interviewers were working. In the telephone interviews information on 8000 farms was obtained. With this form of interviews all small and inactive farms, telephone numbers of which were known, were surveyed.

In order to be able to compare the data acquired with various methods, for the verification and merge of the data attained from scanned questionnaire forms and received in telephone interviews, the IT Department of the CSB in accordance with the requirements of the FSS 2007 developed united programme of logical control. That, in turn, ensured verification of logical coherence, as well as, eliminated the duplication or omission of data.

In the result of the survey information on 52213 farms was obtained.

For the needs of the Eurofarm database 49840 records on holdings fulfilling the EU definition were transmitted to Eurostat in the form on anonymous micro-data. The data format was fulfilled the requirements of the *Manual for data suppliers of the survey 2007*.

### **3.4.3 Utilisation of administrative data sources**

In FSS 2007 administrative data sources were not utilized.

### **3.4.4 Control of the data**

Data control of the FSS 2007 is carried out as follows:

#### **Manual control**

The first visual control of questionnaire forms was done in regional offices. Regional supervisory stuff and other staff in regional offices carried out a preliminary verification to see if the forms were filled in correctly and completely.

#### **Verification and logical control**

For data entering scanners were used. After scanning the verification of the logical and arithmetical control was done in the CSB in accordance with specially developed verification programme. There were approximately 200 different logical and arithmetical controls. After interviewers or farmers were contacted by phone the re-addressing of errors was done.

Due to the error shown by logical control program, if necessary, land users were contacted by phone in, e.g., to find out volume of sown areas, number of livestock, etc. thus needed information was obtained, and there non-response in such cases does not exist.

### **Comparison of the FSS with other data sources**

After logical control was finished, the FSS data were compared with information from Statistical Farm Register (information on holder (user) of farm, land areas belonging to farm and other), with information from other statistical surveys (previous livestock survey), with Animal Register information (Agricultural Data Centre) on June 1, 2007, and with the list of Organic farms received from *Ministry of Agriculture and Integrated Administration and Control System – IACS (Rural Support Service)*

#### **3.4.5 Non-response**

	Number
<b>Surveyed farms</b>	<b>58002</b>
<b>Successfully surveyed farms and filled in sets of forms; submitted for processing to CSB</b>	<b>52213</b>
<b>Non-response</b>	<b>4609</b>
<b>Reasons for non-responding:</b>	
Respondent not available	3021
Respondent refused interview	1588
<b>Farms visited but sets of forms not filled in due to justifying reasons</b>	<b>1180</b>
<b>Justifying reasons for failure to fill in sets of forms:</b>	
All land sold, rented, farm liquidated,	816
Owner deceased, heirs do not use land	42
Other reasons	322

### **3.5 Data processing, analysis and estimation**

#### **3.5.1 Methods for handling missing or incorrect data items**

Re-weighting is used for unit non-response adjustment. Re-weighting is done for sampling part of survey and also for exhaustive enumeration part of survey.

Strata are assumed as response homogeneity groups in the sampling part of survey – unit non-response is corrected in each stratum independently.

Post-stratification is made for adjustment of non-response in the exhaustive enumeration part of survey. The farms are grouped by economic size (ESU) of farm, location of farm (Nuts level 4), and type of farming.

Also, farms were divided into 8 different types of farming groups:

- Farm type A (1310-1443);
- Farm type A (6010-6062);
- Farm type B (2011-2034);
- Farm type D (3211-3400);
- Farm type E, F (4110-4440);
- Farm type G (5011-5032);
- Farm type H (7110-7230);
- Farm type H (8110-8232).

The active farms were grouped by economic size (in ESU) into 4 economic size groups:

- 2.0-< 4.0
- 4.0-< 8.0
- 8.0-< 16.0
- 16.0-< 40.0
- 40.0-< 100.0
- equal or higher than 100

*Remark: The unit non-response is not corrected by re-weighting for the biggest farms - farms with European size unit (ESU) >100.*

### 3.5.2 Estimation and sampling errors

The Horvitz-Thompson estimator is used for estimation of totals and ratios.

The design weights (basic weights) are calculated according to sample design. The design weights are calculated as ratio of the number of farms in the population to the number of farms in the sample within each stratum.

Unit design weights are calculated according to sampling design and inclusion probabilities of units in the sample –  $w_d = \frac{N_h}{n_h}$ , where  $N_h$  is population size of stratum  $h$  and  $n_h$  is the sample size in stratum  $h$ .

*Remark: over-coverage errors are assumed as respondents in this case because they represent the total over-coverage in the frame.*

The design weights are adjusted taking into account non-response.

Variance estimation is done according to the sampling design (stratified simple random sampling). Set of respondents is assumed as sample. Direct estimator of variance for totals is used. Formulas for computing sampling errors are described in annex 1. Software *SPSS* is used for variance estimation.

### **Coefficients of variation for main indicators of farm structure survey, Latvia 2007**

Characteristic:	Coefficients of Variation
Usable agricultural land	0,3 %
Arable land	0,4 %
Area of permanent crops	1,1 %
Pastures and meadows	0,6 %
Sown area of cereals	0,6 %
Sown area of potatoes	0,5 %
Vegetables in open areas	0,9 %
Number of cattle	0,2 %
Number of pigs	0,3 %
Number of sheep	1,8 %
Number of goats	3,0 %
Total number of employees (in agriculture)	0,2 %

The coefficient of variation is the ratio of the square root of the estimated variance to the estimation.

### **3.5.3 Non-sampling errors**

#### **Coverage errors**

- Under-coverage is not estimated
- Over-coverage is 2,0 %;
- Misclassification is not estimated

#### **Non-response errors**

4609 cases of unit non-response were detected. Total response rate is 92 %. The response rate is calculated as the ratio of number of farms that answered the survey divided by the number of eligible farms in the sample. Eligible farms are all farms initially selected into the sample less the farms that are not in the target population (over-coverage).

### **Model assumption errors**

Cut-off thresholds were used:

- Active farms with economic size lower than 0.1 were not included in the sampling frame;
- Non-active farms with agricultural land area less than 10 ha were not included in the sampling frame;
- New farms with agriculture land area less than 5 ha were not included in the sampling frame.

### **3.5.4 Evaluation of estimations**

The results of the Farm Structure Survey 2007 generalised about the country as a whole, and about administrative districts (NUTS 3) were compared with the results of the FSS 2005, as well as, with the results of other agricultural surveys (annual Livestock Survey and Crop Survey).

The FSS 2007 data were compared with Animal Register information on June 1, 2007. The comparison of statistical data on number of cattle with Animal Register data was started in 2001 after Agricultural Census and was carried out in FSS 2003, 2005 and 2007. On the basis of agreement signed between CSB and Agricultural Data Centre the information from Animal Register is received on regular basis.

Data on organic farming of FSS 2007 were compared with the list of organic farms received from Ministry of Agriculture. Comparisons at farm level were made between certified activities and areas with certification of transition period. In the case of significant discrepancies information was revised by calling the respondent.

FSS 2007 data on sown area at farm level was compared with the information of *Integrated Administration and Control System – IACS (Rural Support Service)*. In the case of significant discrepancies information was revised by calling the respondent.

## **4. PUBLICATION AND DISSEMINATION**

The first provisional FSS 2007 results were published on November 15, 2007 in a press release, but final results will be published at the end of July 2008 – in Statistical bulletin “*2007 Survey on the Structure of Agricultural Holdings in Latvia*”.

On June 2, 2008 the main final results were published in the Web Page of the CSB in press release on FSS 2007.

The first version of the FSS 2007 micro-data base (49835 records) was transmitted to Eurofarm database in June 2008, in accordance with Annex of Commission Regulation (EC) No 2139/2004 of December 8, 2004 adapting and implementing the Council Regulation (EEC) No 571/88 and amending Commission Decision 2000/115/EC with a view to the organisation of Community surveys on the structure of agricultural holdings in 2005 and 2007.

## **ANNEXES**

1. Questionnaire form of FSS 2007
2. Formulas applied to approximate the variance of estimates of totals