

FARM STRUCTURE SURVEY 2007

**NATIONAL METHODOLOGICAL
REPORT**

May 2008

MEMBER STATE: SLOVENIA

FARM STRUCTURE SURVEY 2007 NATIONAL METHODOLOGICAL REPORT

A. CONTENTS

SUMMARY	3
1. Introduction.....	4
1.1 History, scope	4
1.2 National legislation	6
2. CONTENT	7
2.1 Characteristics and reference period.....	7
2.2 Questionnaire.....	10
3. Survey methodology	10
3.1 Survey organisation	10
3.2 Calendar (overview of work progress)	11
3.3 Preparing the survey operations ('Planning the survey')	14
3.3.1 Population and frame	14
3.3.2 Survey design	16
3.3.3 Pilot survey	18
3.3.4 Informing and training the staff and respondents	18
3.4 Sampling, data collection and data entry	19
3.4.1 Drawing the sample	19
3.4.2 Data collection and entry	19
3.4.3 Utilisation of administrative data sources.....	20
I. Indication of administrative data source intends to be used (name and legal base if any):	20
II. Characteristics (list of codes and names):.....	20
III. Justification:	21
a. "Relevance" and "comparability"	21
b. "Clarity"	21
c. "Completeness"	21
d. "Coherence"	21
e. "Accuracy"	21
I. Indication of administrative data source intends to be used (name and legal base if any):	21
II. Characteristics (list of codes and names):.....	22
III. Justification:	22
a. "Relevance" and "comparability"	22
b. "Clarity"	22
c. "Completeness"	23
d. "Coherence"	23
e. "Accuracy"	23
3.4.4 Control of the data	24
3.4.5 Non-response	25
3.5 Data processing, analysis and estimation.....	26
3.5.1 Methods for handling missing or incorrect data items.....	26
3.5.2 Estimation and sampling errors	26

3.5.3	Non-sampling errors ().....	26
3.5.4	Evaluation of results	28
4.	PUBLICATION AND DISSEMINATION	28
	REFERENCES	28
	ANNEXES	29

ABBREVIATIONS USED:

SORS	Statistical Office of the Republic of Slovenia
ASC	Agricultural Statistics Committee at SORS
FSS	Farm Structure Survey
AC	Agricultural Census
LSU	Livestock size unit
MAFF	Ministry of Agriculture, Forestry and Food

SUMMARY

In Slovenia only two independent censuses of agricultural holdings, or farm structure surveys, were conducted before the year 2000 – the first one in 1930 and the second one in 1960. However, due to political and economic changes in this period, it is difficult to compare them. In 1969 a sample census of agricultural holdings was conducted, and in 1971, 1981 and 1991 censuses of agricultural holdings were conducted within population censuses. However, due to a limited number of questions related to agriculture, these data do not provide complete and comparable information on the structure of agricultural holdings in Slovenia. In 1997 the first EU comparable sample farm structure survey was carried out and in the year 2000 first EU comparable Agricultural Census was carried out.

After the Agricultural Census 2000 we followed the EC programme of Farm Structure Surveys (FSS) regarding the list of characteristics as well as the time table.

The reference date for the Farms Structure Survey 2007 for the data on land, land use and livestock was 1 June 2007; the reference period for the data on labour force was from 1 June 2006 to 31 May 2007.

The following data were collected in the FSS 2007:

- land owned and land used by agricultural holdings,
- crop areas,
- number of livestock by categories,
- labour force,
- other gainful activities on agricultural holdings,

- forestry.

The list of characteristics follows the EC programme of Farm Structure Surveys as well as national needs. National needs were discussed with main users represented in the Agricultural Statistics Committee, which is an advisory body of the SORS.

The observation units in the survey were agricultural holdings in the territory of the Republic of Slovenia, which are divided into:

- agricultural enterprises (surveyed by post),
- family farms (surveyed by face-to-face interview).

Agricultural holdings should apply to the following threshold:

- at least one hectare of utilised agricultural area, or
- less than one hectare of utilised agricultural area, but:
 - at least 0.1 hectare of utilised agricultural area and 0.9 hectare of forest, or
 - at least 0.3 hectares of vineyards and/or orchards, or
 - two or more livestock units (LSU), or
 - 0.15 to 0.3 hectare of vineyards/orchards and 1 or 2 LSU, or
 - more than 50 beehives, or
 - are market producers of vegetables, herbs, strawberries, mushrooms, flowers or ornamental plants.

All agricultural enterprises were surveyed, but only those family farms that were chosen in the sample (altogether 17,000 family farms).

The sampling frame was a list of all active family farms from the Statistical Register of Agricultural Holdings at SORS. There were altogether 87,362 family farms included into the sampling frame.

Preparations for the FSS 2007 started in autumn 2006 and will end with the publication of final results on 30 June 2008. Fieldwork was carried out between 1 and 20 June 2007.

Data were entered manually at the SORS with Blaise software. For sampling, data verification, imputations and estimation of sampling errors, SAS was used.

Results are published in a paper version and are also available in the SI-STAT database of the SORS.

1. INTRODUCTION

1.1 History, scope

Before the year 2000 only two independent censuses of agricultural holdings, or farm structure surveys, were conducted before the year 2000 in Slovenia – the first one in 1930 and the second one in 1960. However, due to extensive political and economic changes in this period, it is difficult to compare them. Nevertheless, they are an important basis for the assessment of the situation in agriculture in Slovenia in a certain period. In 1969 a sample census of agricultural holdings was conducted, and in 1971, 1981 and 1991 censuses of agricultural holdings were conducted within population censuses. However, due to a limited number of questions related to agriculture, these data do not provide complete and comparable information on the structure of agricultural holdings in Slovenia.

In 1997 the first Farm Structure Survey, harmonised with EU legislation, was carried out. The EU comparable definition of agricultural holding and the threshold were set up. The Farm Structure Survey 1997 was also treated as a pilot survey for the Agricultural Census 2000.

In 2000 Slovenia carried out an independent Agricultural Census, which was carried out according to the:

- Commission Decision 2000/115/EC of 24 November 1999 relating to the definitions of the characteristics, the list of agricultural products, the exceptions to the definitions and the regions and districts regarding the surveys on the structure of agricultural holdings;
- Commission Decision 98/377 of 18 May 1998 adapting Annex I to the Council Regulation (EEC) No 571/88 in view of the organisation of the Community surveys on the structure of agricultural holdings.

When establishing the methods for the Agricultural Census 2000 the recommendations of the FAO¹ regarding the world agricultural censuses were also taken into consideration.

Within the framework of the 2000 Agricultural Census two regular surveys were carried out: the Survey on Areas Sown and the Survey on the Number of Cattle. Due to this, the list of characteristics was in certain areas more detailed than requested in the Commission Decisions.

After the Agricultural Census 2000 we followed the EC programme of Farm Structure Surveys (FSS) regarding the list of characteristics as well as the time table.

In 2007, Farm Structure Survey was carried out according to the following regulations:

- 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
- Commission Decision 2007/80/EC of 1 February 2007 authorising certain Member States to use information from sources other than statistical

¹ Food and Agriculture Organization of the United Nations

surveys for the 2007 survey on the structure of agricultural holdings (notified under document number C(2006) 7173) (Text with EEA relevance)
The reference date for the Farms Structure Survey 2007 for the data on land, land use and livestock was 1 June 2007; the reference period for the data on labour force was from 1 June 2006 to 31 May 2007.

1.2 National legislation

The legal bases for conducting the FSS 2007 are three acts:

- National Statistics Act (OJ RS No. 45/95 and No. 9/01)
- National Programme of Statistical Surveys (OJ RS No 99/05), which deals with all statistical surveys and work to be done in 2006
- National Programme of Statistical Surveys (OJ RS No 130/06), which deals with all statistical surveys and work to be done in 2007

The National Statistics Act defines the following fundamental principles:

- Professional and institutional independence
- Statistical confidentiality
- Availability, accessibility and clarity of information
- International comparability
- Transparency of methodology
- Rational use of resources
- Access to administrative data sources.

In the National Programme of Statistical Surveys the following issues are dealt with:

- Responsible institution: Statistical Office of the Republic of Slovenia
- Content of the survey:
 - land use
 - crops on arable land
 - permanent crops
 - number of livestock
 - other characteristics used for calculation of different indicators
- Scope of the survey:
 - collecting data the structure of agricultural holdings
 - ensuring data on agricultural holdings comparable with other Member States of the EU.
- Frequency of the survey: every 2-3 years
- Reference date: 1 June 2007
- Who should provide the data and when:
 - all agricultural holdings performing agricultural activity;
 - Ministry of Agriculture, Forestry and Food (administrative data)
 - Tax Administration of the Republic of Slovenia (administrative data)
 - Agricultural holdings and governmental institutions should provide data from 1 June – 30 June 2007
- Deadline for publishing final results: June 2008
- Harmonisation with EU legislation (partially /fully): Fully

Tasks in 2007 according to the National Programme of Statistical Surveys were the following:

- preparation of the questionnaire and methodology
- survey implementation
- data processing
- publishing of provisional results
- preparations on calculation of SGM coefficients

Tasks in 2008 according to the National Programme of Statistical Surveys were the following:

- data processing
- preparation of EUROFARM file
- calculation of SGM coefficients
- calculation of other characteristics (e.g. LSU, AWU, type of farming, socioeconomic type)
- publishing of final results

National legislation does not deal with financial resources needed for the implementation of the Farm Structure survey.

2. CONTENT

2.1 Characteristics and reference period

The following groups of questions were included in the questionnaire for FSS 2007:

- Chapter A: Address of the holding – questions enable us to update address of the agricultural holding in the Statistical Register of Agricultural Holdings
- Chapter B:
 - Number of livestock
- Chapter C:
 - Area – total
 - Crops on arable land, main and secondary crops
 - Permanent crops
 - Nutrition management
 - Irrigation
- Chapter D: Labour force on family farms
- Chapter E: Labour force in agricultural enterprises
- Chapter F: Supplementary activities
- Chapter G: Services with machinery
- Chapter H: Forestry (removals, services in forestry, machinery for forestry)

Reference date of the FSS 2007 was 1 June 2007

Reference period was 1 June 2006 – 31 May 2007

Some of the characteristics from the list of characteristics were not included into the FSS 2007, because they are not existing (NE), not significant (NS) or

not applicable (NA) in Slovenia. The list of these characteristics is presented in Table 1.

Table 1: List of NE and NS characteristics

Field Id	Unit	Label		Comment
D02	HA	Durum wheat	NS	Very rare crop in Slovenia. In subsidies 2007, applications were made for less than 1 ha of durum wheat. Included in D01.
D07	HA	Rice	NE	Not grown in Slovenia.
D09F	HA	Lentils, chick peas and vetches	NS	Very rare crops in Slovenia. In subsidies applications lentils, chick peas and vetches do not exist as a separate crop(s) either.
D23	HA	Tobacco	NE	Not grown in Slovenia.
D25	HA	Cotton	NE	Not grown in Slovenia.
D29	HA	Linseed (oil flax)	NS	Very rare crop in Slovenia. In subsidies 2007, applications were made for 2 ha of flax. Included in D19.
D31	HA	Flax	NS	
D32	HA	Hemp	NS	Very rare crops in Slovenia. In subsidies 2007, applications were made for 11 ha of hemp. Included in D19.
D33	HA	Other textile crops	NE	Not grown in Slovenia.
D35	HA	Industrial plants not mentioned elsewhere	NS	Not grown in Slovenia. In subsidies applications other industrial crops do not exist as a separate crop either.
F03	HA	Permanent grassland, eligible for the payment of subsidies	NS	Estimated as not significant in 2007. In 2007 there was no special payment for permanent grassland taken out of production. Permanent grassland and meadows no longer used for production purposes and eligible for the payment of subsidies" (F03) are included in "Rough grazing" (F02)"
G01B	HA	Fruit and berry plantations - subtropical climate	NE	Not grown in Slovenia.
G01C	HA	Fruit and berry plantations - nuts	NS	Very rare crop in Slovenia. Included in G01A. According to administrative source, in 2007 the area of nuts was app. 150 ha.
G02	HA	Citrus plantations	NS	Very rare crop in Slovenia. Included in G01A. The area of citrus plantations can not be displayed since due to statistical confidentiality.
G03A	HA	Olive plantations - table olives	NS	Not important crop in Slovenia and used mainly for self-consumption. Included in G03B. Area is estimated to 70 ha (area for 2 most important varieties is taken from administrative source).
G04C	HA	Vineyards - table grapes	NS	Not grown in Slovenia.
G04D	HA	Vineyards - raisins	NE	Not grown in Slovenia.
G06	HA	Other permanent crops	NE	Not grown in Slovenia.
G07	HA	Permanent crops under glass	NE	Not grown in Slovenia.
I08C	HA	Set aside areas under incentive schemes - converted into permanent pasture	NE	This kind of incentive schemes were not foreseen for Slovenia for 2007.
I08D	HA	Set aside areas under incentive schemes - converted into wooded areas	NE	
I08E	HA	Set aside areas under incentive schemes - others	NE	

Some of the characteristics were added to the questionnaire for national purposes only:

- use permanent grassland (number of harvests)
- some categories of livestock and crops are more detailed than needed since the Survey on the Number of Livestock and Areas Sown was carried out in the frame of the FSS
- number of trees in extensive orchards and olive groves and number of vines in vineyards – needed for calculation of production
- nutrition management – needed in estimation of treated areas
- labour force on family farms: we collected data for all persons in the household not only for those working on family farms (in order to insure data comparability with previous FSSs)
- forestry (removals, services in forestry) on request of researchers. FSS is the only source of data on forestry on family farms.

There were no changes in the definitions compared with previous surveys. There are differences in typology for AC 2000 and FSS 2003 - 2007 due to different calculations. Typology for AC 2000 was calculated by SORS, while typology for sample surveys 2003 - 2007 was calculated by Eurostat.

2.2 Questionnaire

In the past, two different paper versions of the questionnaire were prepared for:

- family farms;
- agricultural enterprises, since agricultural enterprises are usually willing and able to provide more detailed information.

In the FSS 2003 it was decided to use one version of the paper questionnaire only. In the questionnaire it is marked which questions are designated for family farms and which ones for agricultural enterprises.

On the first page of the questionnaire the address of the farm was pre-printed as well as the identification number of the farm, including the bar code of the identification number. The identification number and the bar code were an important tool in the logistic and processing of the questionnaires. Beside the identification number, also the codes of the field supervisor and the interviewer were pre-printed on the questionnaire.

In the 2007 we added also space for identification number used by the ministry of agriculture in order to improve linkage with data from administrative sources.

Copy of the questionnaire for FSS 2007 is attached in Annex I.

3. SURVEY METHODOLOGY

3.1 Survey organisation

SORS was the responsible body for conducting the FSS 2007.

No special Census Committee was formed for the FSS 2007, but the Agricultural Statistics Committee (ASC) acts its role. It is an advisory body of the SORS in which there are represented different ministries, research institutes and other governmental and non-governmental bodies having an interest in agricultural statistics. The changes of methodology are discussed within the ASC. The ASC discussed the questionnaire, methodology and organisational aspects of the FSS.

In the FSS 2007 276 interviewers were engaged. Their work was supervised by 8 supervisors. Interviewers and supervisors were selected by SORS. In the selection procedure the priority was given to the applicants with finished agricultural education programmes.

3.2 Calendar (overview of work progress)

		AUG07		SEP07		OCT07		NOV07		DEC07		JAN 08		FEB08		MAR08		APR08		MAY08		JUN08		JUL08		
		I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	
ADMINISTRATIVE DATA	Obtaining of data			■	■	■	■	■	■	■	■	■	■	■	■	■	■									
	Data analysis									■	■	■	■	■	■	■	■									
DATA PROCESSING	Calculation of sampling weights		■																							
	Calculation of CV		■																							
	Preparation of rules for data checking and imputations										■	■														
	Data checking, imputations																	■	■	■	■					
	Definition of tables											■	■													
	Preparation of tables - preliminary results					■																				
	Preparation of tables - final results																■	■	■	■	■	■				
	Preparation of data for updating Statistical register of agricultural holdings		■	■																						
	Preparation of EUROFARM file																						■	■		
	Validation of EUROFARM file																						■	■		
	Preparation of NMR																			■	■	■	■			
	Preparation of methodological report for national needs																					■	■	■	■	
	TYPOLOGY ¹⁾	Calculation of SGM coefficients					■	■	■	■	■	■	■	■												
Calculation of typology (by Eurostat)																								■	■	
Calculation of SO (Sept. - Dec. 2008)																								■	■	
DATA PUBLISHING ¹⁾	Preliminary results			■																						
	Final results																						■	■	■	
	Preparation of data for SI-STAT Database																						■	■	■	

¹⁾At the time of preparing the calendar for NMR these activities have not been finished yet.

3.3 Preparing the survey operations ('Planning the survey')

3.3.1 Population and frame

- **Population**

Population of the survey were agricultural holdings performing agricultural activity.

The definition of agricultural holdings as well as the threshold were established at AC 2000 and have not changed since then.

Agricultural holding is a single unit, both organisational and operating, of agricultural area utilised, forests, buildings, equipment and labour force, which has a single management and which is engaged in agricultural production.

Agricultural production includes:

- crop production:
 - production of cereals, other arable crops and grassland
 - production of vegetables, ornamental plants, seeds and seedlings
 - wine and fruit growing
 - mushroom production
- livestock breeding:
 - cattle
 - pigs
 - poultry
 - sheep
 - horses
 - beekeeping
 - breeding of other animals for human consumption

Agricultural production does not include:

- processing of agricultural products produced on agricultural holdings or agricultural products bought,
- agriculture services,
- forestry,
- fish farming and fishery,
- raising horses for recreation, if all fodder is bought.

Agricultural holding has **single management** when it is managed as a single unit in view of sharing the profit and loss, regardless of the number of persons managing it. A single agricultural holding is also a holding in which the management is divided among family members, but the profit and loss, labour

force and machinery are common. Its manager can be a natural or a legal person.

Holder of an agricultural holding can be a natural or a legal person acting as its own account manager.

European comparable agricultural holdings are those having:

- at least one hectare of utilised agricultural area, or
- less than one hectare of utilised agricultural area, but:
 - at least 0.1 hectare of utilised agricultural area and 0.9 hectare of forest, or
 - at least 0.3 hectares of vineyards and/or orchards, or
 - two or more livestock units (LSU), or
 - 0.15 to 0.3 hectare of vineyards/orchards and 1 or 2 LSU, or
 - more than 50 beehives, or
 - are market producers of vegetables, herbs, strawberries, mushrooms, flowers or ornamental plants.

All the statistics of agriculture correspond to this threshold; there is no special national threshold.

Definition of agricultural holding has not changed thus data are fully comparable.

- **Frame ⁽²⁾**

The list of agricultural enterprises was obtained from the Business Register. All agricultural enterprises were surveyed (131), but only those family farms that were chosen in the sample. Therefore, only the frame for family farms is described.

The sampling frame was a list of all active family farms from the Statistical Register of Agricultural Holdings at SORS. There were altogether 87,362 family farms included into the sampling frame.

Statistical Register of Agricultural Holdings was established after the AC 2000 in order to have a stable sampling frame for all agricultural surveys. It is operational since 2004. Register is updated twice a year (February/September) which enables us to have updated sampling frame for the surveys in June and December. Results of statistical surveys as well as IACS data are used for updating the register.

Addresses of the holdings were updated using the Register of Territorial Units.

⁽²⁾ The *frame* is the listing or listings of units that delimit, identify, and allow access to the elements or sets of elements of the target population.

SORS put a lot of effort to use all available statistical and administrative sources for updating the sampling frame. We minimise errors for agricultural holdings applying for supports by using data from the IACS. We have bigger problems with so called small family farms which are not interested in applying for subsidies. Usually these are family farms which are just above the threshold, managed by old holders and without successors. Since only a small proportion of small family farms are included in the sample, it happens only rarely that we have information for this type of farms. For some of them the last information that we have is the one from the Agricultural Census 2000. We estimate the overcoverage error with the eligibility rate, which is described in Chapter 3.5.2.

After the Agricultural Census 2000 duplicates in the sampling frame are of minor importance. Due to different definitions of agricultural holdings for statistical purposes and for IACS some duplicates have occurred when using IACS data for updating of farm register. Despite this fact, duplicates are of minor importance.

3.3.2 Survey design

The data collection method depends on legal personality of the agricultural holdings:

- Data on agricultural enterprises (i.e. legal persons from the Business Register) were collected with the questionnaire by post. The survey was exhaustive.
- The survey on family farms was a sample survey carried out by interviewers.

The sample design for family farms is stratified simple random sampling. Family farms were stratified according to 20 criteria which are shown in Table 3 and according to the 12 statistical regions (NUTS 3). Family farms were stratified into 48 strata.

Table 3: Criteria for distribution of family farms into strata

	Stratum1	Stratum2	Stratum3	Stratum4
UAA (ar)	>=2000	800-<2000	500 - <800	>0 - <500
Arable land and wheat (ar)	>=600 and >=250	300-<600 and 100- 250	100 -<300 and 50- <100	>0 - <100 and >0 - <50
Extensive orchards (No of trees)	>= 150	100 - <150	50 - <100	>0 - <50
Vineyards (ar)	>= 500 ar	300 - <500	100 - <300	>0 - <100
Orchards plantations (ar)	>= 200	100 - <200	50 - <100	>0 - <50
Potatoes (ar)	>= 100	50 - <100	25 - <50	>0 - <25
Hops (ar)	>= 500	300-<500	100 - <300	>0 - <100
Sugar beet (ar)	>= 200	100 - <200	50 - <100	>0 - <50
Cattle, total (No)	>= 40	15 - 39	5 -14	1 - 4
Pigs, total (No)	>= 40	20 - 39	4 -19	1 - 3
Sheep and goats,	>= 30	20 -29	10 - 19	1 -9

	Stratum1	Stratum2	Stratum3	Stratum4
breeding animals (No)				
Broilers (No)	>= 1000 or INT_REJ_PER = 'Da'	100 - 999	50 - 99	1-49
Laying hens (No)	>= 1000 or INT_REJ_PER = 'Da'	100 - 999	50 - 99	1-49
Other poultry (No)	>= 1000 or INT_REJ_PER = 'Da'	100 - 999	50 - 99	1-49
Horses (No)	>= 20	10-19	5-9	1-4
Deer (No)	>= 20	10-19	5-9	1-4
Quail (No)	>= 30	20 -29	10 - 19	1 -9
Rabbits (No)	>= 75	50 - 74	25 - 49	1-24
Ostriches (No)	>= 20	10-19	5-9	1-4
Beehives (No)	>=50	20-49	10-19	1-9

If the family farms satisfied one of the criteria for stratum one, they were allocated into this stratum. On other family farms criteria for stratum 2 were applied and there were allocated into stratum 2 or 3 (if they did not satisfied criteria for stratum 2). Those family farms which did not satisfied criteria for stratum 3 were allocated into stratum 4.

Family farms from stratum 1 (large family farms) were selected with certainty. In strata 2 – 4 allocation was defined proportional according to the number of family farms. Afterwards family farms were selected systematically. The final size of the sample was 17,000 family farms. In Table 4 distribution of family farms in the sampling frame and in the sample is shown.

Table 4: Number of family farms in the sampling frame and sample by strata

	Sample frame		Sample	
	number	share (%)	number	share (%)
Stratum 1	7298	8,4 %	7298	42,9 %
Stratum 2	18528	21,2 %	2245	13,2 %
Stratum 3	29961	34,3 %	3631	21,4 %
Stratum 4	31575	36,1 %	3826	22,5%
Total	87362	100,0 %	17000	100,0 %

A sample is drawn for each sample survey. However, family farms from stratum 1 are always included into the sample because they are important in the sense of agricultural production.

When deciding about the sample size, several aspects were taken into account:

- CVs that are requested in the legislation for the surveys on livestock numbers and areas sown;
- Historical experiences;
- Budget.

Within the framework of the FSS 2007, the regular annual Survey on Areas Sown and the Number of Livestock was carried out. With this kind of organization we carried out only one survey and reduced the response burden on farmers. On the other hand, we have to provide results for the Survey on Areas Sown and the Number of Livestock much earlier than for the FSS, which means more burdens for the SORS.

3.3.3 Pilot survey

There was no special pilot survey carried out due to several reasons. Since the list of characteristics remained mainly unchanged and due to lack of resources, we decided not to carry out the pilot survey. In the field of agriculture there are also other statistical surveys carried out by interviews. We decided to test new questions in the frame of regular surveys carried out in December each year.

3.3.4 Informing and training the staff and respondents

Informing the farmers

The farmers were informed about the FSS 2007 by letter of notification sent to all family farms in the sample with the basic information on the FSS:

- what is the FSS and what is the purpose of the FSS,
- when the FSS will be carried out,
- who is responsible for the FSS,
- which data will be collected,
- information about the protection of collected data.

A leaflet presenting main results of previous survey was added to the letter. In 2007 we have decided to inform the farmers about the FSS with notice in most read agricultural newspaper. It was published one week before the survey.

Training of supervisors and interviewers

Before the FSS, the SORS organised training for supervisors and interviewers as well as for students responsible for data entry. Training was carried out by the SORS. The training sessions took 5 hours. There were altogether 8 training sessions organized in different towns in the last week of May 2007.

At the training we provided all necessary documents to the interviewers:

- questionnaires with pre-printed addresses
- separate list of agricultural holdings that interviewer has to visit
- methodological explanations and definitions of characteristics surveyed
- all the necessary stationery.

At the training the interviewers and supervisors had to sign a statement that they will return all the material connected with the FSS and that they will not

copy, transcribe or otherwise misuse the data from the questionnaires on family farms.

3.4 Sampling, data collection and data entry

3.4.1 Drawing the sample

From stratum 1 (large family farms) we drew all units, while in other strata the number of selected units was proportional to the number of units in the frame per strata. We used stratified systematic random sampling with implicit regional (NUTS 3) stratification. For drawing the sample, SAS program, SURVEYSELECT procedure, was used.

3.4.2 Data collection and entry

Fieldwork organisation, data transmission to SORS

Data on family farms were collected with the help of authorised interviewers, while the data on agricultural enterprises were collected by post.

The SORS carried out the FSS of family farms with 14 field supervisors and 276 interviewers selected by SORS. Every field supervisor co-ordinated work of about 20 interviewers and every interviewer had to cover about 60 family farms.

The SORS equipped the field supervisors and interviewers with all the necessary material (lists of farms, questionnaires, methodological guidelines, authorisation for work, office supplies).

Interviewers performed fieldwork between 1 and 20 June 2007. They delivered answered questionnaires daily to their supervisors. Each interviewer had to take a FSS of all family farms on their lists.

Supervisors examined the answered questionnaires, checked the sums and sent the questionnaires to the SORS.

At the SORS the questionnaires were recorded with the bar code printed on each questionnaire. The record of received questionnaires served to control the work of interviewers and supervisors. Received questionnaires were put in folders by areas covered by individual interviewers.

Parallel with the recording, the SORS checked - especially in the first week of FSS implementation - a few questionnaires from each interviewer. Field supervisors were informed about all systematic errors by telephone.

At the end of the FSS, supervisors had to collect all the FSS material and return it to the SORS. At the training the interviewers and field supervisors had to sign a statement that they will return all the material connected with the

FSS and that they will not copy, transcribe or otherwise misuse the data from the questionnaires on family farms.

Completion time per questionnaire

Completion time is only recorded for personal interviewing at family farms. On average, the completion time was 28 minutes. However, there were slight differences among strata, i.e. average completion time varied from 26 minutes in the stratum with the smallest family farms to 29 minutes in the stratum with large farms.

Data entry modes

FSS data were entered manually at the SORS with Blaise software. The first data verification took place at the time of data entry.

3.4.3 Utilisation of administrative data sources

Utilisation of administrative data sources is defined with Commission Decision 2007/80/EC of 1 February 2007 authorising certain Member States to use information from sources other than statistical surveys for the 2007 survey on the structure of agricultural holdings (notified under document number C(2006) 7173) (Text with EEA relevance).

For FSS 2007, it was foreseen for Slovenia to use of two administrative sources: **IACS** and **Bovine register**.

Description of use of the administrative sources for other characteristics is described below.

Key for data linkage was ID of agricultural holding established by MAFF. Each agricultural holding in the Statistical Register of Agricultural holdings has also ID number of MAFF.

I. Indication of administrative data source intends to be used (name and legal base if any):

System for the identification and registration of bovine animals

II. Characteristics (list of codes and names):

J02 – J08

III. Justification:

a. “Relevance” and “comparability”

All characteristics are defined according to EU legislation. There is no difference in the definitions.

From the bovine register data on age and sex of the animals can be obtained. This is sufficient in FSS for all male bovine animals and for female bovine animals under two years old.

According to the regulation for FSS, female bovine animals of two years and over should be broken down to heifers, dairy cows and other cows. **Since these data are not available in the register, data will be collected by the survey.**

b. “Clarity”

Legal base: Regulation 1760/2000

Data from bovine register can be obtained as of any date of the year.

c. “Completeness”

Data on bovine animals are complete (except the purpose of breeding).

d. “Coherence”

Since SORS would like to avoid double data collection there is no other source of data.

e. “Accuracy”

Feasibility study was made in the frame of TAPAS 2004 – Phase II project on use of bovine register for statistical purposes. The main disadvantage of the register is that it does not contain data on the purpose of breeding which is required in animal production statistics. Since in FSS only data on age and sex are required for animals under two years old, data can be used directly from the register without further analysis or calculations.

I. Indication of administrative data source intends to be used (name and legal base if any):

IACS

II. Characteristics (list of codes and names):

1. Location of the holding:

- **A02** (Less favored area)
- **A02a** (Mountain area)
- **A03** (Agricultural areas with environmental restrictions)

2. Organic farming:

- **C05a** (UAA of the holding on which organic farming production methods are applied according to EC rules.)
- **C05d** (The UAA of the holding that are under conversion to organic farming production methods.)
- **C05e** (Is the holding applying organic production methods also to the animal production?)

3. I08 (Area subject to set-aside incentive schemes)

4. M (Gainful activities of the holdings)

5. data on characteristics under **D** (arable land), **E** (kitchen gardens), part of data of **F** (permanent crops – fruit and berry and olive plantations), **H** (arable land)

III. Justification:

a. “Relevance” and “comparability”

All characteristics are defined according to EU legislation. There is no difference in the definitions.

b. “Clarity”

Legal base: IACS

1. Reference period of data on LFA and areas with environmental restrictions in IACS refers to the latest list of LFA for Slovenia. For the purpose of control of subsidies applications, Slovenia had to introduce graphical control of subsidies applications for areas. Since the Land cadastre is not updated, Slovenia introduced in 2005 new system of land use called GERK (graphical units of land use) – GERK refers to so called “farm’s block” in IACS legislation.

2. Reference period for data on organic farming will be year 2007. Data set will include all farmers that were included in production control system in the year 2007.

3. Data on set-aside incentive schemes refer to the year 2007.

4. SORS will obtain list of all agricultural holdings performing gainful activities at the reference date of the FSS 2007, i.e. 1. June 2007.

5. SORS will obtain list of subsidies applications for the year 2007. Data on area refer to the year 2007.

c. “Completeness”

1. Data on LFA and areas with environmental restrictions are from IACS available only for those agricultural holdings which have interest for being included in IACS. Altogether there are about 10.000 agricultural holdings (out of about 80.000 family farms) for which data on LFA will be added manually on the base of address of the holding or holder.

2. Data on organic farming are complete.

3. Data on set-aside incentive schemes are complete.

4. Data set on gainful activities includes only holdings with registered gainful activity. In the survey farmers were asked whether other gainful activities is registered at MAFF or not. Only gainful activities not registered were surveyed.

5. SORS tried to avoid double data collection. Data from subsidies were taken for holdings applying for subsidies. Data for holdings not applying for subsidies were obtained by statistical survey. Data for some characteristics (which are not subject of subsidies) were collected by statistical survey.

d. “Coherence”

1. Not applicable for LFA.

List of LFA in IACS is the official list of LFA for Slovenia.

2. Organic farming: There is no other source of data.

3. Set-aside incentive schemes: There is no other source of data.

4. There is a difference between registered and all holding performing gainful activities. Gainful activities not registered at MAFF were surveyed and data were combined with administrative data.

5. Since SORS would like to avoid double data collection there is no other source of data.

e. “Accuracy”

1, 2, 3 and 4: Not applicable since no other data sources exist.

4. No.

5. Data from subsidies applications are checked according to the IACS rules. SORS already uses data from subsidies for the annual survey on areas sown.

3.4.4 Control of the data

Supervisors examined the answered questionnaires, checked the sums and sent the questionnaires to SORS. SORS provided a list of data controls that should have been done.

In the first week of FSS implementation SORS screened a few questionnaires from each interviewer. Supervisors were informed about all systematic errors by telephone.

After the data entry and verification with Blaise, we also used SAS for micro data control. These controls were calculation controls and logical controls. Before corrections were accepted and entered, the field supervisors or farmers had been contacted by telephone if necessary.

After entering, all data were firstly checked with Blaise software.

The following controls were done at micro level:

- By coded answers (e.g. YES, NO) we checked if the foreseen codes were used,
- Completeness of data (e.g. if there is area irrigated, there should also be data on the irrigation method)
- Sums were checked again,
- For every characteristic the maximum value was determined on the basis of previous surveys. If the entered value exceeded the maximum value, the controller had to check the paper questionnaire or to contact the farmer.
- Relations among certain characteristics were checked, e.g.:
 - livestock and storage facilities for natural fertilisers of animal origin
 - density of trees in orchards and vines in vineyards,
 - if the farm has dairy cows, they have to have milk,
 - in the part of the questionnaire on the labour force there were several cross checking
 - etc

By Blaise, errors were divided into:

- hard errors (e.g. wrong sums, wrong codes used, illogical data, etc.) – The error should be solved before the data entry continues. In most cases data with hard errors were checked by farmers by telephone. There were altogether 80 hard errors foreseen.
- active signals (e.g. maximum values of certain characteristics were exceeded) – SORS provided instructions how to proceed in this kind of errors. There were altogether 70 active signals foreseen.

After checking with Blaise, we undertook analysis at macro level with SAS software:

- firstly we checked if farms satisfy the threshold,
- we checked the maximum values for each characteristic,
- we compared our data with applications for subsidies at micro and macro level.

In this way we have tried to avoid errors at data entry.

3.4.5 Non-response

The response rate is the share of response among all eligible family farms. Although we obtained the answer after the deadline for data collection (e.g. farmers refused the interviewer but they were willing to answer by telephone), we consider this as a response.

The eligibility rate is the share of eligible family farms among all family farms chosen for the sample.

The final response rate was 90.5%. Although this was the lowest response rate among all field survey we still considered it as satisfactory. However, we put a lot of effort to obtain complete response from agricultural enterprises and from large family farms. For this purpose we contacted farmers by telephone if necessary.

Beside the response rate we have also calculated so called interviewing rate. Interviewing rate is the share of interviewed family farms among all family farms chosen for the sample. Response rates, eligibility rates and interviewing rates are shown in the table 5.

Table 5: Eligibility rates, response rates and interviewing rates by strata

	Eligibility rate (%)	Response rate (%)	Interviewing rate (%)
Stratum 1	97,5	90,8	88,5
Stratum 2	94,9	91,5	86,9
Stratum 3	90,3	91,3	82,4
Stratum 4	74,3	88,2	65,6
Total	90,4	90,5	81,8

The main reasons for non-response were refusals because of the following reasons:

- dissatisfaction with the current agricultural policy in Slovenia,
- problems with unsolved ownership (official procedures regarding succession can be very long),
- general refusal because of low economical conditions of living.

Non response of agricultural enterprises

Agricultural enterprises were not a part of the sample and are not included in the statistics in the table 5. According to the National Programme of Statistical

Surveys, reporting of data is obligatory for the enterprises (and voluntary for family farms). Due to low number of agricultural enterprises, all enterprises with non-response were contacted via telephone and asked for the cooperation. Due to administrative sources available we only had to obtain data on the labour force.

3.5 Data processing, analysis and estimation

3.5.1 Methods for handling missing or incorrect data items

In the process of data validation, we considered national rules (described in 3.4.4) as well as validation rules for EUROFARM.

All data on labour force were imputed using ad hoc imputations.

Validations and imputations were done by SAS.

3.5.2 Estimation and sampling errors

The obtained data were weighted due to unequal probability of selection and non-response. The same methodology is used for all agricultural surveys.

For key variables (cattle total, dairy cows, pigs total, poultry total, horses total, sheep and goats, arable land total, cereals total, wheat, barley, potatoes, hops, vegetables, grassland, vineyards, fruit and orchard plantations) standard errors and coefficients of variance were calculated. Estimation process was done by SAS, SURVEYMEANS procedure.

The response rate is the share of response among all eligible family farms. Ineligible family farms are those which no longer existed during interviewing. The eligibility rate is the share of eligible family farms among all family farms chosen for the sample. Response rates and eligibility rates are shown in Table 5 in the chapter 3.4.5.

3.5.3 Non-sampling errors ⁽³⁾

Coverage errors

Undercoverage

The probability of undercoverage in the FSS is very low since there are not many new agricultural holdings. The main trend is the termination of farming, which is also visible from Table 5. All important new farms are included in administrative registers and were consequently included into the list.

⁽³⁾ *Non-sampling error* is the error attributable to all sources other than sampling error. Non-sampling errors arise during the planning, conducting, data processing and final estimation stages of all types of surveys.

Overcoverage

Almost 10 % of family farms drawn in the sample were not eligible. With the aid of questions from Chapter A in the questionnaire we also record the reason for the non-eligibility. This helps us by updating the Statistical Register of Agricultural Holdings (exclusion of ineligible family farms from the frame). We estimate that degree of overcoverage will increase by the next Agricultural Census 2010 when the entire frame will be updated again. The problem of overcoverage occurs particularly for small agricultural holdings not being in IACS, since the probability for selection into sample is low.

Misclassification

Since post-stratification is not done in Slovenia, misclassification was not assessed. However, results of the FSS prove that there were no problems with misclassification.

Contact errors

All the family farms that were not contacted during the fieldwork were later called by phone from the SORS. We were not able to contact some of the family farms by phone either.

There were altogether 527 (3% of the total sample) family farms that were not contacted due to the following reasons:

- In 412 cases there was nobody at the address given. Each interviewer had to visit a family farm from the list at least 5 times and leave the leaflet about the visit. These family farms were treated as “they would not respond”.
- In 72 cases the interviewer was able to find the address, but the person (holder of the family farm) was not known at the address. These family farms were treated as ineligible.
- 43 family farms were not contacted because the address of the holding was incomplete and the telephone number of these family farms did not exist. These family farms were also treated as ineligible.

Multiple listing errors

Altogether 47 family farms were listed twice. They were treated as ineligible.

Measurement errors

Statistics were not corrected due to measurement errors. We are aware of them and we try to avoid this kind of errors by training for interviewers and supervisors, data checking and validation process. During the data entry with Blaise software, data checking is taking place too in order to avoid new errors. After data entry, extreme values of variables are checked and corrected if necessary.

Processing errors

Due to use of administrative data we can not speak about processing errors for bovine animals and areas. We can only speak about processing errors by labour force. As a key variable we consider data on holder: gender, birth of year and working time.

Table 9: Share of characteristics corrected by editing procedures

	Share of data items corrected
Gender of the holder (part of L)	0,0%
Birth year of the holder (part of L)	0,0%
Working time spent for agriculture of the holder (input variable for calculation of AWU)	22,8%

Non-response errors

Dealing with unit non-response is described in Chapter 3.4.5. Item non-response was dealt with imputations (see Chapter 3.5.1)

Methods to estimate non-sampling errors

In the field of agriculture we try to minimise non-sampling errors at data checking and control of the process.

Effects to the variance and bias due to non-sampling errors

Because of quite a lot of data checking we do not expect noticeable effects due to non-sampling errors to the variance and bias.

3.5.4 Evaluation of results

Since the administrative data were used for statistical purposes there were no other data sources to evaluate results of FSS 2007. We compared aggregated results with results of previous survey. The comparison of aggregated values showed no significant differences.

Data on labour force were compared with results of Labour Force Surveys. Since the methodology and definitions differ between the FSS and Labour Force Surveys, we put the attention to the trend in the number of farmers.

4. PUBLICATION AND DISSEMINATION

Preliminary results were published in paper version on 30 October 2007.

Final results were published on 30 June 2008. Results comprise all final data including typology. This issue is also available on the web site of SORS (www.stat.si). At the same time data will be loaded to the SI-STAT database.

Micro data are available to the registered researchers under the same conditions as those from the Agricultural Census. Data disclosure is applied.

REFERENCES

- National Methodological Report on the Agricultural Census 2000,

- Methodological Material for Interviewers and Supervisors, Farm Structure Survey 2007
- Results of Surveys, Agricultural Census, Slovenia, 2000
- Rapid Reports, Preliminary Results of the FSS 2007
- Rapid Reports, Results of the FSS 2005

ANNEXES

- Annex 1: Questionnaire for FSS 2007