

**SURVEY ON THE STRUCTURE OF
AGRICULTURAL HOLDINGS 2007**

NATIONAL METHODOLOGICAL REPORT

MEMBER STATE: GRAND DUCHY OF LUXEMBOURG

RAW MACHINE TRANSLATION

SURVEY ON THE STRUCTURE OF AGRICULTURAL HOLDINGS 2007

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SUMMARY

On 15 May 2007, STATEC conducted an exhaustive agricultural census in the Grand Duchy of Luxembourg. The number of holdings surveyed was 2303. This census served as the basis for the 2007 EUROSTAT survey on the structure of agricultural holdings.

The census was carried out via municipalities for the data about machinery, labour force and other gainful activities, which at the end of April received the blank questionnaires and other documents relating to the census. The municipal authorities were responsible for operations in the field. They appointed and instructed the interviewers who, in May 2007, conducted individual interviews with farmers to obtain the data required by the questionnaire. The interviewers and municipal authorities each checked the completed questionnaires for any errors and omissions. The data for surfaces and animals were administrative data delivered by the Service d'Economie Rurale (SER), an administration of the Ministry of Agriculture.

The municipalities sent the questionnaires and other documents by mid-July 2007 to STATEC where the questionnaires were keyed in and checked using BLAISE software. Administrative sources were used also to check the accuracy of the data on biological farming supplied by the questionnaire. The data of the SER were checked there and merged with the data of the census by the STATEC.

Processing of the data at STATEC was completed at the end of June 2008 with the drawing up of national tabular results. A table of correspondences between the national codes and Community codes was drawn up in May 2008 and the file with the individual data for EUROSTAT was ready in May. STATEC then relayed the data to EUROSTAT using the STADIUM system.

The role of the municipalities was critical. Exhaustive agricultural censuses are conducted yearly in Luxembourg and both the municipal authorities and the census takers are experienced and thoroughly familiar with the region and the farmers, so that all the holdings are recorded in the census and complete and reliable replies are obtained more easily. The non-response rate was thus only 0.5%.

Definitive national results were available in June 2008 and will be published in a STATEC Bulletin in July 2008. The publication will be communicated to the media at the same time. The key results will be accessible via the internet and available on CD-ROM.

The quality of the results obtained by the census is good. The response rate was very high, so that the use of estimates or derived figures remained minimal. Moreover, processing the data could not give rise to any major errors, seeing that a capture and control program of the BLAISE type was used.

1. INTRODUCTION

1.1 Historical background and scope

Surveys on the structure of agricultural holdings have been carried out within the Community framework by the Member States since 1966/67. Since 1970/71, basic surveys have been carried out every 10 years in accordance with the recommendation of the FAO relating to a world agricultural census. The 1999/2000 basic survey is the latest of these surveys.

In the Grand Duchy of Luxembourg, surveys on the structure of agricultural holdings have been carried out every year since 1953 by means of the annual census of agriculture of 15 May. This census is the culmination of the development described below.

The collection of data on livestock goes back to a government decision of 19 May 1852 establishing an annual general livestock census every July. A Grand-Ducal decision of 23 October 1904 set the frequency of censuses at three-year intervals and moved the reference period to the first 10-day period in December. Since 1953 these data have also been collected in May within the framework of the annual census of agriculture.

The collection of data on the agricultural land areas goes back to 1906. However, this collection was based on estimates prior to the Second World War, except for the bread grains that already were the subject of censuses during the years 1922 to 1939. It is only as from 1943 that land areas were recorded by annual censuses. In its current form, the annual agricultural census goes back to 1953. Except for the vineyards (10 ares and more since 1977), the criteria that have been determining the obligation to make a declaration have not changed since then.

1.2 Legislation

Council Regulation (EC) No 2467/96 of 17 December 1996, amending Regulation (EEC) No 571/88 on the organisation of Community surveys on the structure of agricultural holdings constitutes the legal basis at Community level for the period from 1999 to 2007. It was published in the Official Journal of the EC No L 335 of 24 December 1996.

At the national level, surveys are based on the Act of 9 July 1962 on organisation of a Central Service for Statistics and Economic Studies (STATEC Organic Law). This Act provides for the establishment of the STATEC and permits it to organise statistical surveys. For the annual agricultural census of 15 May, this Act is implemented by the Grand-Ducal Regulation of 18 February 2003, which specifies the exhaustiveness, date and scope of the survey, the reference period, the frequency, the methods of organisation (the participants' respective responsibilities), the obligation for data supply and the confidentiality and all the characteristics which have to be covered by the survey.

- Scope and coverage

Article 2 of the Regulation establishes the scope of the survey. The survey units are:

- a) all the holdings of a utilised agricultural area of one hectare at least, including arable land, meadows and pastures, gardens, orchards, vineyards, nurseries and willow beds;

- b) all farmers of vegetable, fruit or floral crops, nurseries or willow beds farmed on a commercial basis, even if the utilised agricultural area is less than one hectare;
- c) all farmers of vineyards of a land area of 10 ares or more;
- d) all farmers of livestock or poultry enterprises operated commercially.

The census takes place at the holding's headquarters. All the land farmed must be mentioned, whether it is in the actual municipality in which the survey takes place, in other municipalities of the country, or abroad. The leased land areas do not have to be declared by the owner but by the tenant. The land areas covered with crops and other cultivated areas, the products of which are sold at a later date, have to be indicated by the person who enjoys the right of disposal on 15 May. Only the holdings subject to the survey under the terms of the provisions above have to declare their livestock.

Holdings with an utilised agricultural area of less than one hectare that:

- a) possess woods and coppices with a high proportion of oaks,
- b) rear saddle horses,
- c) fatten pigs for their own consumption,
- d) cultivate vegetables, strawberries, etc. for their own consumption,

are not subject to the survey.

The census is exhaustive. All the holdings covered by the survey appear in the national programme of tables. They constitute the scope of the survey that is therefore identical to the field of observation.

- Frequency of the censuses and reference dates

Article 1 of the Regulation specifies that the census will take place annually on 15 May.

- Responsibility for the organisation of the census

Tasks are distributed between STATEC and the municipal authorities. STATEC draws up and sends the questionnaires to the municipalities and after the operations in the field, takes care of capturing and processing the data, and prepares the tables and publishes the results. However, Articles 3, 4 and 5 of the Regulation indicate that the census will be conducted by municipalities and that practical organisation in the field is the responsibility of the municipal authorities, who will ensure that all the holdings are recorded and that the operations for sending the verified and completed questionnaires to STATEC are properly implemented. In 2007, the Service d'Economie Rurale provided STATEC with the administrative data for all areas and livestock.

- Administrative and financial provisions

Article 6 of the Regulation informs on the methods of payment of the allowances granted to the investigators and to the municipal officials responsible for control. These allowances are fixed by the Ministerial Regulation and are proportional to the number of duly completed questionnaires.

- Obligations of the respondents at the time of the census

Article 7 of the Regulation refers to the STATEC Organic Law of 1962, which establishes in Article 7 that responding to the surveys of STATEC is compulsory and that refusal to respond or providing inaccurate information makes one liable to a fine.

- Identification, protection and obligations of the investigators

Investigators are chosen by the municipal authorities. Respect for statistical confidentiality in the case of officials, census takers and all other persons involved in the work of the census is stipulated in Article 8 of the Regulation and in Article 7 of the STATEC Organic Law. Disciplinary or criminal penalties have been laid down.

- Changes planned in the legislation

The municipal authorities will be able in the future to carry out the census by post. The utilisation of administrative data will be inserted in the Grand-Ducal Regulation.

2. CONTENTS

2.1 Characteristics

The characteristics recorded and their definitions correspond generally to those of Regulation (EC) No 2000/115/EC of the Commission of 24 November 1999, as latest amended by Commission Regulation No 204/2006, both for the variables on agricultural areas and livestock and for the agricultural machines and installations and the labour force.

- EUROFARM variables not recorded

Some of the characteristics required for the Community survey were not recorded in Luxembourg, either because they were optional, or because they were non-existent or non-significant.

The agricultural products in question are destination of the holding's production (CC06 a and b), durum wheat (D02), rice (D07), dried pulses and protein crops harvested as dry grain (D09 f and g), tobacco (D23), hops (D24), cotton (D25), sunflower (D27), soya (D28), linseed (oil flax) (D29), flax (D31), other textile crops (D33), aromatic plants, medical and culinary plants (D34), fresh vegetables, melons and strawberries (open field) (D14a), rough grazings (F02), fruit and berry species of sub-tropical climate zones (G01b), nuts (G01c), citrus plantation (G02), olive plantations (G03), other wines (G/04b), table grape (G04c), raisins (G04d), permanent crops under glass (G07), mushrooms (I02), the irrigated land areas (I03), and number of working days worked by employees not employed directly by the holder (L10).

Agricultural holding fusions were not taken into account as such, since this phenomenon was marginal in 2007. The distinction therefore was only made between natural persons, the heading under which holding fusions were classified, and legal entities (state, municipalities, associations of municipalities, public utility institutions, non-trading and commercial companies, etc).

- Supplementary national variables

Luxembourg records a number of characteristics on a supplementary basis for national purposes. These are:

- a) different machines and agricultural installations like fertilizer, manure and slurry spreaders, silos for green fodder, mechanical milking equipment, manure disposal installations, refrigerators for milk, automatic dispensers of concentrate, stables and pigsties,
- b) Social Security data,
- c) investment data,
- d) data on succession.

- Characteristics defined differently: the annual work unit (AWU)

Any person is considered as employed full-time on holdings if they work on average 8 hours per day for at least for 275 days (2200 hours a year). Persons under 15 and over 80 are not regarded as forming part of the agricultural labour force.

- Changes of definitions since the previous survey

There were no changes affecting comparability with the previous surveys.

2.2 Questionnaire

- Type of questionnaire and description

All the characteristics on the agricultural machines and facilities, the agricultural labour force, etc, are recorded using a single questionnaire of 7 pages in paper format. This questionnaire is supplemented by checklists and summary municipal lists that enable the census takers and municipal authorities to establish totals by municipal section and by municipality. The SER uses a paper questionnaire that is directly returned by the farmers.

- Copies of the questionnaire (attached)

3. SURVEY METHODOLOGY

3.1 Organisation of the survey

The organisation and responsibilities of the survey have been distributed between STATEC on the one hand and the 116 municipal authorities of the Grand Duchy of Luxembourg on the other hand, and, since 2007, the SER.

- STATEC and the SER

They deal with the methodological, technical and organisational aspects of preparing the survey: drafting the questionnaires and the other survey documents, informing the municipalities and farmers, sending the questionnaires and other documents and instructions for the investigators to the municipalities, designing the control programmes, capturing and correcting the questionnaires, defining tables and drawing up computer programmes for the construction of these tables, publishing the results and creating the EUROFARM (STATEC) file.

3.1.1 SER : Utilisation de données administratives provenant du SIGC et de SANITEL dans le cadre de l'enquête sur la structure des exploitations agricoles 2007

Par lettre du 31 juillet 2006, le STATEC a adressé une demande à EUROSTAT en application de l'article 8 paragraphe 2 deuxième alinéa du règlement (CEE) 571/1988 du Conseil afin de pouvoir utiliser pour certaines caractéristiques de l'enquête 2007 les données du système intégré de gestion et de contrôle relatif à certains régimes d'aide communautaires (SIGC) ainsi que d'autres bases de données administratives en remplacement de l'enquête directe auprès des exploitations agricoles de ces caractéristiques.

Par sa Décision 2007/80 CE du 1^{er} février 2007, la Commission a autorisé certains Etats membres, dont le Luxembourg, à utiliser les informations de sources autres que des enquêtes statistiques pour l'enquête 2007 sur la structure des exploitations agricoles. Les données relatives au mode faire-valoir, à l'utilisation de la surface agricole et aux cheptels détenus sont issues de données administratives.

Les sources de données administratives utilisées pour les différentes caractéristiques sont reprises dans le tableau ci-dessous :

caractéristique	source de données
C.1-3 mode de faire-valoir	SIGC
D. terres arables	SIGC
E. jardins familiaux	SIGC
F. prairies permanentes et pâturages	SIGC
G. cultures permanentes	SIGC
H. autres superficies	SIGC
I. champignons, irrigation, superficies non exploitées pouvant bénéficier de subventions	SIGC
J..... cheptels autres que bovin	SIGC
J.2-8 cheptel bovin	SANITEL

Les autres caractéristiques (implantation géographique, personnalité juridique, mode et pratiques culturelles, main-d'œuvre agricole, développement rural) ont fait l'objet d'un recensement (enquête statistique) selon le schéma des enquêtes précédentes (voir sous 3.12 et suivants).

- **SIGC**

Champ d'observation du SIGC et du recensement agricole

Un recoupement en vue de l'élaboration d'un fichier des exploitations agricoles commun utilisable pour le SIGC d'une part et le recensement agricole d'autre part a eu lieu en 2005. Ce fichier commun est utilisé depuis lors pour le SIGC et le recensement agricole.

Les exploitations qui ne font pas partie du SIGC mais qui font partie du champ d'observation du recensement agricole reçoivent un questionnaire allégé qui comprend les caractéristiques

requis dans le cadre du règlement (CEE) 571/88 mais pas les informations requises (p.ex. au niveau des parcelles agricoles) dans le cadre des primes gérées dans le SIGC.

Liste des caractéristiques

Pour les caractéristiques se rapportant à l'utilisation de la surface agricole et aux cheptels détenus, la liste des caractéristiques établie dans le cadre de l'enquête sur la structure des exploitations agricoles a été reprise depuis 2005 dans le formulaire de demande d'aide du SIGC. Les caractéristiques en question sont donc conformes à l'annexe I du règlement (CEE) 571/88 et à la décision 2000/115/CE de la Commission concernant les définitions des caractéristiques, la liste des produits agricoles, les exceptions aux définitions ainsi que les régions et circonscriptions pour les enquêtes sur la structure des exploitations agricoles.

Un exemplaire du questionnaire du SIGC est joint en annexe.

- SANITEL

Le système d'identification et d'enregistrement des bovins SANITEL est utilisé depuis l'année 2007 pour l'élaboration des statistiques sur le cheptel bovin requises en vertu de la directive 93/24/CEE concernant les enquêtes statistiques à effectuer dans le domaine de la production de bovins. Une demande en ce sens, étayée par un dossier décrivant le processus d'élaboration de ces statistiques, avait été adressée à EUROSTAT le 31 juillet 2006 et avait reçu l'accord oral d'EUROSTAT. Une autorisation formelle selon la procédure prévue par la directive n'avait pas été faite vu que la directive sera remplacée sous peu par un nouveau règlement relatif aux statistiques sur le cheptel et la production de viande et que ce règlement prévoira seulement une information, mais pas une autorisation, d'EUROSTAT en cas d'utilisation de données administratives.

Le système d'identification et d'enregistrement des bovins SANITEL s'applique à tous les bovins détenus au Grand-duché de Luxembourg indépendamment du fait que l'exploitation détentrice fait partie du champ d'observation de l'enquête sur la structure des exploitations agricoles ou non.

Les données de SANITEL sont transférées dans le système informatique du SIGC (=MACAA) et sont mises à jour mensuellement. Le calcul de la répartition du cheptel bovin par catégorie pour chaque exploitation individuelle se fait dans MACAA. C'est également au niveau de ce système que le rattachement des données individuelles par exploitation sur le cheptel bovin aux autres données des exploitations individuelles se fait. Ce rattachement se fait par le numéro d'identification des troupeaux de SANITEL. Ne sont prises en compte pour la suite des opérations que les exploitations faisant partie du fichier des exploitations du SIGC.

Champ d'observation

Le champ d'observation étant plus vaste que celui requis dans le cadre de l'enquête sur la structure des exploitations agricoles, il est adapté à ce qui est requis au niveau du système informatique du SIGC.

Catégories de cheptel bovin

Les catégories de cheptel bovin obtenues à partir des données SANITEL sont conformes aux exigences de la directive 93/24/CEE. Les catégories de cheptel bovin requises dans le cadre de l'enquête sur la structure des exploitations agricoles sont obtenues par recoupement des catégories prévues dans la directive 93/24/CEE.

Transmission des données administratives vers l'organisme chargé de la réalisation de l'enquête sur la structure des exploitations agricoles (STATEC)

La transmission des données administratives (SIGC et SANITEL) du Service d'Economie Rurale, l'administration sous la tutelle du Ministère de l'Agriculture qui gère le SIGC, vers l'institut national de statistique STATEC en charge de l'enquête sur la structure des exploitations agricoles a eu lieu le 12 février 2008 pour les bovins et le 14 février 2008 pour les autres données (surfaces+ cheptels autres que bovins).

3.1.2 STATEC : Recensement agricole du 15 mai

Comme l'enquête sur la structure des exploitations agricoles est basée au Luxembourg sur un recensement agricole annuel effectué depuis 1953, il n'a pas été nécessaire de former une équipe de projet spécifique. Pour le STATEC l'enquête a été menée par les deux personnes qui s'occupent habituellement du recensement national, toutes les deux ayant une expérience professionnelle de plus de quinze ans à ce niveau. Une de ces personnes s'occupe du volet statistique et méthodologique du recensement, l'autre de son aspect informatique. Pour le SER il en est de même.

- les administrations communales

Les administrations communales organisent et contrôlent l'enquête sur le terrain. Elles désignent et instruisent les agents recenseurs, veillent à ce que chaque exploitation soit recensée, effectuent un premier contrôle des questionnaires quant aux erreurs de calcul et aux blancs, établissent des récapitulatifs avec des sous-totaux et totaux par section communale et pour la commune dans son ensemble et renvoient les questionnaires au STATEC.

En outre, ces administrations communales jouent un rôle très important dans l'enquête. Il n'existe en effet pas de registre unique et complet des exploitations agricoles au STATEC. En règle générale, les communes désignent chaque année les mêmes enquêteurs résidant sur le territoire où ils procèdent au recensement et connaissant donc le nombre et le siège des exploitations à interroger. Beaucoup de communes dressent également des listes mentionnant les adresses des exploitations interrogées l'année précédente et les mettent à jour au fur et à mesure des changements intervenus. Les 2303 exploitations recensées au 15 mai 2007 se répartissaient sur 116 communes, ce qui fait 20 exploitations par commune en moyenne. Les administrations communales et les enquêteurs connaissent donc parfaitement les exploitants agricoles de la commune, ce qui facilite l'obtention de questionnaires remplis correctement ou le remplissage de données manquantes, par exemple par des indications reprises du registre d'état civil. Les 116 secrétaires communaux et les quelque 650 agents recenseurs reçoivent une indemnité en fonction du nombre de questionnaires traités.

3.2 Work programme

The preparation of the 2007 survey on the structure of agricultural holdings started at the end of January 2007 with the compilation of the questionnaires and other necessary documents (section lists, municipal lists, opinions) and the forms being sent to the printers. As a number of new characteristics had been introduced, the questionnaire of the annual agricultural census of 15 May had to be adapted.

The printers supplied the questionnaires and other documents in early April 2007. The municipalities were then informed by a circular of 19 April 2007 of the survey that they had to organise in the field. The questionnaires and other documents were sent to the municipal authorities at the end of April 2007.

The field survey was conducted by the municipalities from 15 May to 15 July 2007. After the last questionnaires were received in mid-July, STATEC carried out summary checks.

The SER has worked out, printed and sent its questionnaires to the farmers a month sooner than STATEC. The last questionnaires reached them in May. It then carried out the coding of the data and in September provided a file with provisional results. In December 2007, STATEC received the file with the final data from the SER. These data were merged with those of STATEC in January 2008.

The individual questionnaires were keyed in and processed from 3 August 2007 to 20 January 2008. The work was concluded with the preparation of a file and national tables. The national results will be published by a STATEC Bulletin in July 2008.

Luxembourg coding differs from Community coding. The drawing up of the correspondence table made necessary by the new characteristics and the passage to SAS software began in April 2008. In May, STATEC drew up the file with the EUROFARM data. A first consignment of data in EUROSTAT by the STADIUM system took place at the end of May 2008.

3.3 Preparation of the operational phase of the survey

3.3.1 Population and frame

- Target population, definition of agricultural holding and description of survey thresholds

The target population is made up of all agricultural, viticultural and horticultural holdings as defined by the Grand-Ducal Regulation of 18 February 2003. It was presented in detail with the survey thresholds in point 1.2 above.

The definition of an agricultural holding corresponds in general to that set out by the Commission Decision No 2000/115/EC of 24 November 1999. The holding is a unit of production managed by a farmer who can be a natural or legal person. Legal persons are understood to be the State, municipalities, associations of municipalities, public establishments and public utility establishments, non-trading and commercial companies, agricultural associations and non-profit associations. Groups of natural persons who have created fusions of holdings were not taken into account as such, but classified under natural persons. Almost all Luxembourg holdings (98%) are family undertakings made up of one single production unit. There were no changes of definition affecting comparability with the previous surveys.

- Survey basis, sources, reference date and update of the survey basis, errors

The survey is carried out according to the lists of holdings held by the 116 municipal authorities of the Grand Duchy of Luxembourg. Lists are updated by the municipalities progressively with the changes, in order to be complete and reliable on 15 May, the date of the exhaustive annual survey. STATEC, moreover, checks that all holdings have been taken into account by comparing the questionnaires returned with those from the previous year and makes inquiries to the municipalities if any questions arise. Since 2007, STATEC has been providing the municipalities lists of holdings resulting from the data bank of the SER. 15 May is the reference date for all the data referring to agricultural areas, livestock, agricultural machines and installations and the family population. The reference period for the data on the volume of work provided is made up of the 12 months preceding 15 May. For administrative SER data on areas and livestock, the SER has a data bank.

Administrative sources are used to check certain data. Thus the register of the Administration of the technical services of agriculture on the holdings practising organic farming according to the Council Regulation (CE) No 2092/91 of 24 June 1991, amended by the Commission (CE) No 1488/97 Regulation of 29 July 1997, was used to check the farmers' responses. This register was ready on 31 December 2007.

The errors due to the survey basis were almost non-existent. In any case, since the census is an exhaustive one, there is no possibility of sampling or classification errors. As holdings were recorded by municipality, there could have been double or multiple counting following confusion between the municipality where the holding had its headquarters and the one where the major part of its agricultural area lay. The farmers in question of course refused to respond several times and in doubtful cases, municipalities obtained information from STATEC on the decision to be taken (fusions). In any event, the identification number of the Ministry of Agriculture ("Kannnummer") should be indicated on the questionnaire to avoid this kind of problem. The most frequent error was the taking into account by the municipalities of holdings not meeting the defined criteria. These questionnaires were eliminated at the time of the input operations to the STATEC.

3.3.2 Survey design

- Counting

The annual agricultural census of 15 May, which served as a basis for the Community survey on the structure of agricultural holdings, is exhaustive.

- Co-ordination with other surveys

The questionnaires of the SER (subsidies) and of STATEC were harmonised. There was no specific co-ordination with other surveys. The census of 15 May serves in any event as a survey on the cattle (May-June) and porcine populations.

3.3.3 Pilot survey

The agricultural census of 15 May, which serves as a basis for the Community survey on the structure of agricultural holdings, is annual and benefits from a long tradition (since 1953!). It therefore was not necessary to carry out a pilot survey.

3.3.4 Informing and training staff and respondents

- Training of investigators and municipal staff

The municipal authorities have pools of investigators to carry out the different missions for which they are responsible ("tax "census," labour force survey, population census, agricultural census of 15 May). These individuals are therefore well acquainted with questioning techniques and questionnaire checks. All the necessary instructions are, moreover, on the municipal lists, the section lists and the questionnaires. As the census is annual, secretaries and other municipal employees responsible for the operations in the field also know the procedure, and can inform their successors or train new census takers. In the event of problems, STATEC makes itself of course available to the municipal authorities, or even to the census takers to clear up possible problems. Special training does not take place however. At the time of major changes in the methodology of the survey or in the questionnaire, the municipalities are informed by circular letter.

- Informing the respondents

Farmers are informed of the census by notices posted up on the public roads by the municipal authorities. These notices contain the same information as those referred to in point 1.2 of this paper.

3.4 Sampling, collection and capture of data

3.4.1 Drawing of the sample

The annual agricultural census of 15 May serving as a basis to the 2007 survey on the structure of agricultural holdings is an exhaustive survey and does not therefore require the determination of a sample.

3.4.2 Collection of data

- Organisation of work in the field

The preparation and the management of the survey in the municipalities fall on the College of Mayor and Aldermen. To conduct the survey, the municipal authorities appoint investigators who have a good knowledge of the region, the farmers and the way in which the questionnaires have to be filled out. They receive blank questionnaires to which farmers have to respond, and a checklist sent out by STATEC at the end of April of the year of survey.

Questionnaires are distributed to the farmers at the beginning of May and are explained to the respondents in a personal interview. The filled out questionnaires are collected as from 20 May by the investigators in the field. All the data concerning the characteristics recorded are transcribed by the investigator on the checklist. The census taker then calculates the overall result of each characteristic in his/her survey district. The checklist and the individual questionnaires have to be returned to the municipal authorities for 25 May.

The municipal secretary gathers the results of the various survey districts into results by section and municipality and transcribes them on the municipal list. All the documents (filled out questionnaires, checklists, municipal lists) have to be returned by 5 June to STATEC. In the municipalities, all the operations are carried out manually. Some municipal authorities distribute the questionnaires by post, while others have entered the municipal lists on Excel files, which are printed out and sent to STATEC.

Once the documents are received, STATEC carries out the input of the individual questionnaires using BLAISE software. After the validation of the data and the drawing up of the national file, the national tables are drawn up using SPSS software.

3.4.3 Utilisation of administrative data sources

Administrative data was used to check the holding classification under the heading "organic farming". Since 2007, administrative data have been used to determine agricultural areas and livestock.

3.4.4 Control of data

- At municipality level

Census takers first check at the time of the collection of the questionnaires that they are filled out in a complete and correct way. The investigator can request additional explanations or information directly from the farmer. At the time of the transcription on the checklist, the data is checked a second time and, if necessary, the census taker again contacts the respondent to correct possible errors or omissions.

It is then the turn of the municipal secretary to check manually that questionnaires have been completely and correctly filled out. He/she also makes sure of the correct transcription of the data on the checklists. If necessary, the secretary completes the questionnaires using data at his/her disposal (Civil Register) or by a telephone discussion with the farmer in question.

- At STATEC level

After receiving the documents, STATEC carries out an initial manual verification of the checklists and the municipal lists to ascertain any miscalculations and omissions. At this point exhaustiveness is also checked in comparison with the municipal lists of the previous year.

SER administrative data are inserted in the BLAISE file. STATEC checks its own individual questionnaires and SER data at the time of this insertion and coding using the BLAISE software. This software makes it possible to detect at the time of the input the gaps, errors of plausibility, of consistency, of arithmetic, of relations between the various characteristics, of logic and the contradictory values or characteristics. The control programme avoids input errors at the same time. It comprises approximately 150 different tests for the needs of STATEC for the establishment of national results. Apart from control by input software, the high level and experienced personnel that carries out coding raises and corrects the rare errors that the software cannot find (routing control).

Lastly, after the drawing up of the national tables, these are compared both with the provisional results provided by the municipal lists and with the tables of the previous year to check the plausibility of the results.

3.4.5 Non-response

- Concept of non-response

Should the gaps in the questionnaires collected by the census takers be fairly numerous, whether inadvertently or by refusals to respond, incomplete questionnaires are rarely sent back to the municipalities, or even to STATEC, since the census takers and the municipal secretaries are required to fill in any gaps.

As for the farmers who send in their questionnaires after the deadline or who refuse simply to fill out the questionnaire, they are extremely few in number. Luxembourg legislation makes declaring obligatory; failure to comply may be penalised by a fine which in 2007 could be as much as €2500. STATEC receives from the municipal authorities the names and address of the farmers who have refused to respond; they number only approximately a dozen holdings, half of whose data it has been possible to estimate by reference to the year before, as against the 2303 holdings which have responded.

- Policy on handling non-response

When a farmer has filled out his/her questionnaire in an incomplete way or when he/she refused to fill it out, he/she is initially contacted a second or third time by the investigator. It is then the municipal authorities that get in touch with him/her to convince them to provide the missing data. Should it be absolutely necessary, STATEC contacts the farmer to obtain the questionnaire or the figures that have been omitted. Although the obligation to respond and the risks incurred in the event of non-response are indicated on the questionnaire, both the investigator and the municipal secretary or the person responsible for STATEC draw attention to this point if they did not succeed in persuading the respondent by explaining to him/her the reason of the survey.

3.5 Processing, estimation and analysis of data

3.5.1 Method of handling missing or inaccurate data

- Methods of correcting and completing data

Since both investigators and the municipal authorities carried out new discussions with the respondents in the event of errors or blanks, the amount of data to be corrected or complemented was already very small.

The processing of these data was carried out on the basis of data from the previous year, either from the holding in question (categories of agricultural area, type of tenure, categories of different livestock, labour force) or from the results of the whole country by assigning the respective percentages for the type of tenure and the categories of livestock. For the data on the labour force, assignment was based on the area of the holding.

It must however be noted that the amount of data obtained by estimation or assignment is very small and did not have any affect on the quality of the results obtained.

- Persons authorised to make corrections, validation of data

The corrections and the validation of the data were carried out by the person in STATEC responsible for the survey on the structure of agricultural holdings.

3.5.2 Estimation and sampling errors

The agricultural census of 15 May, which served as a basis for the Community survey on the structure of agricultural holdings, was exhaustive. There could not therefore be errors of estimate or sampling.

3.5.3 Non-sampling errors

- Errors in coverage

As recorded above, the number of holdings that refused to respond was minimal. For the remainder, the municipal secretaries and investigators have a thorough knowledge of the farmers of their region. There were therefore no coverage problems.

- Errors in measurement

The errors in measurement were negligible. Farmers give their data on areas and livestock to the SER for obtaining aid and subsidies and tend for this reason not to provide approximate or rounded figures to an unreasonable extent. Moreover, on-the-spot checks can take place. For agricultural areas, the data is even expressed in centiares. The data on the labour force was partly overestimated, with the farmers tending to indicate the volume of work provided for the periods of intensive work instead of annual averages and not making a clear distinction between agricultural and domestic work in the case of spouses. Similarly the number of farmers who thought they practised organic farming according to Community rules was markedly overestimated and has to be corrected by reference to the Register of Organic Farming Holdings of the Administration Office for Technical Services for Agriculture.

- Errors in processing

Since the data acquisition was carried out at STATEC using a BLAISE control programme, errors in processing should be minimal or even non-existent.

- Errors due to non-responses

The case of errors due to non-responses was examined in detail under point 3.4.5. As the non-response rate was only 0.5%, its impact on the quality of the results was virtually nil.

3.5.4 Evaluation of the results

The data of the annual agricultural census of 15 May, which serves as a basis for the Community survey on the structure of agricultural holdings, is reliable. On the one hand, the

fact that it is an annual census allows a comparison between successive years and STATEC has not recorded any break in series that would have been inexplicable in the 1990s. On the other hand, the number of checks and controls repeated at different levels of the census necessarily reduces the number of errors there might be. The use of BLAISE software in particular is likely to make the number of possible errors tend towards zero. The fear of having their responses compared with those provided for obtaining premiums, subsidies and other aids also puts pressure on farmers to respond correctly to STATEC questionnaires.

The comparisons of the data on the agricultural labour force with statistics on employment or the general population census are exposed to definition problems. These sources take into account forestry, which is excluded from the agricultural census. Moreover, they are stricter regarding the taking into account of the family labour force. In the census, many helpers are found who only work during harvests or for a few hours per day. The fact remains that the population census of 1991 recorded 5461 people employed in the agricultural sector, while the agricultural census of 15 May 1991 recorded 8374. If we refer to the volume of labour expressed in annual work units (AWUs), which was 5774 AWUs as at 15 May 1991, the divergence narrows considerably. In the case of employment figures for 1999, we find a similar divergence between 4700 people (employment) and 6402 people or 4449 AWUs (census). The difference between the definitions used and the fields of survey do not allow any conclusion on the reliability of the figures of the agricultural census. The divergences are due to the taking into account in the census of all work carried out. This is why the census figures, especially in the form of annual work units, appear to us to be adequate for a structure survey.

4. PULICATION AND DISSEMINATION OF RESULTS

After the input and the correction of the individual questionnaires, STATEC carried out the development of its national file and made its national tables with the final results of the census in June 2008 for the country by size class and by technical-economic orientation, and by municipality. These tables were not published, but were made available to the interested organisations (Chambre d'agriculture, agricultural trade unions) and national administrations (Ministry for Agriculture).

The part of the tables with the final results intended for the general public will be published in the form of a special booklet of 36 pages (STATEC Bulletin) including a part with the texts and graphs describing the development since the last census, retrospective general tables, tables by class of size of holdings and tables by technical-economic orientation of holdings. The publication of this bulletin in July 2008 will be communicated to the media (print media, radio and television channels) by STATNEWS with the most important figures. This Bulletin will be available on the internet.

It should be noted that the integral tables by size class, by technical-economic orientation and by regional subdivision (cantons and municipalities) are available on request.

Finally the most important results of the census will be included in the "Annuaire statistique du Luxembourg" of 2008 published at the end of 2007. This directory is also available on CD-ROM and its tables are accessible in downloadable format on the internet site (portal) of STATEC. This directory includes a methodological note.

The publications (Bulletin and Annuaire) on paper are payable, and free to download.
National legislation does not allow access to individual data.

REFERENCES

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ANNEXES

2007 STATEC and SER questionnaires

RAW MACHINE TRANSLATION