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**FARM STRUCTURE SURVEY 2007**  
**NATIONAL METHODOLOGICAL REPORT**

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# **FARM STRUCTURE SURVEY 2007 NATIONAL METHODOLOGICAL REPORT**

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## **SUMMARY**

The FSS 2007 was the second farm structure survey in Lithuania and the third one after the Agricultural Census 2003. Survey results are to be used not only by Statistics Lithuania but also by the Ministry of Agriculture of the Republic of Lithuania, the Lithuanian Institute of Agrarian Economics, the Lithuanian Chamber of Agriculture and other agricultural institutions.

The FSS 2007 was performed by Statistics Lithuania and regional statistical offices. Statistics Lithuania was responsible for the methodological, technical and organisational preparation of the survey.

Preparation for the FSS 2007 was started in November 2006. A working plan of this survey was approved by the Director General of Statistics Lithuania. A Methodological Task Force was made up to work out methodological principles.

The main objective of the Farm Structure Survey 2007 was to get information about structure and typology of agricultural farms and their agricultural activities in Lithuania in accordance with the EU and national requirements. Data of the FSS 2007 are very important for updating the Statistical Farm Register in Lithuania.

The FSS 2007 data collection took place on 1–29 June 2007. A Pilot Survey for the FSS 2007 was not organised.

The reference time for the FSS 2007 was 1 June 2007 and the reference period lasted 12 month before 1 June (for labour force).

The FSS 2007 was carried out by interviewers. Interviewers questioned farmers' and family farms. They visited every holding from the Survey sample and filled in questionnaires.

Agricultural companies and enterprises had to fill in the questionnaire themselves and to send it directly to regional statistical office for further processing.

The information about land use, arable and other agricultural land, livestock, labour force and other activities was collected according to the Commission Regulation (EC) No 204/2006 of 6 February 2006. Also, some data for national interests were collected.

There was only one type of questionnaire form for the whole Survey. The Lithuanian version of the Farm Structure Survey questionnaire included 12 pages. The questionnaire had four annexes: annex 1 – Small units questionnaire, annex 2 – Orchards for market 2007, annex 3 – Information about the Farm Structure Survey, annex 4 – Manual for interviewers. The questionnaire was in paper format. The questionnaire was completed by agricultural holdings with the area more than 1 ha of utilised agricultural land or holdings with less than 1 ha of utilised agricultural land but with income more than 5,000 LTL per year.

The sampling frame of the Survey was the database of the Agricultural Census 2003 which was updated with data from other statistical surveys. The FSS 2007 sample size was 60,888. The number of surveyed farms was 61,263 (375 new farms were found). Altogether data were provided by 56,798 farms. During the Survey, it was found out that 2,202 farms had less than 1 ha of utilised agricultural land and their income was less than 5,000 LTL per year. These farms did not comply with the definition of an agricultural holding. These farms are small units and they were not included in the FSS 2007 estimations. The definition of an agricultural holding satisfied 54,596 farms, of which: 54,039 farmers' and family farms and 557 agricultural companies and enterprises.

758 interviewers worked during the survey. Each interviewer questioned about 80 respondents. In Statistics Lithuania, the following persons were assigned to carry out the job related to the survey: project manager, coordinator, 2 specialists, one programmer, formatting specialist and statistician. Depending on the number of the selected farms, each regional statistical office had several specialists responsible for the survey and each district municipality had one or two specialists responsible for the survey. Data input operators were employed at the regional statistical offices too.

Training of specialists and interviewers was performed in two stages: in April–May 2007. Specialists from the regional statistical offices and municipalities were trained in April in Vilnius (training lasted for two days, three groups were made). The interviewers were trained at district municipalities in May. Training lasted for one day.

A big promotion campaign was conducted.

During the survey, the interviewers visited each holding from the sample, interviewed the farmer and filled in questionnaires. The interviewers had to submit the filled in questionnaires to the district municipality statistician. Here, the questionnaires were checked, mistakes were corrected and unclear items were cleared out by a repetitive question to the farmer (by telephone or visiting him/her). The checked questionnaires were sent to the five regional statistical offices where the data were manually entered by special software. Correct data were directed to Statistics Lithuania for further processing.

Final results are to be published in September 2008.

# **1. INTRODUCTION**

## **1.1. HISTORY, SCOPE**

In 2003, the second in the history of the independent Lithuania Census of Agriculture was carried out. For the first time, a Census of Agriculture as such complying with the census standards was carried out in Lithuania in 1930.

The Agricultural Census was carried out in Lithuania in June 2003. The first Farm Structure Survey was carried out in June 2005. The Farm Structure Survey 2007 was the second sample survey in Lithuania. The main objective of this Survey was to renew information about the structure and types of agricultural farms, utilised area, fruit and berry plantations, crops, livestock, farm labour force.

The object of the FSS 2007 was an agricultural holding (farm) that is a single unit both technically and economically, which has single management and which produces agricultural products or maintains its land which is no longer used for production purposes in good agricultural and environmental condition. In the holding, there is at least 1 ha of utilised agricultural land or less than 1 ha of utilised agricultural land but income is more than LTL 5,000 per year.

Also, the holding can be engaged in ancillary economic activities or can render services. A farm is comprised of all cultivated or supervised land areas, whole farm inventory including animals as well as of employees of the farm.

There is a lot of information available on different types of farms in Lithuania.

The types of farms could be classified as follows:

- Farmers' and family farms
- Agricultural companies and enterprises.

Agriculture is a traditional, important and complex sector of the Lithuanian economy. In 2006, the share of employees engaged in agriculture constituted 12.3 % of the total number of employees. In 2006, the agricultural gross value added share in gross value added constituted 5.1 %.

The purpose of the FSS was to obtain statistical data on the structure of agricultural holdings and the employment of the population in them; to obtain aggregated data on agricultural condition of administrative units; to obtain data for the establishment of samples for statistical surveys. Land use, crop area, livestock, the number of family members working in the agricultural sector, the number of hired employees and their working hours were the key questions asked. The definition of units of enumeration determined in the FSS was in harmony with the definition of agricultural holding provided in the Council Regulation (EEC) No 571/88 of 29 February 1988 and the list of Characteristics of Commission Regulation (EC) No 204/2006 of 6 February 2006.

## **1.2. NATIONAL AND EU LEGISLATION**

Statistics Lithuania carried out the FSS 2007 according to the EU Regulations and national legal acts.

The legal basis of the FSS 2007 was:

- Commission Regulation (EC) No 204/2006 of 6 February 2006 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 2007.
- Law on Statistics of the Republic of Lithuania (23 December 1999 No. VIII-1511)
- Work Programme of Official Statistics
- Working plan of the Farm Structure Survey 2007 approved by the Director General of Statistics Lithuania (Order No. 233 of 30 November 2006). It stipulates the following:
  - Bodies responsible for conducting the FSS 2007
  - Main organizational and methodological provisions
  - Plan of prior works
  - FSS interviewers' selection and instruction methods
- Farm Structure Survey questionnaire and instructions for filling it in approved by the Director General of Statistics Lithuania (Order No. 65 of 27 February 2007).

In accordance with the Law on Statistics of the Republic of Lithuania, all individual data on each person and each farm are confidential. Each interviewer signed an approved paper that confidentiality is maintained.

## **2. CONTENT**

### **2.1. CHARACTERISTICS**

#### *Overview of national characteristics (main groups, specialities)*

The information about land use, arable and other agricultural land, livestock, labour force and other activities was collected according to the Commission Regulation (EC) No 204/2006 of 6 February 2006. Also, some data for national interests were collected.

The characteristics in the Farm Structure Survey 2007 questionnaire were divided into several parts (I–V). Also, the questionnaire had four annexes: annex 1 – Small units questionnaire, annex 2 – Orchards for market 2007, annex 3 – Information about the

Farm Structure Survey, annex 4 – Manual for interviewers. Annex 1 and annex 2 were needed for national interests and for other statistical surveys.

### I. Data on the agricultural holding (12 main questions)

This section consists of the general information on the holding and the holder: holding identity number, name of the holder or name of agricultural company, type of the holding, geographical situation of the holding, legal personality and management of the holding, destination of the holding production, farming system and practises. Also, if a holding could not render information for a variety of reasons, it was indicated in this part.

#### Data for national interests in part I:

- Information about changes in the holding:
  - holding became small unit
  - the sole holder of the holding has changed (agricultural holding was sold or granted, the sole holder was other member of the family of the foregone holder, sole holder was dead)
  - If the new holding was found and a questionnaire was filled in, the particular designation was done.

### II. Land of the holding

The holder had to indicate how much own, rented or otherwise managed land he/she possessed as of 1 June 2007. Rented areas were recorded under those holdings, which pay rent. If a holding was situated in different municipalities, separate questionnaires were filled in. In all other questionnaires, the number of the main (first) questionnaire, the name of municipality and the area of land in it were recorded. The area of land, crop area and planted area were recorded in hectares and ares.

This section consists of the detailed information of land use and crop area. The crop area was recorded as the area under winter crops sown last autumn and the area under summer crops sown current summer. If sowing was not completed until 1 June, the area, which was planned to be sown, was also recorded.

#### Data for national interests in part II:

- Water, of which water bodies with fishes
- Area under crop: triticale (winter, spring), mixed cereals, buckwheat, field peas for grain, other dried peas for grain, field beans for grain, dried beans for grain, fodder roots, other fodder roots, silage crops (lupines, broad, beans, winter cereals, etc.), perennial grasses under 5 years old
- Distribution of orchards and berry plantations by sort, if their area consists of no less than 50 ares
- Distribution of outdoor vegetables by sort, if their area consists of no less than 20 ares
- Distribution of flowers and ornamental plants by sort. Threshold for these areas does not exist. All farms from the survey sample which are growing flowers and ornamental plants shall distribute it's by sort.

### III. Livestock, poultry and beehives number

Animals and poultry were recorded as of 1 June 2007 at the place where they were kept. Animals, which were slaughtered or sold after 1 June, were recorded too. Youngsters born after 1 June as well as livestock and poultry bought for slaughtering or for further growing after this date were not recorded. If a holding kept livestock, poultry or beehives in different municipalities, separate questionnaires were filled in.

Holding animals which were not used in the production process or income giving activity, i.e. which were used only for entertainment of the farm holder and his/her family members, were not registered except horses. Animals were recorded separately according to their kind, age and sex.

There were more characteristics in this part than the mentioned regulation requires. These characteristics were needed for national interests and for other surveys.

#### Data for national interests in part III:

##### Cattle

- less than 1 year old calves for slaughter
- less than 1 year old male for breeding
- less than 1 year old female for breeding
- 1 to 2 years old female for slaughter
- 1 to 2 years old female for breeding
- 2 years old and older female for slaughter
- 2 years old and older female for breeding
- suckling cows

##### Pigs

- piglets 20 to 50 kg (2 to 4 month)
- pigs for fattening 50 to 80 kg (4 to 6 months)
- pigs for fattening 80 to 110 kg (6 to 8 months)
- > 110 kg (8 month and >)
- breeding boars
- mated sows
- sows mated for first time
- sows not mated
- breeding gilts not yet mated

##### Ostriches

##### Foxes

##### Minks

##### Nutrias

##### Chinchilla.

### IV. Farm labour force

The number of persons employed in the holding was indicated here. Persons employed in the holding are persons of 16 years old and older, who were working in

the holding over last 12 months (from 1 June 2006 to 31 May 2007). Data on each person were written only once. If the person had several functions in the farm, e.g. is both a spouse of the farm holder and a farm manager, data were not written twice. But even if a spouse of the farm holder did not work in the farm, his/her data were registered.

Farm work is only work related to the production of agricultural products and maintenance of the capacity of these products. Farm work includes the following: organization and managing (purchase, sale, accounting, etc.), field works (ploughing, mowing, harvesting, etc.), animal breeding (fodder preparation, feeding, milking, animal care, etc.), works related to storing, processing, etc. of primary agricultural products (ensilage, packaging, etc.), maintenance works (building maintenance, repair of machinery, equipment, etc.). Housekeeping works (cleaning, repair of the house, cooking, etc.) are not included in the time worked on the farm.

Persons employed in the holding are: the holder, holder's spouse, other farm holders' family members (sons and/or daughters, their spouses or cohabiters, grandchildren, parents, grandparents, brothers and sisters, their spouses or cohabiters, brothers, sisters of the farm holder's spouse and their spouses doing farm work but not necessarily living on the farm), permanently working labour force which does not belong to the family, temporary labour force not related to the family.

Family members may get payment. They can work both on a regular basis and not.

A hired person is a person working for payment. Payment can be not only in cash but in kind as well, i.e. payment in food products, non-food products or permission to use dwelling for free, etc.

A temporarily hired employee is a person who is hired by the farm holder to work for a certain period (during potato harvesting, haying, to pick up stones, berries, etc.). The total number of days worked by males and females (during the last 12 months) was recorded.

All persons who have worked in the holding over the last 12 months were recorded. Those members of the holding, who are not working in the holding: old men, children, relatives, children-students, who are working in the holding occasionally, are not regarded as employed persons.

The farm holder or the manager indicates how long, on average, he/she himself and other farm members worked on the farm per day during the last 12 month. Annual work units (AWU) were calculated as follows: if a person indicated that he/she worked in the holding up to 2 hours, AWU = 0.125; if he/she worked 2–4 hours, AWU = 0.375; if 4–6 hours, AWU = 0.625; if 6–8 hours, AWU = 0.875 and if he indicated that he worked 8 hours and over, AWU = 1. "Full-time" means that the person works in the holding 248 working days a year when a working day length is 8 hours.

*Data for national interests in part IV:*

- The highest level of professional background in agriculture of the farm holder and his/her family members worked on the farm:
  - only practical experience – if a person does not have any qualification in agriculture but has gained experience working on farm;
  - basic – if a person has completed up to 2-year courses in agricultural school and/or institution which specializes in certain fields (including horticulture, forestry, fishery, veterinary, agricultural technologies and other related areas) or has completed agricultural apprenticeship
  - complete – if a person has graduated from a college, vocational school conferring agricultural qualification, agricultural college (2 or more years of education), university or other institution of higher education preparing specialists in horticulture, forestry, fishery, veterinary, agricultural technologies or other related areas.
- Number of the farm holder's household members.

#### V. Rural development

This section consists of the information about other non-agricultural activities in the holding. Other non-agricultural activity is any activity which is not considered to be agricultural and is carried out in the rural area (i.e. the activity which is not related to farming works but directly related to the farm and having economic effect on it): rural tourism, handicrafts, processing of products, production of wood and wooden ware, aquaculture, production of renewable energy, contractual work, other.

#### Data for national interests in part V

There were no data for national interests in this section.

#### ***Characteristics that deviate from EU variables in either that the name is the same but the content or definitions are different***

The definitions used for data collection in the FSS fully corresponded to the Community definitions.

#### ***Characteristics not collected (reasons: e.g. non-significant)***

Not collected indicators:

- Durum wheat (not characteristic of Lithuania)
- Rice (not characteristic of Lithuania)
- Cotton (not characteristic of Lithuania)
- Sunflower (not characteristic of Lithuania)
- Soya (not characteristic of Lithuania)
- Hemp (not characteristic of Lithuania)
- Permanent grassland and meadow – rough grazing (did not exist in 2007)
- Fruit and berry plantations – subtropical climate (not characteristic of Lithuania)
- Fruit and berry plantations – nuts (not characteristic of Lithuania)
- Citrus plantation (not characteristic of Lithuania)
- Olive plantations (not characteristic of Lithuania)
- Vineyards (not characteristic of Lithuania)
- Permanent crops under glass (did not exist in 2007)

### ***Exact reference date/period of the characteristics***

All the data, except data on crop area and employees, were filled in the questionnaire as of 1 June 2007. The crop area was recorded as the area under winter crops sown last autumn and the area under summer crops sown current summer. If sowing was not completed until 1 June 2007, the area planned to be sown was also recorded. In the FSS 2007, the number of persons employed in the agricultural holding during the period from the 1 June 2006 until 31 May 2007 was recorded.

### ***Changes of definitions of characteristics and/or reference time and/or measurement affecting the comparability with previous survey data***

No changes.

## **2.2. QUESTIONNAIRE**

### ***General description of questionnaire***

The Farm Structure Survey 2007 questionnaire was in paper format. The questionnaire had four annexes: annex 1 – Small units questionnaire, annex 2 – Orchards for market 2007, annex 3 – Information about the Farm Structure Survey, annex 4 – Manual for interviewers.

If the farm was involved in the FSS 2007 sample as a holding with 1 or more hectares of utilised agricultural land, but during the Survey it was found out that this holding is a small unit (with less than 1 ha of utilised agricultural land), not the main survey questionnaire, but its annex 1 – Small units questionnaire – was filled in.

All surveyed farms with orchards for market filled in annex 2 – Orchards for market 2007.

Main information about the Farm Structure Survey 2007 was presented in annex 3 – Information about the Farm Structure Survey. In this annex, legal basis, type, coverage, aim of the Survey, duty on the provision of statistical data, the confidentiality of statistical data and other information were defined.

There was only one type of questionnaire form for the whole FSS 2007. The Lithuanian version of the Farm Structure Survey questionnaire includes 12 pages. 527 indicators were included. The questionnaire consisted of the following sections:

- Data on the agricultural holding
- Land of the holding
- Livestock, poultry and beehives number
- Farm labour force
- Rural development

Annex 1 (Small units questionnaire) includes 1 page. 22 indicators were included.

Annex 2 (Orchards for market 2007) includes 4 pages. 50 indicators were included.

The Farm Structure Survey 2007 questionnaire was completed by each agricultural holding from the sample. The new farms were found too.

The interviewers received special instruction for filling in the questionnaire. A special manual for them was composed.

The data collection period lasted from 1 to 29 June 2007.

The copy of the Survey questionnaire with annexes is added (see Annexes).

### **3. SURVEY METHODOLOGY**

#### **3.1. SURVEY ORGANISATION**

##### **• *Short description about organisation, main responsibilities and functions***

Preparation for the Farm Structure Survey 2007 was started in November 2006. A working plan of the Farm Structure Survey was prepared and approved by the Director General of Statistics Lithuania.

Statistics Lithuania was responsible for the methodological, technical and organisational preparation of the Survey. In the Agriculture and Environment Statistics Division of Statistics Lithuania, three persons worked at the planning stage. As the actual FSS started in 2007, one additional person was hired.

The Survey was performed by Statistics Lithuania and regional statistical offices. There are 5 regional statistical offices in Lithuania. Each of them was entitled to have several specialists responsible for the survey. The number of these specialists was determined depending on the number of the selected farms in each of the mentioned regions.

Depending on the number of the selected farms, each of 52 district municipalities was entitled to have one or two specialists responsible for the survey. 758 interviewers worked during the survey. All of them attended a special training seminar and received written instructions.

During the training and the survey itself, specialists of Statistics Lithuania were consulting the interviewers and persons responsible for the survey. Thus, they had to go to some municipalities and counties as well as consult by telephone. All respondents were informed about the survey by post.

The survey questionnaires and all methodological material were printed at Statistics Lithuania. Data were entered at the regional statistical offices.

##### ***Working group***

A Methodological Task Force was established to work out methodological principles of the FSS 2007. The Task Force was formed and approved by Order No. 221 of 21 November 2006 of the Director General of Statistics Lithuania.

**The Methodological Task Force** consisted of the representatives from:

Ministry of Agriculture (2 persons)  
Agriculture and Food Market Information System (1 person)  
Lithuanian University of Agriculture (2 persons)  
Lithuanian Chamber of Agriculture (1 person)  
Lithuanian Farmers Union (1 person)  
Lithuanian Institute of Agrarian Economics (1 person)  
Statistics Lithuania (4 persons)  
Regional Statistical Offices (10 persons)

The meeting of this group took place in December 2006. Drafts of the Survey questionnaire and instructions for filling it in were discussed at the meetings of this task force. Also, unclear items from the Farm Structure Survey definitions were discussed. Especially exhaustively were analysed new indicators: fallow land subject to the payment of subsidies, with no economic use; permanent grassland and meadows no longer used for production purposes and eligible for the payment of subsidies.

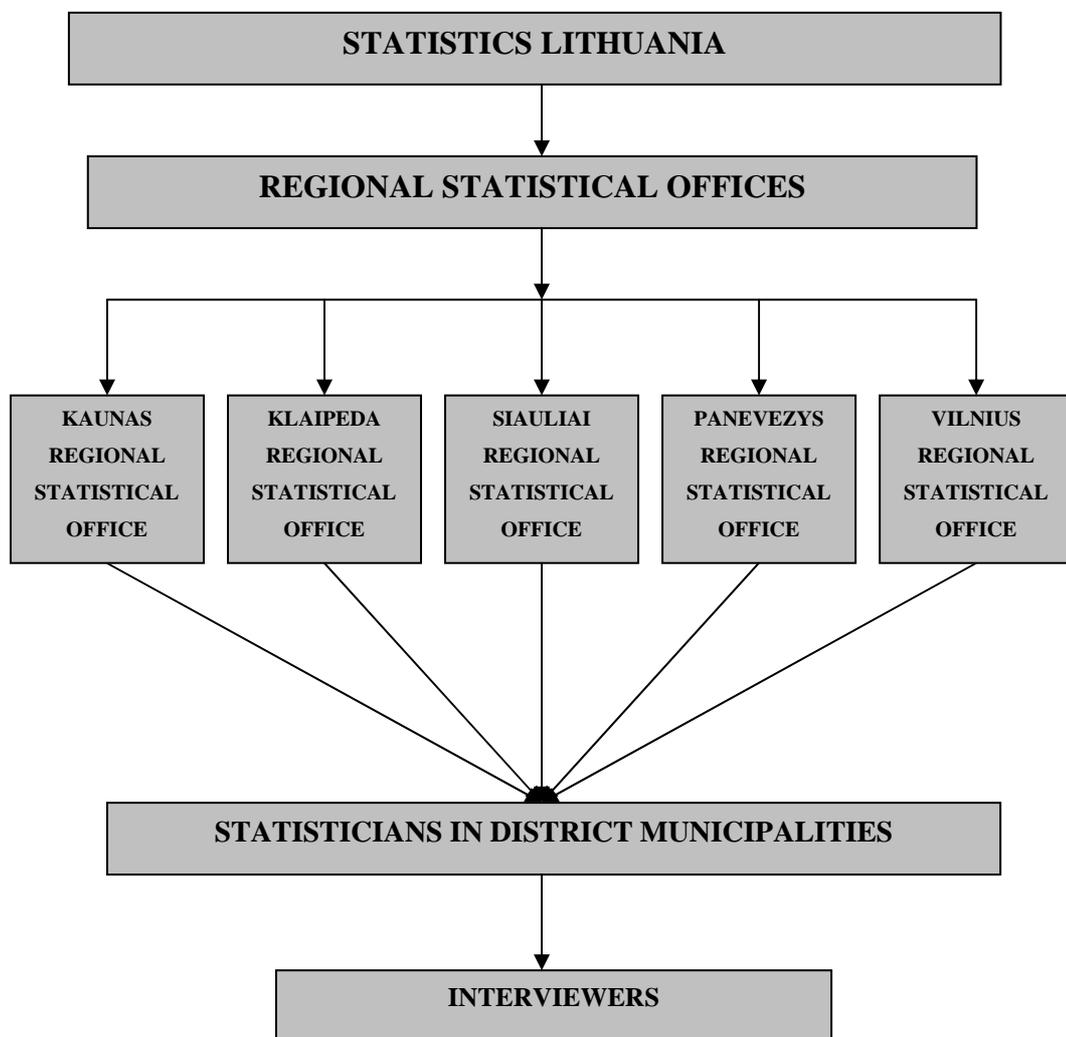
### *Survey staff*

- Central Office of Statistics Lithuania: project manager, coordinator, 2 specialists, one programmer, formatting specialist, and a statistician.
- 5 Regional Statistical Offices: several specialists responsible for the survey in each of them.
- 52 district municipalities: one district municipality statistician and one or two additional specialists responsible for the survey.
- 758 interviewers.
  
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- Data input operators.

The FSS 2007 was organized and performed by Statistics Lithuania and regional statistical offices. The main tasks for the regional statistical offices were:

- Organizing and preparing the FSS in their own territory in cooperation with Statistics Lithuania
- Participation of statisticians from regional statistical offices in the trainings, organised by Statistics Lithuania, related with the FSS
- Selection and training of FSS interviewers
- Apportionment of the FSS material
- Preparation and supplying of all FSS 2007 material for Statistics Lithuania.

*Scheme of the FSS 2007 organization*



**3.2. CALENDAR (Work process)**

Key activities of the FSS 2007	Period
Preparation of a calendar schedule and cost estimate of the FSS	November 2006
Formation of the Task Force to draft methodological and organizational provisions	November 2006
Making up of a survey sample	January 2007
Drafting a survey questionnaire and instructions for filling it in under a common approval of the related agricultural institutions	February 2007
Preparation of job definitions for temporary Regional Statistical Offices employees	January–February 2007
Approval of the questionnaire and instructions for filling it in and publication in the Official Gazette	February 2007
Training methodology development	March 2007
Preparation of the task for the primary information input as well as for the creation of the logical control program	March 2007
Printing of the survey questionnaires and instructions for filling them in	April 2007
Distribution of the sample and providing interviewers with the lists of respondents	April 2007
Distribution and sending of the questionnaires and methodological material to the interviewers	April 2007
Training of the statisticians from the Regional Statistical Offices and district municipalities	April 2007
Training of the interviewers	May 2007
Preparation of a program for primary data input and processing as well as for the implementation of arithmetical and logical control	May 2007

Interviewing the respondents	June 2007
Collection and checking of the survey questionnaires, correction of errors, data input	June–July 2007
Data processing, analysis and preparation for transmission to Eurostat	August 2007–February 2008
Preparation of primary data transfer program to Eurostat	January 2008
Transmission of survey data to Eurostat, preparation of the Final Survey Report and its delivery to Eurostat	March 2008
Preparation of a publication about the Farm Structure Survey results	September 2008

### **3.3 PREPARING THE SURVEY OPERATIONS** ('Planning the survey')

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

##### **Population**

The target population includes all holdings that comply with the definition of the statistical unit of the survey. An agricultural holding is a single unit technically and economically, which produces agricultural products, where there is at least one hectare of utilized agricultural land or agricultural products are produced mainly for sale or where there is less than 1 ha of utilised agricultural land but the income is more than 5,000 LTL per year.

##### **Frame**

The sampling frame was units of the Agricultural Census 2003 updated with data from other statistical surveys. Such farms, which in regular statistical surveys showed that they do not perform agricultural activity (their land was sold, granted) were excluded. New farms which were found in the period from the Agricultural Census 2003 were included. Also, new farms of legal persons were included. These farms were found in the Enterprise Register. So, the sample frame was 248,477 farms (247,886 farmers and family farms and 591 agricultural companies and enterprises).

##### **Frame errors**

According to the results of FSS 2007, the frame over-coverage was 18,205 (7.3 %) units. These units should not belong to the target population, because they have finished their agricultural activity, or they sold or rented their land, or they have less than one hectare of utilized agricultural land. No duplicate or multiple listing occurred.

On the strength of experience gained in the Farm Structure Survey 2005 it was decided to prepare a Small units questionnaire for farms which were involved in the survey sample as holdings with utilised agricultural land of more than 1 ha, but which on 1 June 2007 had less than 1 ha of utilised agricultural land. It was decided to collect only main information about these small units. So, if the interviewer found out that a farm which was involved in the list of respondents has less than 1 ha of utilised agricultural land, he/she filled in a “small questionnaire” – the Farm Structure Survey questionnaire annex 1 (Small units questionnaire). During the Survey, it was found out that 2,202 farms had less than 1 ha of utilised agricultural land and their incomes were less than LTL 5,000 per year. These farms did not satisfy the definition of an agricultural holding. These farms are small units; therefore, they were excluded from the FSS 2007 estimations.

### 3.3.2 Survey design

The sample of the Farm Structure Survey is a stratified simple random sample. The farms were stratified by economic size (ESU) of farm, type of farming and their characteristics. All farms were divided into 7 groups.

		<b>Strata</b>	<b>Frame population</b>	<b>Sample</b>	
<b>Farmers' and family farms</b>			<b>247,886</b>	<b>60,297</b>	
ESU $\geq$ 2		1	31,030	31,032	
ESU $<$ 2			216,856	29,265	
Of which	Specific farms	2	691	691	
	Crop production ( <i>SGM of crop production</i> $\geq$ <i>SGM of livestock production</i> )		75,042	10,270	
	Of which	SGM of crop production $\geq$ 1550	3	37,928	6,069
		SGM of crop production $<$ 1550	4	37,114	4,201
	Animal husbandry ( <i>SGM of livestock production</i> $>$ <i>SGM of crop production</i> )		141,123	18,304	
	Of which	SGM of livestock production $\geq$ 2000	5	70,502	12,304
SGM of livestock production $<$ 2000		6	70,621	6,000	
<b>Agricultural companies and enterprises</b>		7	<b>591</b>	<b>591</b>	
<b>Total</b>			<b>248,477</b>	<b>60,888</b>	

All groups (except farms of legal persons) also were stratified by location of farm. 308 strata were composed. The 309<sup>th</sup> stratum belongs to farms of legal persons.

During the survey, 375 new farms were found. For these farms, a 310<sup>th</sup> stratum was composed.

Post-stratification was not used.

### 3.3.3 Pilot Survey

A pilot survey was not carried out.

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

#### ***Interviewer and other staff training***

Training for specialists and interviewers was performed in two stages: in April–May 2007. Specialists from the regional statistical offices and district municipalities were trained in April in Vilnius, at Statistics Lithuania. Training lasted for two days. Three groups were made.

The interviewers were trained at district municipalities in May.

Methodological materials with detailed instructions were distributed to all participants before the training. During the training, organisational aspects of the Survey were explained. Also, the content of the survey questionnaire and rules for filing in the questionnaire were explained.

During the training and survey itself, specialists of Statistics Lithuania consulted the interviewers and persons responsible for the survey. Also, respondents were consulted and informed.

A big promotion campaign was conducted. The holdings were informed about the survey and data collection by:

- newspapers (local newspapers in each district municipality, republican newspapers)
  
- website of Statistics Lithuania
- personal letters.

Before the survey, there were many articles in local newspapers about the Farm Structure Survey in general. There were many articles about the Survey in republican newspapers too. During the Survey, there were announcements of the FSS 2007 in the municipalities. The website of Statistics Lithuania was also used as much as possible.

Before the survey, each respondent received a personal letter. There was the following information: main purpose of this survey, when the survey will be carried out, which data will be collected, use and protection of the data, contact data of regional statistical offices and the Agriculture and Environment Statistics Division of Statistics Lithuania. Also, the results of the Farm Structure Survey 2005 (number of persons employed in agriculture, average size of farms, utilised agricultural land, number of cattle, pigs, poultry) were presented. The main purpose of these letters was to inform respondents about the survey to avoid refusals and to get accurate data.

## **3.4 SAMPLING, DATA COLLECTION AND DATA ENTRY**

### ***3.4.1 Drawing the sample***

In each stratum, the farms are selected randomly using computer program SAS procedure SURVEYSELECT.

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

Interviewers carried out the fieldwork of the Farm Structure Survey 2007 and questioned farmers' and family farms.

Agricultural companies and enterprises had to fill in the questionnaire themselves and to send it directly to a regional statistical office for further processing. Specialists in the regional statistical offices checked if all the data were filled in and if they were correct. Mistakes were corrected and unclear items were cleared out by question to the company or enterprise by telephone. The questionnaires and instructions for filling them in were sent to each company and enterprise before the survey (at the end of March 2007).

758 interviewers worked during the Survey. The fieldwork was carried out over the period from 1 to 29 June 2007. The visits to farmers lasted for three first weeks in the period from 1 to 22 June 2007, and the last week (from 22 to 29 June) was used for checking and collecting the questionnaires.

The interviewers visited each holding from the sample, interviewed the farmers and filled in the questionnaires. The interviewed person had to answer all the questions asked in the questionnaire. Unclear questions were explained by the interviewer.

The interviewer had to interview the persons directly and entered the data to the questionnaire form according to the FSS rules.

The interviewer got a list of farms. She/he went from farm to farm and made interviews. First, the interviewer found out the type of the farm (farm/small unit). If there was an active farm in question, the interviewer had to interview the farmer and fill in the Farm Structure Survey questionnaire. In the interviewer's list, there was an individual number for each farm. This number was marked in the questionnaire. If there was a small unit in question, information about the owner and areas of agricultural land, crop areas and livestock was collected and written down in the Farm Structure Survey questionnaire's annex 1 – Small units questionnaire.

It was not required to prove the correctness of the answers by documents when the farm holder or his/her spouse or other family member of full age in his/her absence was interviewed. But, if necessary, the interviewer could use an identity card or ownership documents. If the farm holder was not able to indicate some areas, e.g. the area of an orchard or vegetable field, the interviewer had to measure them with the measuring meter or with steps having estimated the step length beforehand. In case when there was no one who could answer the questionnaire at the moment when the interviewer was visiting a holding, the interviewer had to visit a holding once more, having told the time of the next visit in advance.

Each interviewer questioned about 80 farmers' and family farms. The interviewer had to write down the completion time of each questionnaire. According to the collected information, the average completion time per questionnaire was 46 minutes.

The average completion time per questionnaire in agricultural companies and enterprises was 98 min.

The interviewers had to submit the filled in questionnaires to the districts municipality statisticians. Here, the questionnaires were checked, mistakes were corrected and unclear items were cleared out by a repetitive question to the farmer (by telephone or visiting him/her). The checked questionnaires were sent to the five regional statistical offices where the data were manually entered by a special computer program. Errors disclosed during the data input were corrected by sending back the whole questionnaire to statisticians in district municipalities for revision. Correct data were directed to Statistics Lithuania for further processing. Data entry was finished on 20 July.

Data processing included the following tasks:

- Logic checks and checking for completeness of the questionnaire
- Manual recording the questionnaire data in the computers
- Automatic data checking and quality checking through suitable software
- Software for entering data of the FSS 2007 developed using a programming tool ORACLE.

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

Administrative data sources were not used for the FSS 2007.

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

#### *Checks at the local level*

Filling in the questionnaires, the interviewer had to observe whether the answers provided were not contradicting to each other and complied with the logical and arithmetical connections given in the questionnaires. After completing questionnaires, interviewers provided these to the statisticians in the district municipalities. Statisticians in district municipalities checked whether the interviewer him-/herself understood the questions right, whether the questionnaire was filled in completely and indicators which have to be filled in were not missing, whether the logic and arithmetical control was done. Mistakes were corrected and unclear items were cleared out by a repetitive question to the farmer (by telephone or visiting him/her).

Checking of the Survey questionnaires was started already on the third day of the survey. Thus, frequently made mistakes and unclear items were cleared to avoid them in future.

The correct data were provided to Statistics Lithuania for further processing.

#### *Checks in the Statistical Office*

During the data entering, the software (Oracle) gave feedback of the errors on each questionnaire to the data operator entering the data form, and it was possible to see and correct them. There were 236 different logic and arithmetic controls.

The FSS 2007 data from regional statistical offices were transmitted online to Statistics Lithuania. In Statistics Lithuania, data checking was made by the staff of the Agriculture and Environment Statistics Division. Statisticians in Statistics Lithuania could see data of each entered farm from the beginning of the survey data entry. It was possible to correct incorrect data at once. The FSS 2007 data were compared with data of other statistical information sources, such as the previous surveys of crop and animal production and the cattle register. Respondents were contacted if needed and the discovered errors were corrected. Also, individual data were compared with the Agricultural Census 2003 and FSS 2005 data.

### **3.4.5 Non-response**

The FSS 2007 sample size was 60,888 units. The number of surveyed farms was 61,263 (375 new farms were found). Altogether, data were provided by 56,798 farms, of which:

- 54,039 farmers' and family farms
- 557 agricultural companies and enterprises
- 2,202 small units.

The information was not obtained from 4,465 farms (7.3 per cent of the sample). 2,202 questioned farms filled in the Small units questionnaire.

Causes for the FSS 2007 questionnaire not being filled in:

- if the holding does not perform agricultural activity (sold or granted land, early retreat from the farm market, farmer is dead, etc.)
- if the holding's land is temporarily uncultivated, but the holder means to continue the agricultural activity in future (leased land, illness of the holder, etc.)
- if the holding is not found
- if the holder refused to render information.

It was tried to reduce the number of refusals by choosing the interviewers from the same area. Also, as mentioned previously, if there was no person capable to answer the questions of the questionnaire when the interviewer visited the farm, the interviewer had to visit the farm again having informed about the visit time in advance. If the address was changed and a new address was available, the interviewer visited the holder at the new address.

The unit non-response was 1,728 (2.8 per cent of the sample). 449 of them were refusals to render information and 1,279 farms were not found. Farms which finished their agricultural activity or temporarily suspended their agricultural activity do not belong to units of non-response. Also, farms which filled in the Small units questionnaire do not belong to units of non-response.

### **Causes for the Farm Structure Survey questionnaire not being granted**

Causes	Number of
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	<b>farms</b>
Holding is a small unit	2,202
Holding does not perform agricultural activity	2,493
Holding's land temporarily uncultivated, but the holder means to continue the agricultural activity in future	244
Holding is not found	1,279
Holder refused to render information	449
<b>Total</b>	<b>6,667</b>

### **3.5 DATA PROCESSING, ESTIMATION AND ANALYSIS**

Statistics Lithuania was responsible for data processing, estimation and analysis.

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

Re-weighting was used for unit non-response adjustment. Notate  $H$  – number of strata ( $h=1,2,\dots,H$ ),  $w_h$  – design weights,  $N_h$  – population size in  $h$  strata,  $n_h$  – sample size in  $h$  strata,  $m_h$  – response farms in  $h$  strata,  $k_h$  – farms which leased, sold or granted land, early retreat from the farm market or the farmer is dead, in  $h$  strata. So for all farms, except farms of legal persons, new weights are  $d_h = \frac{N_h}{n_h} \frac{n_h}{m_h + k_h} = \frac{N_h}{m_h + k_h}$ .

For farms of legal persons, new weights were not calculated, but the population was reduced.

If some type of crops/animal/poultry was not indicated in the survey questionnaire, we consider that this item is equal 0 (no imputation was made for item non-response).

#### ***3.5.2 Estimation and sampling errors***

The procedure SURVEYMEANS of computer program SAS was used for estimating totals and coefficients of variation. A sub-sample was not used and each holding had only one extrapolation factor. Extrapolation factors were changed because of re-weighting for non-response adjustment. The main characteristics of agriculture for the whole Lithuania was usually less than 6 %.

### **Coefficients of variation for main indicators of the Farm Structure Survey 2007 in Lithuania**

Characteristic		Coefficient of variation, %
Utilised agricultural area		0.4
Arable land		0.5
Cereals		
of which	winter wheat	0.8
	rye	1.4
	spring barley	0.6
	oats	1.1
Vegetables (outdoor)		1.0
Sugar beet		1.9
Potatoes		0.6
Fruit and berry plantations		1.1
Number of cattle		0.4
Number of pigs		0.9
Number of sheep		5.6
Number of goats		3.2
Number of poultry		1.0
Total number of employees (in agriculture)		0.3

### 3.5.3 Non sampling errors

#### *Coverage errors*

##### Under-coverage errors

The list of agricultural holdings in the FSS 2007 was based on the list of the Agricultural Census 2003 updated with data from other agricultural surveys. However, during the FSS 2007, 375 new farmers' and family farms were found. These farms were not included in the FSS 2007 sample, but they belong to the target population.

##### Over-coverage errors

According to the results of the FSS 2007, the frame over-coverage was 18,205 (7.3 per cent of the sample). These units, in fact, should not belong to the target population because they have finished their agricultural activity, their land was sold, granted, etc.

##### Contact errors

All the family farms that were not contacted during the first three weeks of fieldwork (from 1 to 22 June 2007) were later investigated additionally. Out of 60,297 sampled farmers' and family farms, contact errors in the survey constitute 2.1 %. All agricultural companies and enterprises (591) were found, and there were no contact errors.

### ***Measurement errors***

There was not a big threat of misunderstanding questions because the interviewers were able to explain unclear items.

One problem was employees working without a contract. If they do not have a contract, they won't also answer the question about hours worked.

If the holder could not tell some areas, e.g. orchard area or area under vegetables, the interviewer could measure these areas in steps, providing that length of a step was known.

In order to minimise measurement errors, the main part of information was collected by well-trained interviewers. Due to this reason, measurement errors were small.

### ***Processing errors***

The FSS 2007 individual data were manually entered by a special computer program. Logical and arithmetical control was made. Data were compared with data of other statistical information sources (previous surveys of crop and animal production etc.). So we can predicate that most processing errors were discovered.

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

		Count	% of total
Total number of farms in the FSS 2005 sample		60,888	100
Number of small units		2,202	3.6
Holding does not perform agricultural activity		2,493	4.1
Holding's land temporarily uncultivated, but the holder means to continue the agricultural activity in future		244	0.4
Number of non-response		1,728	2.8
of which	holding is not found	1,279	2.1
	holder refused to render information	449	0.7

### ***3.5.4 Evaluation of results***

The comparisons of the FSS 2007 data were made with administrative data and other agricultural statistics surveys. Also, the FSS 2007 data were compared with the FSS 2005 data.

FSS 2007 micro data were compared with:

- IACS (Crops declaration database)
- Organic Farming Register
- other agricultural statistics surveys (crop production, animal survey, etc.).

Differences between the FSS 2007 data and other agricultural statistics surveys as well as differences between the FSS 2007 data and the Crops declaration database and the Organic Farming Register were clarified. If necessary, holders were contacted (usually by phone) for additional information. Differences occurred mainly due to the differences in definitions and methodology. The total area of declared crops in the Crops declaration database was by 1% less than in the FSS.

Aggregated data of FSS 2007 were compared with:

- IACS (Crops declaration database)
- Register of Livestock
- Organic Farming Register
- other agricultural statistics surveys.

The sizes of sown areas of crops (divided by crops) in the Crops declaration database were compared with sown areas of the FSS 2007. After the comparison, it was found out that differences were small and caused by the differences in the definitions of characteristics and units.

Comparing with the Register of Livestock, the total numbers of cattle, cows and sheep were compared. The number of registered cattle was by 9% bigger than that in the FSS, the number of cows was by 1% bigger than in FSS. The number of sheep in the Register of Livestock was by 2% bigger than in the FSS.

Differences between the Organic Farming Register and the FSS 2007 data were small and caused by the difference in the definition of a unit.

After the comparison of the FSS 2007 data with data from crop production and animal surveys, only little differences were detected.

Comparison with the Lithuanian Labour Force Survey was not made due to the fundamental methodological differences.

The comparison of the FSS 2007 data with administrative data and other surveys showed that the Farm Structure Survey 2007 results can be characterized as reliable.

#### **4. PUBLICATION AND DISSEMINATION**

A publication of the FSS 2007 results (Results of the Farm Structure Survey 2007 in Lithuania) will be issued by September 2008. In this publication, data of the Farm Structure Survey 2005 and 2007 on land and its usage, number of livestock by kind and age groups, farm holders and their family members, number of hired employees on the farm and duration of their working time, activities other than agricultural ones will be presented. Data will be published like the total of the Republic, by counties and district municipalities. The description of the methodology will be included in the publication. The publication will be bilingual: in Lithuanian and English.

## **REFERENCES**

Law on Statistics of the Republic of Lithuania  
General instructions for filling the FSS 2007 questionnaire  
Results of the Census of Agriculture 2003 in Lithuania  
Results of the Farm Structure Survey 2005 in Lithuania

## **ANNEXES**

*Farm Structure Survey questionnaire with anexes (Lithuanian version)*  
*Farm Structure Survey questionnaire (English version)*  
*Small unit questionnaire (English version)*  
*Information of the Farm Structure Survey (English version)*  
*Letter for respondents (Lithuanian version, paper format)*