CENTRAL STATISTICAL OFFICE

Agriculture Division

Farm Structure Survey 2010

Survey on agricultural production methods 2010

National Methodological Report

According to Art. 12 of Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 published in the Official Journal of the European Union L 321, p.14 of 1 December 2008

Member State: **POLAND**

Warsaw, March 2012

Introduction

The 2010 agricultural census and the survey on agricultural production methods have been implemented with European Commission funds guaranteed by the Regulation of the European Parliament and of the Council (EC) No. 1166/2008 of 19 November 2008 on farm structure surveys and surveys on agricultural production methods, and repealing Council Regulation (EEC) No. 571/88 (Journal of Laws EU No. L 321 of 1 December 2008) and granted in the form of grants within the framework of the European Commission grant agreement No..40201.2010.001-2010.013.

The aforementioned regulation requires the transfer of unidentified data from the census and the survey on agricultural production methods, together with the relevant methodological reports on three dates:

- by 31 March 2012, "The National Methodological Report (farm structure survey)" and the approved microdata describing the farm structure survey, listed in Annex III, points I-VI of Regulation (EC) No. 1166/2008,
- by 30 June 2012, "The National Methodological Report (farm structure survey – rural development)" and approved microdata describing the features of the farm structure survey listed in Annex III, Section VII of Regulation (EC) No. 1166/2008,
- by 31 December 2012, "The National Methodological Report (survey on agricultural production methods)" and approved microdata describing the features of the survey on agricultural production, including:
    - Characteristic specified in Art. 11(4) and Annex V of Regulation (EC) No. 1166/2008,
    - characteristics of the farm structure survey specified in Annex III to Regulation (EC) No. 1166/2008.

In Poland, the agricultural census and the survey on agricultural production methods were carried out under the same organisational structure, at the same time and using one questionnaire. These collected data were exported to the Operational Microdata Base, where one record (the so-called golden record) was created for each holding, containing data from both surveys. The information concerning the use of support within rural development was derived from administrative sources and loaded into golden records in 2011.

Therefore, one microdata set (golden records) describing the characteristics listed in Annex III, sections I-VII and the characteristics specified in Art. 11 (4) and Annex V of Regulation (EC) No. 1166/2008, as well as, one National Methodological Report describing the organisation and methodology of the agricultural census (along with data on rural development) and the survey on agricultural production methods, were sent to Eurostat in March 2012.

FARM STRUCTURE SURVEY 2010
SURVEY ON AGRICULTURAL PRODUCTION METHODS 2010

NATIONAL METHODOLOGICAL REPORT

CONTENTS

SUMMARY

Presented report describes organisation and methodology of the complete farm structure survey, i.e. the agricultural census (AC) and sample survey on agricultural production methods (SAPM), which was conducted in Poland in 2010, according to the timetable and requirements of the European Union (EU). The scope of the survey took into account both the EU and domestic users' needs. The institution responsible for conducting the survey was the Central Statistical Office (CSO).

Historical background

The studies in Poland, which to some extent corresponded to the EU farm structure surveys (FSS), were the annual June agricultural censuses (covering the entire population of farms) conducted until 1988. Since 1989, they were replaced with the June sample surveys (except for the years of agricultural censuses, namely, 1996 and 2002). These surveys were a source of data on the number of farms, their size, types of agricultural land, sown area and livestock, which are key elements of farm structure. They satisfied mainly domestic needs, but their results were also supplied to international organisations.

In the preparation of the 1996 agricultural census, the recommendations of the FAO document "2000 World Census of Agriculture" and some requirements of Eurostat, were taken into account. Cooperation with the Institute of Agricultural and Food Economics – National Research Institute was started regarding the typology of holdings. Thus, it was possible to transfer to Eurostat a set of data on farm structure largely harmonised with the EU standards.

Conducting a sample survey on land use, livestock and farm characteristics in June 2000 was the next step. The survey covered approximately 3% of all holdings of natural persons and all farms of legal persons, including for the first time many of the characteristics required in EU farm structure surveys and having not been surveyed in Poland, previously.

In the agricultural census carried out in Poland in 2002, most of the surveyed characteristics and their definitions were already in line with the EU requirements for the farm structure survey 1999/2000. The range of survey subjects also complied with domestic users' requirements. This census was held jointly with the National Population and Housing Census with the same organisational assumptions and the census apparatus. The results of AC 2002 were analysed for particular levels of territorial division, and unidentified microdata from the census were transmitted to Eurostat, together with a methodological report from the survey.

Due to the fact that the census was postponed from 2000 until 2002, the CSO did not carry out the farm structure survey held by Member States and candidate countries in 2003. In case of Poland, the findings of the 2002 census were adopted for the FSS 2003.

In 2005 and 2007, as a Member State, Poland launched a farm structure survey in accordance with the requirements and calendar of the European Union. The list of characteristics included in the survey and their definitions were in full compliance with EU requirements and the scope of the survey also took into account national users' requirements.

Anonymous individual data from both surveys accompanied by methodological reports were transmitted to Eurostat.

The agricultural census and the survey on agricultural production methods 2010

The agricultural census and the survey on agricultural production methods were conducted jointly, i.e. within the same organisational structure, at the same time, and using a single electronic questionnaire and the same methods of data collection and processing.

The work related to the implementation of the AC and SAPM was carried out from the beginning of 2008 to March 2012 and covered following main stages: the preparatory work (including consultations with users, preparation of the Law, developing organisational and methodological assumptions), a pilot survey, work related to obtaining administrative sources, preparatory and analytical work, as well as, designing information tools to support the preparation and carrying out of the agricultural census, building a list of farms, preparing organisational and methodological instructions, recruitment and training of enumerators and statistical interviewers, promotion and popularization, pre-census round, performing field surveys, processing and analysing the results, as well as, their dissemination (including the transmission of data to Eurostat).

The agricultural census covered about 1.8 million of agricultural holdings. At all farms participating in the census, respondents were asked about the "other gainful activities carried out by the labour force" (OGA). The frame for the full survey was prepared on the basis of the list of holdings prepared for the census. When creating the list, an object-oriented approach was adopted for the first time, which meant that at the first stage the holdings (objects) were identified, their coordinates defined (they were located spatially) and their holders were identified on the basis of data from administrative sources.

For domestic purposes, the farms with the smallest area, as well as those of little economic importance (meeting very low national thresholds) were included in the sample survey carried out jointly with the census.

The survey on agricultural production methods was conducted on a sample of approximately 200 thousand farms in respect of the precision requirements set out in Regulation (EC) 1166/2008. The frame prepared for the agricultural census was used as the sampling frame.

The agricultural census and the survey on agricultural production methods were carried out from 1 September to 31 October 2010, with the use of the following methods of data collection: Computer Assisted Personal Interview (CAPI), Computer Assisted Telephone Interview (CATI), and Computer Assisted Internet Interview (CAII). Interviews were conducted by approx. 12 thousand enumerators and approx. 360 statistical interviewers.

For the first time in an agricultural census, paper forms were entirely abandoned in favour of electronic questionnaire. The used applications enabled the control completeness and correctness of the data already at the collection stage .

Participation in the survey was compulsory, which meant that holders were obliged to provide reliable and comprehensive answers on the questions included in the form.

In order to reduce the respondents' burden and after recognising the quality of the administrative data, it was decided that the information concerning the use of support within the Rural Development Programme and organic production would be collected directly from administrative sources (as provided in Article 4 of the Regulation (EC) No. 1166/2008).

The data on land use, sown area, livestock and the number of tractors, agricultural machines and equipment were collected as of 30 June 2010. Information on support for rural development, the average irrigated area and linear landscape elements were collected for the last three years. Other data related to the period of 12 months preceding the survey (1 July 2009 to 30 June 2010).

The data collected by the CAPI, CATI and CAII channels were gathered in the Operational Microdata Base (OMB) built for the 2010 agricultural census and processed there (control and correction of data, as well as completing the file obtained in the AC with the data obtained from administrative sources, imputed units and estimation for SAPM).

The data, depersonalised and validated in OMB, were exported to an Analytical Microdata Base (AMB) to conduct analyses, prepare the data set for transmission to Eurostat and develop multi-dimensional tables for internal and external users.

The results of the census were analysed for the country, region, voivodship, sub-region, powiat and gmina level and data of the survey on agricultural production methods were generalised for the country, region and voivodship levels. The results are available

in the form of paper publications and on the CSO website, as well as in the form of individual orders via the External User Application.

For the needs of the Eurofarm database (in a format compatible with the "Manual for data suppliers, survey 2010, rev. 7"), 1 506 620 records from the agricultural census (including OGA), together with 187 228 records from the survey on agricultural production methods were sent to Eurostat.

1. CONTACTS

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Contact organisation units	1. Central Census Bureau 2. Agriculture Division
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2. SURVEY METHODOLOGY

2.1 National legislation

The legal basis for the full-scale farm structure survey (agricultural census) and the survey on agricultural production methods in Poland in 2010, in addition to the legislation of the European Union, was national legislation, i.e.:

- the Law of 17 July 2009 on the National Agricultural Census in 2010 (Journal of Laws of 10 August 2009, No. 126, item 1040),
- the Law of 29 August 1997 on personal data protection (Journal of Laws 1997 No. 133, item 883, as amended: Journal of Laws 1998 No. 155, item 1014, Journal of Laws 1999 No. 110, item 1255, Journal of Laws 2000 No. 12, item 136, Journal of Laws 2000 No. 50, item 580, Journal of Laws 2000 No. 116, item 1216, Journal of Laws 2001 No. 42, item 474, Journal of Laws 2001 No. 49, item 509, Journal of Laws 2001 No. 100, item 1087, Journal of Laws 2002 No. 74, item 676, Journal of Laws 2002 No. 153, item 1271, Journal of Laws 2004 No. 25, item 219, Journal of Laws 2004 No. 33, item 285, Journal of Laws 2006 No. 104, item 708, Journal of Laws 2006 No. 104, item 711.),
- the Law of 29 June 1995 on official statistics (Journal of Laws of 1995, No. 88, item 439; of 1996, No. 156, item 775; of 1997, No. 88, item 554 and No. 121, item 769; of 1998, No. 99, item 632 and No. 106, item 668; of 2001, No. 100, item 1080; of 2003, No. 217, item 2125; of 2004, No. 273, item 2703; of 2005, No. 163, item 1362; of 2006, No. 170, item 1217; of 2007, No. 166, item 1172),
- the Regulation of the Minister of Internal Affairs and Administration of 29 April 2004 on 2004 on personal data processing documentation and technical and organisational conditions, with which the equipment and systems used for the processing of personal data should comply (Journal of Laws 2004 No. 100, item 1024),
- the Regulation of the Council of Ministers of 9 November 2009 on the detailed list of the data provided to update and supplement by the gmina offices in the list of farms (Journal Of Laws of 2009 No. 195, item 1506),
- the Regulation of the Council of Ministers of 24 November 2009 on the remuneration for the work related to the National Agricultural Census in 2010 (Journal Of Laws of 2009 No. 205, item 1582),
- the Regulation of the Council of Ministers of 6 April 2010 on detailed conditions and a way to promote broadcasts propagating the ideas of the National Agricultural Census in 2010 (Journal Of Laws of 2010 No. 68, item 437).

The Law on agricultural census regulates the scope, form and mode of carrying out the census and the survey on agricultural production methods.

Pursuant to the provisions of the Law, the agricultural census covered all farms with an area of 1 ha or more of agricultural land and farms smaller than 1 ha that meet certain natural thresholds (outlined in paragraph 2.5. of the Report). In case of the smallest farms which do not meet the thresholds specified above and farms not engaged in agricultural activities (and with agricultural land) there was performed, only for domestic reasons, a sample survey. The survey on the agricultural production methods was carried out as a sample survey, jointly with the census.

The Law specifies that the census work is managed by the President of the CSO as the General Census Commissioner.

National legislation also specifies the list of characteristics surveyed for domestic needs, the time limit of both surveys and the reference day/period, the method of financing, and the right to use certain administrative sources and also imposes on respondents a duty to take part in the AC and SAPM and give reliable answers.

The Law also regulates the issues associated with the identification of census enumerators (when performing census work the enumerator shall use an identifier containing his or her photograph, name and stamp of the regional statistical office, as well as personal stamp and signature of the Director of the regional statistical office that issued the identifier) and their legal protection as public servants.

The Law also established the method of financing the AC and SAPM, i.e. from the state budget, from the part concerning the CSO and from the European Union funds.

Pursuant to the provisions of the Law on official statistics all the individual and personal data collected and stored are covered by statistical confidentiality. The data obtained in the AC and SAPM can only be used for statistical studies, compilations and analyses and for creation by the public statistical services the frames for statistical surveys conducted by those services. Sharing or use of data collected for other purposes is prohibited under the sanction of criminal liability. According to the above-mentioned Laws, all persons performing work related to the AC and SAPM were obliged to comply with the statistical confidentiality and were allowed to perform the work after training and instruction about the nature of the statistical confidentiality, as well as, the written oath with the content specified in the Law on official statistics.

2.2 Characteristics and reference period

The list of characteristics accounted for in the census and in the survey on agricultural production methods, as well as their definitions were in accordance with the EU requirements, and the subject scope of the survey also accounted for the requirements of the statistics and the needs of the domestic users.

The characteristics not existing in Poland have been deleted from the list of the surveyed ones required by the Eurostat.

The list of non-existing characteristics (NE)

- ✓ organic farming – citrus fruit (A_3_2_3_9),
- ✓ organic farming – olives (A_3_2_3_10),
- ✓ durum wheat (B_1_1_2),
- ✓ rice (B_1_1_7),
- ✓ cotton (B_1_6_3),
- ✓ other textile crops (B_1_6_11),
- ✓ fruit species of subtropical climate zones (B_4_1_1_2),
- ✓ citrus plantations (B_4_2),
- ✓ olive plantations (B_4_3; B_4_3_1; B_4_3_2),
- ✓ vineyards – raisins (B_4_4_4),
- ✓ energy crops on set-aside areas (B_6_3_1),
- ✓ rural development support – Community standards (G_1_4),
- ✓ rural development support – payments under Water Framework Directive (G_1_7),
- ✓ rural development support – animal welfare payments (G_1_9),
- ✓ rural development support – encouragement of tourism activities (G_1_11),
- ✓ linear elements maintained – stone walls (M_3_1_C),
- ✓ linear elements established – stone walls (M_3_2_C),
- ✓ area irrigated in the previous 12 months – rice (M_8_1_2_3),
- ✓ area irrigated in the previous 12 months – citrus plantations (M_8_1_2_14),
- ✓ area irrigated in the previous 12 months – olive plantations (M_8_1_2_15).

The characteristics mentioned below regarded an insignificant number of farms and small areas (below 350 ha on the country level).

The list of characteristics with minor economic significance (NS)

- ✓ legal personality and management of the farm – group farms (A_2_1),
- ✓ soya (B_1_6_6),

- ✓ vineyards – total (B_4_4),
- ✓ vineyards – quality wine (B_4_4_1),
- ✓ vineyards – table wines (B_4_4_2),
- ✓ vineyards – other wines (B_4_4_3),
- ✓ permanent crops under glass (B_4_7),
- ✓ area irrigated in the previous 12 months – vineyards (M_8_1_2_16).

From among the NS characteristics, with the purpose of verifying if they remain non-significant, the following were surveyed: „soya", „vineyards – total", "area irrigated in the previous 12 months – vineyards" and „permanent crops under glass". In the data set sent to the Eurostat, the total vineyards area was entered in the position „other wines".

The list of NE and NS characteristics was reported to the Eurostat in December 2009.

Apart from the characteristics required by the Eurostat (and at the same time, meeting the national requirements), in AC and SAPM additionally information was collected only for the national needs. These needs were submitted primarily, by the Ministry of Agriculture and Rural Development (own analyses, shaping the agricultural policy), the Ministry of the Environment (agriculture's impact on the environment) and the Ministry of Economy (possibilities of the use of renewable energy sources), as well as, for the needs of statistics (ensuring the data time series, livestock production forecasts, crops and harvest estimates, estimates of the number of workforce engaged in agriculture).

<u>The list of characteristics gathered only for the national needs</u>

- ✓ the income structure of holder's household,
- ✓ the share of direct sales in the overall sales of an agricultural holding,
- ✓ the number of separate plots composing one farm and the distance from the holding's headquarter to the most outlying parcel being a part of agricultural land of the holding,
- ✓ the area of the main crops: in kitchen gardens, for energy production, fruit trees and bushes plantations, edible legumes and feed crops for seeds, field vegetables and vegetables under cover,
- ✓ winter and spring cereals, and mixed cereals,
- ✓ the number of head of heifers of beef breed and crossbreeds
- ✓ specific weight and use groups of pigs,
- ✓ the number of head of lambs and ewes used for dairy production,
- ✓ the number of head of horses aged 3 years and older,

- ✓ the number of head of laying hens producing eggs for consumption and hatching purposes,
- ✓ the number of head of female fur-bearing animals (other than rabbits),
- ✓ the number of tractors per the power of engine,
- ✓ the number of agricultural machines by engine power,
- ✓ the use of mineral and organic fertilisers,
- ✓ types of crop protection products used,
- ✓ current activities (as of the last week of June 2010) of the user and his/her family members (employed, active job search, readiness to be employed),
- ✓ the number of workdays provided in the form of neighbour-to-neighbour assistance.

Data related to the land use, sown area, livestock and the number of agricultural tractors, machines and appliances was collected as of 30 June 2010.

Information on the use of support from the Rural Development Programme, average irrigated area and landscape linear elements was collected for the past three years (2008 – 2010).

The remaining data regarded the past 12 months preceding the survey (1 July 2009 – 30 June 2010).

As compared to the previous farm structure survey (2007) the reference day was moved from 1 to 30 June.

The definitions of characteristics adopted for the needs of AC and SAPM were in compliance with the Handbook on implementing the FSS and SAPM definitions v.7.

An exception was made for the "volume of water used for irrigation per year (M_8_4)". Under this heading the amount of water was given, used for irrigation in the period of 12 months preceding the survey's reference day with the exception of the areas of kitchen gardens and crops under cover, regardless of the source of water used.

Questionnaire

In the census and in the survey on agricultural production methods, one electronic form was used adjusted for the specific methods of data collection. The questionnaire included the agricultural farm identification number, data relating to the holder and the address of the headquarter of the holding and of the holder. A further part of the form included questions grouped into nine major chapters:

1. Land use
2. Economic activity
3. Income structure
4. Sown and other area

5. Livestock
6. Tractors, machines and equipment
7. Use of fertilisers
8. Labour force
9. Agricultural production methods

The list of questions being on the electronic questionnaire was provided in the Annex to this Report.

2.3 Survey organisation

Organisational structure

The census organisation had a hierarchical structure reflecting the state's territorial division. The following levels can be distinguished in:

- central (country level),
- voivodship (NUTS 2),
- gmina (NUTS 5).

The census organisation on the voivodship and gmina levels was established only for the time of the preparation and execution of the census and the survey on agricultural production methods, and it was dissolved after the end of the census.

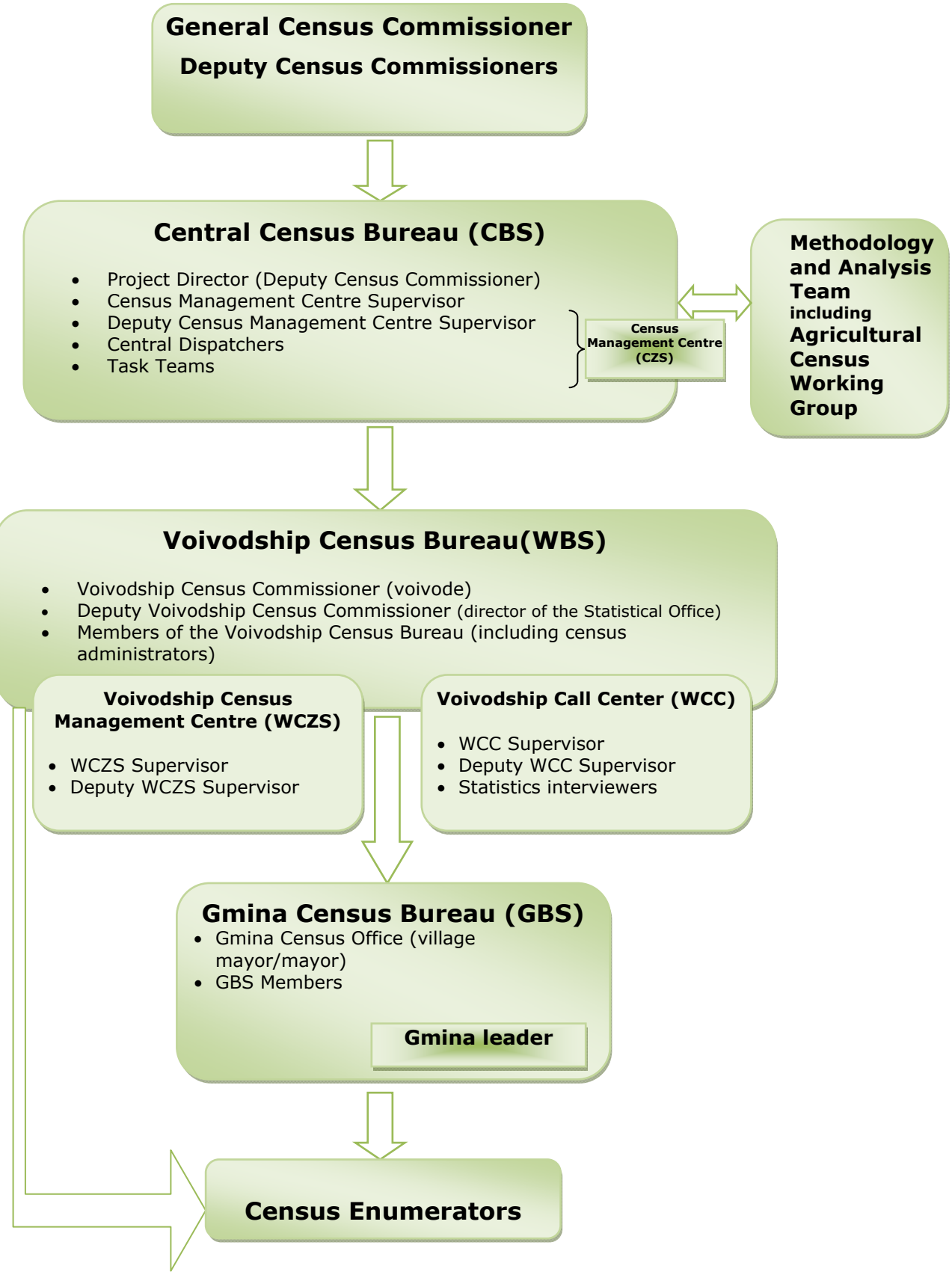
The census work was directed by the General Census Commissioner, i.e. the President of the Central Statistical Office. The posts of the Deputy Census Commissioner were held by:

- Director of the Central Census Bureau,
- persons appointed by the President of the Central Statistical Office

The Central Census Bureau (Polish acronym: CBS) was responsible for operational activities of the census and it was supported in content-related matters by the 2010 Agricultural Census Working Group (composed of specialists in the areas of: methodology, labour statistics and agricultural statistics).

The term operational activities is to be understood as the functioning of the Census Management Centre (Polish acronym: CZS), which was a unit of the Central Census Bureau. CBS was responsible for organisational matters and for contacts with census systems contractors or performers. At the same time, CZS was composed of central dispatchers responsible for the census monitoring at the central level.

Figure 1. AC and SAPM organisational structure scheme



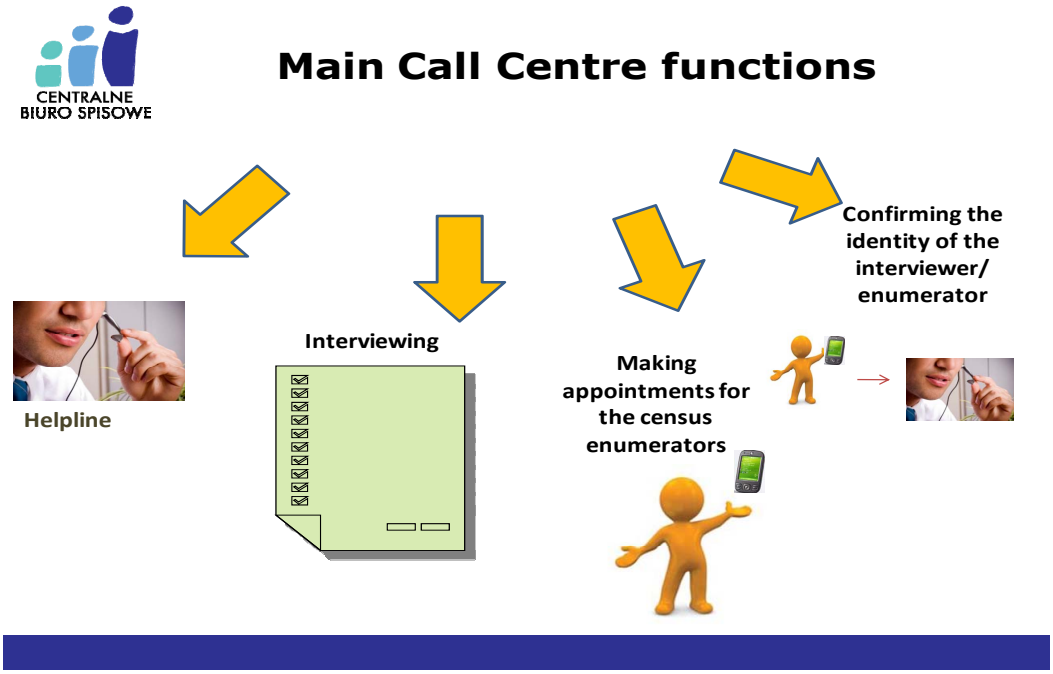
In voivodships, the census work was directed by the Voivodship Census Commissioner (voivode). The deputy Voivodship Census Commissioner was the director of the regional statistical office relevant for the area. The Deputy Voivodship Census Commissioner managed work of the Voivodship Census Bureau (Polish acronym: WBS) and supervised work of the Gmina Census Bureau (Polish acronym: GBS) from the given voivodship.

The Voivodship Census Bureau were divided into a section responsible for organisational and financial matters, as well as, for administrating the census systems (WBS members, including voivodship administrators), and an operational section responsible for carrying out of the census in a given voivodship: Voivodship Census Management Centres (Polish acronym: WCZS) and Voivodship Call Centres (Polish acronym: WCC).

The WCZSs were composed of voivodship dispatchers (all persons involved in the work of WCZS were employees of official statistics services). The number of dispatchers in the specific voivodships depended on the number of agricultural holdings, and consequently, on the number of the census enumerators appointed in the voivodship.

The WCCs were composed of the WCC managers (acting also as WCZS deputy supervisors) and statistical interviewers. The WCC number depended on the number of agricultural holdings in a given voivodship and on the possibilities for carrying out of the telephone interviews within the specified time limits.

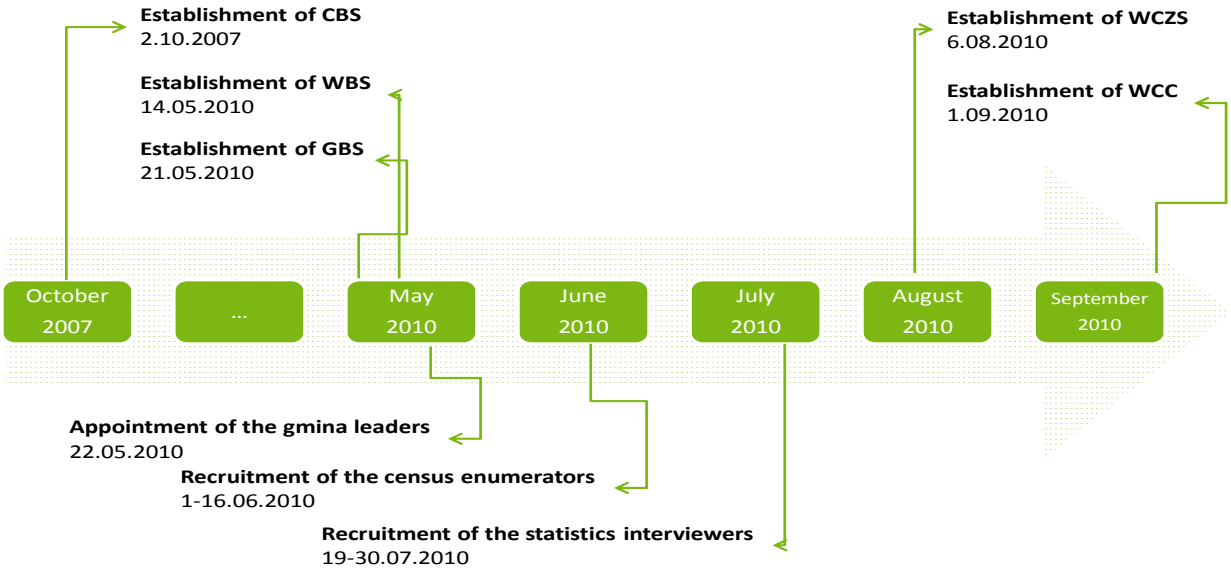
Figure 2. Call Centre – scheme



Within the Gmina Census Bureau a key role was played by the gmina leader and the gmina census commissioner who directed the census work in the gmina. The gmina leader was a coach supporting participants of the training sessions and – at the time of the census – he was the frontline support for the census enumerators for organisational, methodological and technical matters.

The census enumerators were appointed by the directors of the regional statistical offices at the request of the gmina census commissioner. For each gmina CBS specified the maximum number of the candidates for census enumerators (i.e. persons which were trained by the deadlines indicated in the calendar), and the number of census enumerators (persons appointed to execute census-related duties), and the gmina leaders recruited accordingly.

Figure 3. Key deadlines for the establishment of the census organisation



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The CBS, WBS and GBS members were appointed by the persons supervising work of the census bureaux on the particular organisational levels: gmina, voivodship and central. The total workforce of the census organisation (established for the needs of carrying out the census) exceeded 15 thousand, out of which the number of census enumerators was 12 thousand and statistical interviewers – approx. 360.

Pilot survey

The pilot survey was held between 14.09.2009 and 23.10.2009 with the aim of verifying the adopted methodology, and organisational and technical solutions designed for implementation during the agricultural census 2010.

For this venture rural gminas from various regions of Poland were selected, of varying areas and the diversified agricultural farms structure.

In fulfilment of the previously set objectives, the pilot census was held as of 30 June 2009.

The survey covered all agricultural holding located in the gminas selected for the pilot census, regardless of their size and the type of agricultural activities conducted there.

The pilot census was the general test for the assumptions and the solutions adopted by the CSO.

In fulfilment of to the objectives, in the course of the pilot census, in particular:

- ✓ the effectiveness of the applied methods of collecting data and the quality of the collected data were verified,
- ✓ information was obtained supporting analyses aimed at specifying the group of farms to be covered by the sample survey only for the national needs, as well as, aimed at specifying the size of the sample.

Moreover, the pilot census was aimed at testing the organisation established for the preparation and implementation of census. What was especially tested was the functioning of the Voivodship Census Bureaux, the Voivodship Census Management Centres, the Voivodship Call Centres and the Gmina Census Bureaux.

Also important was verification of the methodological assumptions for the agricultural census, prepared by the 2010 Agricultural Census Working Group. An equally important area of analyses was the functioning of the IT tools used in the pilot census, which – after certain calibration – were the basis for the IT support of the agricultural census and the survey on the agricultural production methods in 2010.

The above mentioned aspects of the pilot census were the key factors under the observation and analysis, and then they were translated into conclusions, which were included in the preparatory work of the 2010 agricultural census.

The most important recommendations regarded:

- deadlines for the training sessions,
- organisation of work, including the appointment of the gmina leader,

- IT support,
- preparation of the list of agricultural holdings and of the census frame,
- electronic questionnaires,
- the census popularisation,
- the applications' implementation (the JIRA Reporting System) allowing for real-time communication within the census organization apparatus.

All the improvements were implemented by CBS (as regards the census organisation), as well as by the census systems providers (with reference to the IT support).

The agricultural census popularisation

The publicity and popularisation and information activities started at the beginning of May 2010 and lasted until the end of the agricultural census, i.e. up to 31 October 2010. According to the Regulation of the Council of Ministers of 6 April 2010 on detailed conditions and a way of disseminating broadcast programmes promoting the ideas of the agricultural census in 2010, in the period between 1 May and 31 October 2010, the public media were obliged to broadcast informational-promotional programmes related to the agricultural census free of charge.

Special attention was paid on the popularisation of the Internet self-enumeration. In the scope of these activities taken together with the Polish public television channels, the Polish Radio and regional radio stations, advertising spots (10), discussion panels, fictional motifs in a popular TV series, and an instruction film on self-enumeration with participation of well known TV journalists, as well as short promotional-advertising films, speeches and interviews by and with specialists from the CSO in informational programmes were prepared and broadcasted.

The promotional activities were nationwide and they were conducted with the use of press and informational portals. In the most popular newspapers and professional journals, sponsored articles on the 2010 agricultural census appeared. Also, a covering letter from the General Census Commissioner – the President of the CSO, together with a census leaflet and information how to do the self-enumeration, and census gadgets were distributed to farmers. At press conferences in the CSO and in statistical offices in the voivodships, media representatives were currently briefed on the progress of the census preparations and implementation. Promotional activities were directed also to school children. Separately, the CSO participated in outdoor events, agricultural fairs, harvest festivals and fests where there were informational-promotional stands offering census leaflets, publications and gadgets prepared especially for this purpose.

The element of the promotional and advertising-informational strategy that was used on a constant basis was the CSO Information Portal, where – on the specially separated website www.spis.gov.pl, devoted to censuses, legal acts and information on the census were available, and accompanied by necessary information and guidelines regarding participation in the census, a guide how to use the electronic form. On the website, the official statements of the CSO management regarding the census were frequently updated. The site enabled contact with the press spokesman of the CSO with the Skype communicator, as well as, asking questions via the FAQ module. Information on the census was also presented on the sites of regional statistical offices in a unified graphical form as well as on the sites of self-government administration offices, with a link to the census site.

2.4 Calendar (overview of work progress)

Table 1. Calendar of the main work related to the preparation and implementation of the 2010 agricultural census and the survey on agricultural production methods

No.	Task	Opening date	Closing date
1	**Preparation work**	January 2008	September 2009
2	**Pilot survey**	14 September 2009	23 October 2009
3	**Preparation of the list of holdings and frames**	29 April 2010	30 August 2010
	preparation and updates of the list	29 April 2010	23 August 2010
	preparation of digital maps with coordinates of address points	31 May 2010	30 June 2010
	preparation of the frame for the survey on the agricultural production methods	4 August 2010	9 August 2010
	preparation of the sampling scheme and drawing the sample	3 August 2010	25 August 2010
	preparation of the frame for the needs of the census	4 August 2010	30 August 2010
4	**Work related to obtaining administration data**	16 November 2009	31 March 2011
5	**Preparation of the organisational and methodological instruction**	15 April 2010	12 August 2010
6	**Preparation of the electronic questionnaire**	15 March 2010	25 May 2010
	preparation of the assumptions for the electronic form	15 March 2010	14 May 2010
	implementation of the questionnaire (CAPI, CATI, CAII)	10 May 2010	25 May 2010

No.	Task	Opening date	Closing date
7	**Training**	17 May 2010	27 August 2010
	the CSO, WBS, WCZS, WCC, GBS employees, gmina leaders, coaches	17 May 2010	30 July 2010
	census enumerators	20 June 2010	31 July 2010
	statistical interviewers	2 August 2010	27 August 2010
8	**Promotion and popularisation**	1 May 2010	31 October 2010
9	**Pre-census round**	9 August 2010	23 August 2010
10	**Implementing the census and the survey on agricultural production methods**	1 September 2010	31 October 2010
	CAII	1 September 2010	17 October 2010
	CATI	8 September 2010	31 October 2010
	CAPI	8 September2010	31 October 2010
11	**Results processing and analysis**	2 November 2010	31 January 2012
12	**Results dissemination**	February 2011	December 2012
13	**Co-operation with Eurostat**	1 December 2011	31 March 2012
	preparation and transmission of the anonymous individual data	1 December 2011	14 March 2012
	data control and approval by Eurostat	15 March 2012	31 March 2012

2.5 Population and Frame

Population

The population of agricultural farms in Poland consisted of units following below mentioned national definitions:

An agricultural holding is understood as an agricultural area, including forest land, buildings or their parts, equipment and stock if they constitute or may constitute an organised economic unit as well as rights related to running the farm.

A natural person's agricultural holding is understood as an agricultural holding from 0,1 ha of agricultural land, owned or used by natural person as well as an agricultural holding of a person having no agricultural land or with agricultural land less than 0,1 ha who possesses at least: 1 head of cattle or (and) 5 head of pigs or 1 sow or (and) 3 head of sheep or goats or (and) 1 horse or (and) 30 head of poultry or (and) 1 ostrich or (and) 5 females of rabbits or (and) 5 heads other female fur animals or (and) 3 head of other animals kept for slaughter or (and) 1 beehive.

A legal person's agricultural holding means an agricultural holding run by a legal person or an organisational unit without legal personality whose basic activity is included according to the NACE in section A, division 01, group: 01.1. - growing of non-perennial crops, 01.2- growing of perennial crops, 01.3 - plant propagation, 01.4 - animal production, 01.5 - mixed farming, 01.6 - class 01.61 - support activities for crop production (maintaining good agricultural condition following environment protection standards), also regardless of the basic activity classified, when the agricultural land of the land used by the unit exceeds 1 ha or the unit runs livestock production.

The national definition is coherent and covers the EU definition, however, additionally states that agricultural holding may not conduct agricultural activity, if such holding consists of at least 0,1 ha of agricultural land and, for agricultural activity includes rearing of fur animals other than rabbits.

According to the domestic definition, the population of agricultural holdings contained about 2.6 million units, of which about 2.4 million units ran agricultural activity.

In respect of financial limitations, it was decided that a full-scale survey would not cover the whole population described above, but only those agricultural holdings, which fulfil the EU definition i.e. conduct agricultural activity (listed in Annex 1 of the Regulation 1166/2008) and pursuant to Article 3 of the Regulation 1166/2008 include at least 1 ha of agricultural land, or less than 1 ha if they comply with the defined physical thresholds but not higher than the ones provided in Annex II to the above mentioned Regulation.

All other units (with the smallest area and having less economic meaning, which at the same time contributed less than 2% to the total UAA and less than 2% to the total number of livestock units) were surveyed during the agriculture census with the sampling method only for national needs.

In respect of the above written information, the target population for both a full-scale farm structure survey and the sample survey on agricultural production methods constituted around 1.7 million units and included:

1. natural persons' holdings with agricultural land consisting of:
   a) at least 1 ha,
   b) less than 1 ha complying with the following physical thresholds:

      <u>crops</u>:
      - fruit trees plantations - 0.5 ha,
      - fruit shrubs plantations - 0.5 ha,
      - ornamental plants and orchard nurseries - 0.3 ha,
      - field vegetables and strawberries - 0.5 ha,
      - vegetables and strawberries under cover - 0.1 ha,

- flowers and ornamental plants under cover - 0.1 ha,
- hops - 0.5 ha,
- tobacco - 0.1 ha,

animals:

- total cattle - 10 head,
- cows - 5 head,
- total pigs - 50 head,
- sows - 10 head,
- total sheep - 20 head,
- total goats - 20 head,
- total poultry - 100 head,
- total horses - 5 head,

2. all legal persons' holdings.

The set of microdata for agricultural holdings meeting the above mentioned criteria was transmitted to Eurostat.

Comparing to the files transmitted earlier to Eurostat (AC 2002 as well as FSS 2005 and 2007), present file does not include data for the smallest farms, with the very low domestic physical thresholds (see the definition of natural person's holding on p. 20).

In the case of the next surveys concerning the structure of agricultural holdings, data of the same scope as for AC 2010 will be sent to Eurostat. The results of the census confirmed the small significance of agricultural farms under 1 ha of agricultural land, which do not meet the thresholds mentioned above adopted for the census. These farms were not included in the subsidy system, and mostly do not run agricultural activity, or the activity has the nature of a hobby or is aimed at the self-supply of the household. At the same time, the size of the group of these farms raise the cost of statistical surveys.

Having that in mind, since 2012 national thresholds for agricultural holdings included in statistical agricultural surveys were increased up to those adopted for AC 2010.

Frame

The frame for the agricultural census and the survey on agricultural production methods was based on the list of agricultural holdings. In the process of the list of farms creation for the needs of AC and SAPM 2010 the objective approach was used for the first time, which meant that on the first stage of work agricultural holdings were identified, its coordinates were defined (farms were located in space), and its holder was determined according to administrative data as described below.

The list creation started from identification of all land parcels used for agricultural purposes. The land parcels found in the set of the Agency for Restructuring and Modernisation of Agriculture (including the Records of holdings and Records of producers) were combined into holding and had their holders defined. For the rest of land parcels, the holders were defined from the Records of Land and Buildings, afterwards the data concerning users were updated by the set of Real Property Tax Record.

The list prepared in this way was complemented by organic farms on the basis of Agricultural and Food Quality Inspection and by holdings running special branches of agricultural activity based on the data of Ministry of Finance.

The list was updated with data of the Personal Identification Number (Polish acronym: PESEL) and the National Official Business Register (Polish acronym: REGON) in respect of personal data and addresses.

Afterwards, duplicated units were erased, together with those which did not fulfil yet the definition of the agricultural holding.

All address attributes in the list embracing the address of a holding's headquarter and the address of the holder were coded with dictionaries of the National Official Register of Territorial Division of the Country (Polish acronym: TERYT). To the data coded in the above mentioned way, coordinates of the location of the farm's and holder's seats were added from the database of statistical address points, which had previously been created by regional statistical offices.

Then, the list was verified by officials of the Gmina Office, which confirmed the existence of a holding. Additionally, the officials verified the correctness of the address attributes and the location of the headquarter of the holding and the seat of the holder on digital maps with dedicated tools (coordinates x, y). This work was coordinated by sixteen regional statistical offices.

Another update of the list took place during the pre-census round. Census enumerators were obliged to check, whether the address from the list entered as the address of the headquarter of a holding was the actual address of the land and buildings used for agricultural purposes. Census enumerators also confirmed the geo-location of holdings in a given area (a detailed description of the actualisation of the geo-location of holdings done by gmina offices and census enumerators is provided in point 2.8.2).

Additionally, the list was verified by the results of statistical surveys concerning animal and crop production.

Below a list of administrative sources used in order to build the list of holdings is provided:

- ✓ Land Parcel Identification System (LPIS)
  - Responsibility: Agency for the Restructuring and Modernisation of Agriculture (ARMA)

- Coverage: all recorded parcels submitted for subsidy
- Reference day: 31 December 2009

✓ Records of producers

- Responsibility: ARMA
- Coverage: agricultural producers enrolled for the register of producers
- Reference day: 31 December 2009

✓ Records of agricultural holdings

- Responsibility: ARMA
- Coverage: agricultural producers benefitting from direct payments in a given year
- Reference period: 2009 campaign

✓ Records of Land and Buildings

- Responsibility: Powiat starost offices
- Coverage: all land parcels in Poland (including agricultural land not enrolled for subsidies)
- Reference day: 31 December 2009

✓ Register of Organic Farms

- Responsibility: Agricultural and Food Quality Inspection
- Coverage: all organic producers
- Reference day: 31 December 2009

✓ Records of Real Property Tax

- Responsibility: Gmina offices
- Coverage: all payers of agricultural tax
- Reference day: 31 December 2009

✓ Special branches of agricultural activity

- Responsibility: Ministry of Finance
- Coverage: all payers of income tax coming from special branches of agricultural activity
- Reference day: 31 December 2009

✓ National Official Business Register (REGON)

- Responsibility: Central Statistical Office
- Coverage: all entities running economic activity and agricultural farms of natural persons who applied for REGON
- Reference day: 30 June 2010

✓ National Official Register of Territorial Division of the Country (TERYT)

- Responsibility: Central Statistical Office
- Coverage: regional division units (regions, voivodships, subregions, powiats, gminas, localities)

- Reference day: 30 June 2010

✓ Universal Electronic System for Registration of the Population (PESEL)

- Responsibility: Ministry of Interior
- Coverage: all persons residing within the territory of Poland
- Reference day: 31 December 2009

On the base of the list of holdings a census list frame was prepared including the following information:

- identification number of an agricultural holding,
- address of the holder,
- address of the seat of the holding,
- geographical coordinates of the address of a seat of the holder and of the seat of the holding,
- telephone number,
- e-mail address,
- information on the holder
  - first name and surname/name
  - PESEL number for a natural person
  - identification number REGON for a legal person and an organisational unit.

The same frame (in respect of subject) prepared for the census was used to draw the sample for the survey on agricultural production methods. The object scope was increased of information necessary for stratification (running of organic production, special branches of agricultural activity, area of agricultural land, stock of cattle, pigs, sheep, and goats).

2.6 Survey design

Farm structure survey was designed as a full-scale survey (agricultural census) together with other gainful activities carried out by the labour force.

The survey on agricultural production methods was designed as a sample survey on about 10% of farms included in the census. The sampling scheme took into account a complete survey of certain types of agricultural holdings.

2.7 Sampling, data collection and data entry

2.7.1 Drawing the sample – for SAPM

In order to draw the sample a scheme of optimal stratified random sampling was used. It was assumed that the size of a sample will equal 200 thousand agricultural farms. The size of the sample was decided in accordance with financial and organisational possibilities and the analysis of results precision concerning the results of farm structure survey in 2007 and the precision requirements provided in the Regulation (EC) 1166/2008.

In respect of the specificity and the scale of agricultural production it was decided that some categories of farms would be surveyed in 100%. These were the following farms:

1) organic farms,
2) units running special branches of agricultural activity,
3) agricultural holdings of natural persons with a very large scale of cattle breeding (over 2 thousand head) or pigs (over 20 thousand head),
4) agricultural farms with a meaningful scale of sheep and goats breeding (over 50 head).

A specific algorithm was used in order to allocate the sample among 16 voivodships and among the corresponding strata created in those voivodships. The algorithm optimised simultaneously the limits of strata and allocation of sample between these strata in respect of accepted criteria (the method is further described in: Lednicki, Wieczorkowski (2003)).

The value of relative standard errors for the following variables was used as the optimisation criteria:

- ✓ area of agricultural land,
- ✓ number of cattle,
- ✓ number of pigs.

The choice of the above variables resulted from the fact that they constituted a set of the most important agricultural characteristics for which information was available in the list frame. The control of expected estimation precision also meant expecting precise results for the other correlated characteristics which are found in precision requirements for the production method survey in Regulation (EC) 1166/2008.

The effect of using the optimal algorithm was:

- ✓ establishing strata boundaries in accordance with the above variables and at the same time gaining the possibility to ascribe a number of strata to each holding,
- ✓ establishing the number of farms drawn from each stratum,
- ✓ separating the take-all stratum, which was surveyed in 100%, and included the largest farms in respect of accepted criteria,
- ✓ minimising relative standard errors for sum of characteristics: area of agricultural land, number of cattle and number of pigs having in mind a fixed sample size.

The sample was drawn from a frame, in which every holding, besides the identifier and voivodship symbol, had ascribed the value of characteristic allowing to classify the farm to the sample without drawing as well as the value of stratifying features.

During the realisation of the optimal programme it was assumed that the value of relative statistical errors, for variables used as optimal criteria for all voivodships, should not exceed the level of 0.44% (the value resulting from a total set up sample size).

The sample was drawn with standard SAS system drawing procedures (procedure SURVEYSELECT). The method of a simple random sampling without replacement was used in every stratum independently.

The tables below contain data used for the evaluation of estimation quality, in accordance with the Regulation (EC) 1166/2008. In every NUTS 2 region the number of agricultural holdings exceeds 10 thousand.

Table 2. Precision requirements - crop characteristics

Precision requirements	Field codes	NUTS2 regions							
		PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
Number of holdings in the NUTS2 region		131826	230824	157484	62583	184501	140900	103576	84856
UAA, ha of the NUTS2 region	A_3_1	929797	1770710	531387	337930	1296827	543471	496973	986842
Area of cereals in ha in the NUTS2 region	B_1_1	561784	867098	195060	193582	763273	207471	238900	445285
% cereals in the UAA of the NUTS2 region		60.4	49.0	36.7	57.3	58.9	38.2	48.1	45.1

Table 2. Precision requirements - crop characteristics

Precision requirements	Field codes	NUTS2 regions							
		PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	45596	56548	29182	11784	58609	32180	24586	16453
% potatoes and sugar beet in the UAA of the NUTS2 region		4.9	3.2	5.5	3.5	4.5	5.9	4.9	1.7
Area of oilseed crops in ha in the NUTS2 region	B_1_6_4 + B_1_6_5 + B_1_6_6 + B_1_6_7 + B_1_6_8	23182	45462	5247	20463	50531	17146	7947	7645
% oilseed crops in the UAA of the NUTS2 region		2.5	2.6	1.0	6.1	3.9	3.2	1.6	0.8
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	37064	116035	14776	3019	65364	13535	35919	5228
% permanent outdoor crops in the UAA of the NUTS2 region		4,0	6.6	2.8	0.9	5.0	2.5	7.2	0.5
Area of fresh vegetables, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	19115	35568	17110	2714	15103	3211	15032	2787
% fresh vegetables, strawberries, flowers in the UAA of the NUTS2 region		2.1	2.0	3.2	0.8	1.2	0.6	3.0	0.3
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	166942	499164	220645	77645	224615	204204	117193	407216
% temporary grass and permanent grassland in the UAA of the NUTS2 region		18.0	28.2	41.5	23.0	17.3	37.6	23.6	41.3

Table 2. Precision requirements - crop characteristics /cont./

Precision requirements	Field codes	NUTS2 regions							
		PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
Number of holdings in the NUTS2 region		121670	30493	23341	62690	26586	66384	44939	40910
UAA, ha of the NUTS2 region	A_3_1	1626650	862773	392889	879952	495078	991917	993289	676658
Area of cereals in ha in the NUTS2 region	B_1_1	1004901	419566	201572	492892	318169	551563	432743	372219
% cereals in the UAA of the NUTS2 region		61.8	48.6	51.3	56.0	64.3	55.6	43.6	55.0
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	73480	25538	5334	38696	21869	51447	12010	25552
% potatoes and sugar beet in the UAA of the NUTS2 region		4.5	3.0	1.4	4.4	4.4	5.2	1.2	3.8
Area of oilseed crops in ha in the NUTS2 region	B_1_6_4 + B_1_6_5 + B_1_6_6 + B_1_6_7 + B_1_6_8	125450	121626	40036	133586	87685	116337	71240	66449
% oilseed crops in the UAA of the NUTS2 region		7.7	14.1	10.2	15.2	17.7	11.7	7.2	9.8
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	22646	27166	7950	9616	1646	10651	10694	6819
% permanent outdoor crops in the UAA of the NUTS2 region		1.4	3.1	2.0	1.1	0.3	1.1	1.1	1.0
Area of fresh vegetables, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	20953	3770	4007	7820	1439	22024	2834	6947
% fresh vegetables, strawberries, flowers in the UAA of the NUTS2 region		1.3	0.4	1.0	0.9	0.3	2.2	0.3	1.0
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	228289	161453	97763	139145	41539	146247	358643	141249

Precision requirements	Field codes	NUTS2 regions							
		PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
% temporary grass and permanent grassland in the UAA of the NUTS2 region		14.0	18.7	24.9	15.8	8.4	14.7	36.1	20.9

Table 3. Precision requirements - livestock characteristics

Precision requirements		Field codes	NUTS2 regions							
			PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
LSU in the NUTS2 region			792420	1428377	337181	271028	649473	245453	283049	901149
Bovine animals (all ages)	Number of bovine animals in the NUTS2 region, in LSU	C_2_1*0.4 + C_2_2*0.7 + C_2_3*0.7 + C_2_4 +C_2_5*0.8 + C_2_6 + C_2_99*0.8	344103	816996	155405	93715	289666	94343	134842	681209
	% of the LSU in the NUTS2 region		43.4	57.2	46.1	34.6	44.6	38.4	47.6	75.6
	% of national share of bovine animals in LSU		8.0	19.0	3.6	2.2	6.7	2.2	3.1	15.8
Sheep and goats (all ages)	Number of sheep and goats in the NUTS2 region, in LSU	C_3_1*0.1 + C_3_2*0.1	1959	1622	7786	1972	3032	3189	749	2355
	% of the LSU in the NUTS2 region		0.2	0.1	2.3	0.7	0.5	1.3	0.3	0.3
	% of national share of sheep and goats in LSU		5.4	4.5	21.6	5.5	8.4	8.9	2.1	6.5
Pigs	Number of pigs in the NUTS2 region, in LSU	C_4_1*0.027 + C_4_2*0.5 + C_4_99*0.3	311496	314639	85452	80340	230086	68993	88452	130703

Table 3. Precision requirements - livestock characteristics

Precision requirements		Field codes	NUTS2 regions							
			PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
	% of the LSU in the NUTS2 region		39.3	22.0	25.3	29.6	35.4	28.1	31.2	14.5
	% of national share of pigs in LSU		9.0	9.1	2.5	2.3	6.6	2.0	2.6	3.8
Poultry	Number of poultry in the NUTS2 region, in LSU	C_5_1* 0.007 + C_5_2* 0.014 + C_5_3* 0.03	122187	257874	70547	87051	103164	65271	49635	71172
	% of the LSU in the NUTS2 region		15.4	18.1	20.9	32.1	15.9	26.6	17.5	7.9
	% of national share of poultry in LSU		7.1	15.1	4.1	5.1	6.0	3.8	2.9	4.2

Table 3. Precision requirements - livestock characteristics /cont./

Precision requirements		Field codes	NUTS2 regions							
			PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
LSU in the NUTS2 region			2002898	249734	175958	238599	276947	816954	642980	405372
Bovine animals (all ages)	Number of bovine animals in the NUTS2 region, in LSU	C_2_1* 0.4 + C_2_2* 0.7 + C_2_3* 0.7 + C_2_4 +C_2_5 *0.8 + C_2_6 + C_2_99 *0.8	588281	74472	51102	80972	87361	329223	338391	138926
	% of the LSU in the NUTS2 region		29.4	29.8	29.0	33.9	31.5	40.3	52.6	34.3
	% of national share of bovine animals in LSU		13.7	1.7	1.2	1.9	2.0	7.7	7.9	3.2

Table 3. Precision requirements - livestock characteristics /cont./

Precision requirements		Field codes	NUTS2 regions							
			PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
Sheep and goats (all ages)	Number of sheep and goats in the NUTS2 region, in LSU	C_3_1* 0.1 + C_3_2* 0.1	4454	1040	623	2145	370	1583	1481	1616
	% of the LSU in the NUTS2 region		0.2	0.4	0.4	0.9	0.1	0.2	0.2	0.4
	% of national share of sheep and goats in LSU		12.4	2.9	1.7	6.0	1.0	4.4	4.1	4.5
Pigs	Number of pigs in the NUTS2 region, in LSU	C_4_1* 0.027 + C_4_2* 0.5 + C_4_99 *0.3	1062654	85681	45911	82129	141965	394592	152195	184848
	% of the LSU in the NUTS2 region		53.1	34.3	26.1	34.4	51.3	48.3	23.7	45.6
	% of national share of pigs in LSU		30.7	2.5	1.3	2.4	4.1	11.4	4.4	5.3
Poultry	Number of poultry in the NUTS2 region, in LSU	C_5_1* 0.007 + C_5_2* 0.014 + C_5_3* 0.03	328938	82430	73610	65013	43988	83524	137997	68407
	% of the LSU in the NUTS2 region		16.4	33.0	41.8	27.2	15.9	10.2	21.5	16.9
	% of national share of poultry in LSU		19.2	4.8	4.3	3.8	2.6	4.9	8.1	4.0

2.7.2 Data collection and data entry

The census and the survey on agricultural production methods were carried out according to the methods listed below:

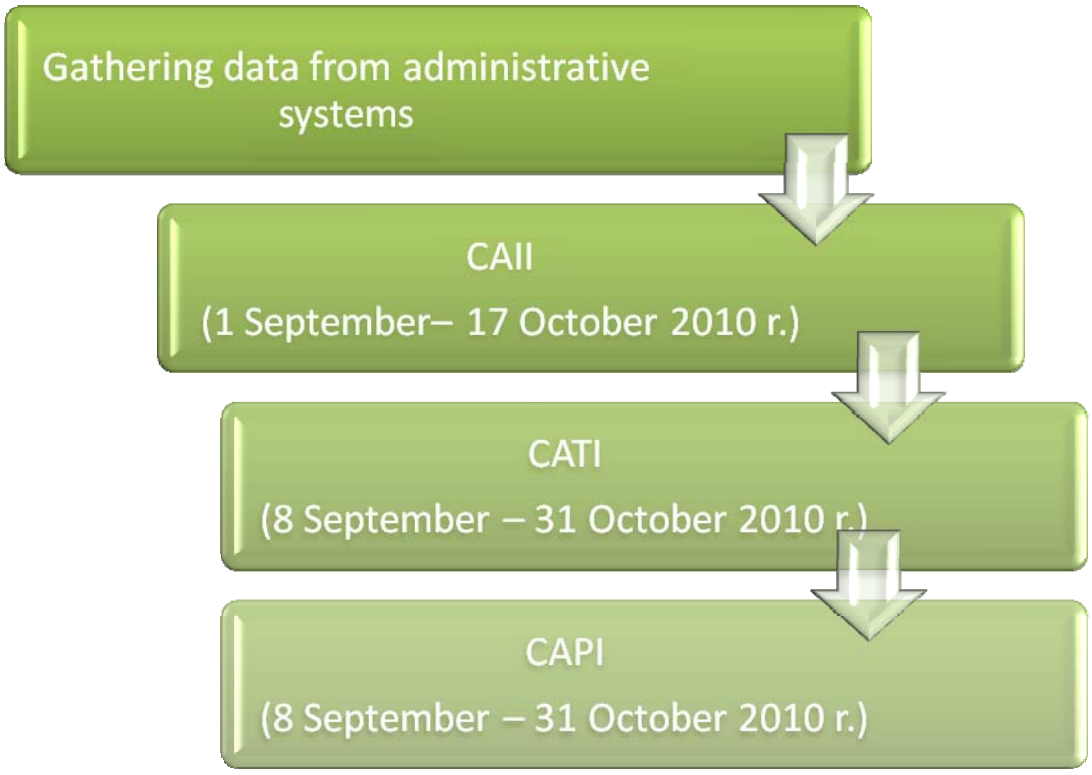
1) Computer Assisted Internet Interview (CAII),
2) Computer Assisted Telephone Interview (CATI), carried out by statistical interviewers,
3) Computer Assisted Personal Interview (CAPI) – carried out by census enumerators using mobile terminals with electronic questionnaire application.

Before the census having begun, the electronic questionnaire had been uploaded with available data from administrative sources (IACS- UAA, Register of Bovine Animals – the number of head of cattle), which were confirmed or verified by the respondents.

Holders of agricultural farms could make a self-enumeration, uploading data concerning their holdings onto online or offline questionnaires.

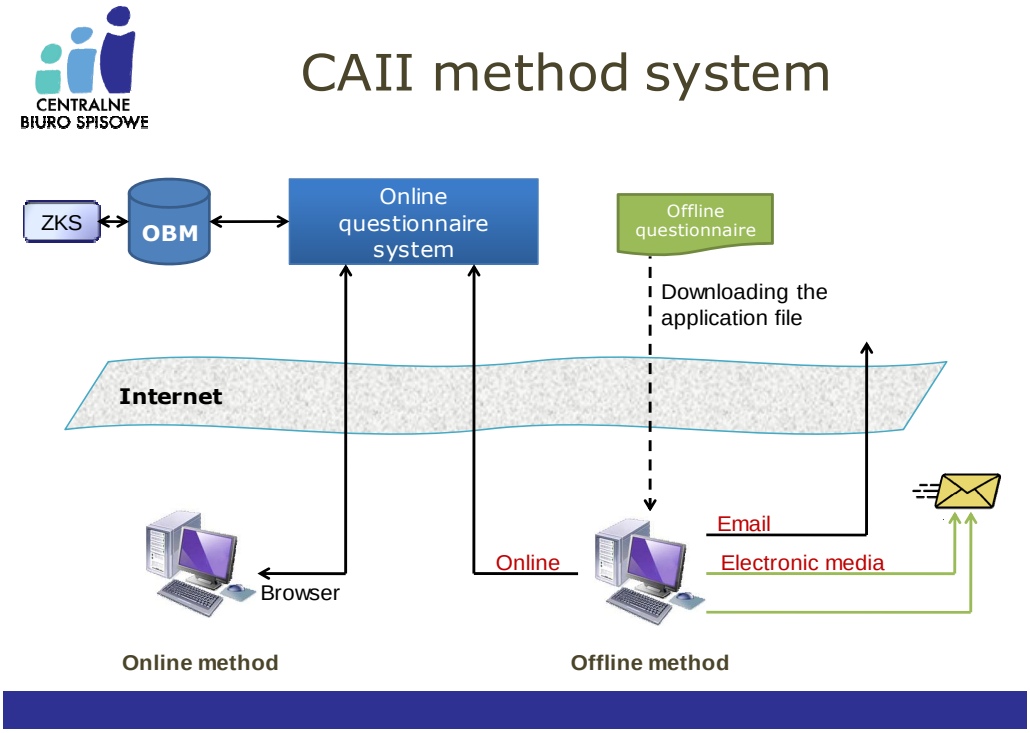
Access to the online questionnaire was granted through the authentication of the respondent and generated, an individual password. After completed the self-enumeration, the system informed about transmission of the data to the central server.

Diagram 4. Methods and terms of data collection



The majority of respondents were surveyed with the CAPI method (around 94%), almost 4% with the CATI method, and about 2% used self-enumeration through the Internet.

Diagram 5. The CAII method – scheme



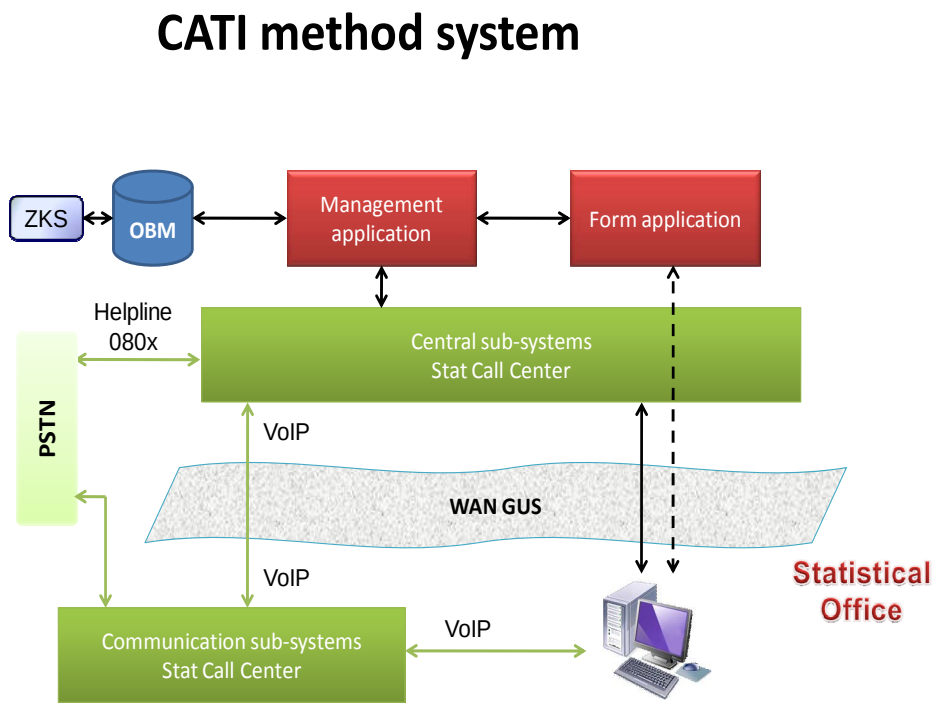
- *ZKS – managing the completeness of the census – functionality enabling monitoring of the AC and SAPM on all channels*
- *OBM – Operational Microdata Base – IT system facilitating supporting data collection and analysis*

The offline mode was prepared for respondents, who did not have Internet connection. During the census, the offline version of the questionnaire was also used for farms, which were not included in the list of agricultural holdings because they were new or below the threshold when the list was prepared but they have been surveyed. The offline questionnaire was available on the CSO webpage (version for Windows and Linux); additionally, it was prepared on CD's. After completing, the questionnaire was sent via secure electronic channels or using traditional mail (printed version or CD) to the indicated address GBD or WBS.

When the paper questionnaire was delivered to WBS, data was entered onto the census system by a interviewer in a Voivodship Call Center with IT tools.

The Voivodship Call Center carried out the survey using the CATI method.

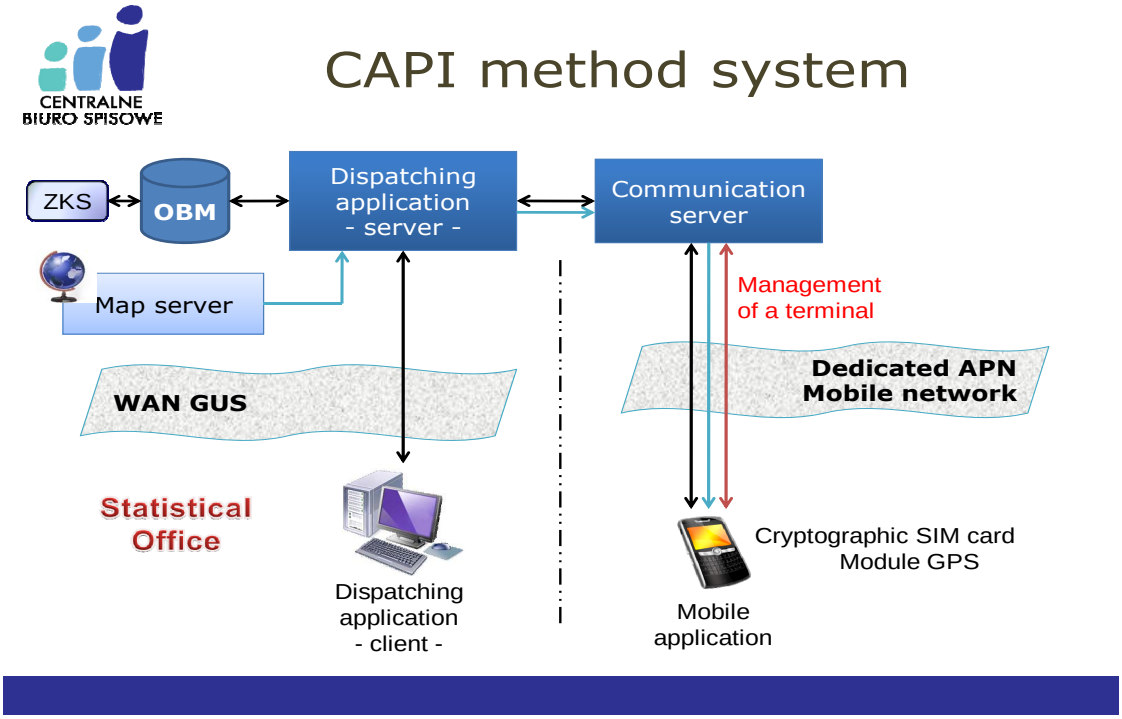
Diagram 6. The CATI method – scheme



- *ZKS – managing the completeness of the census – – a functionality enabling monitoring of the AC and SAPM on all channels*
- *OBM - Operational Microdata Base – an IT system facilitating supporting data collection and analysis*
- *PSTN - Public Switched Telephone Network – a public switched network, based on digital technology. The services of PSTN include both analog services (Plain Old Telephone Service), and digital ISDN (Integrated Services Digital Network, digital network with integrated services).*
- *VoIP- Voice over Internet Protocol – a digital technology enabling sending of sounds of speech with IT connection or dedicated network using IP protocol which allowed the ruling out of "constant connection" and for instance the exchange of information when the interlocutors stayed silent.*
- *WAN – computer network covering the area of more than one city*

In the case of the CAPI method, the survey was carried out by census enumerators using mobile terminals with electronic questionnaire application. In order to provide the highest level of data security, the questionnaire was kept on the terminals for no longer than 24 hours as coded data. After finishing the interview, synchronisation led to erasing of all data and transferring them to supervisory application (with the VPN channel). If the census enumerator did not carry out the interview or he/she cancelled it, data was also erased from the terminal during the first synchronisation.

Diagram 7. The CAPI method - scheme



- *Supervisory application (ADYS) - an application supporting work of voivodship supervisors and central supervisors. It allowed the constant management of the work of the census enumerators and monitoring of the AC and SAPM carried out by census enumerators*
- *Communicative Server (SKOM) – a server responsible for data exchange between ADYS and mobile application*
- *Mobile application (4mPower) – an application supporting the work of census enumerators during the pre-census round and the census itself*
- *Map server (ARCGis) – a server providing access to maps and geographical data. The basis thematic strata acquired from the map database were the territorial division of the country, the division into statistical regions and census districts, stratum of streets, and the location of parcels and buildings (the stratum of recorded parcels) ortophotomaps of the census areas.*

Completed questionnaires in the CAxI channels (CAPI, CATI, CAII), were sent to supervisory application, in which voivodship supervisors confirmed them. Next, the questionnaires were exported to the Operational Microdata Base.

In order to prepare census data, which could be analysed, verified and sent to the Analytical Microdata Base, a so-called 'golden record' for each holding was created in OMB. This record was created out of data coming from certain strata containing:

- data from the questionnaires completed during the census,
- data imputed for non-response units,
- data from administrative sources (support for rural development, organic farming).

In the structure of the golden record, there were fields for both identification and address features (without personal data) and agricultural characteristics. Additionally, in order to facilitate further analytical work a series of working fields was created (e.g. AWU, LSU).

After the work in OMB was completed, golden records for each farm were exported to AMB, at the same time erasing the fields with personal data. In that base at the stage of processing, in the ETL processes (Extract, Transform, Load) data were prepared to upload the fact tables on the basis of which multidimensional cubes were formulated and generated. This stage allowed also introduction of corrected weights to the golden record for the survey on agricultural production methods and to calculate the typology of agricultural farms. An important process at this stage was the calculation, validation, and preparation for sending of the records for the needs of EUROFARM database.

2.7.3 Use of administrative data sources

For the needs of AC and SAPM administrative sources were used for the following goals:

- ✓ building and updating the list of agricultural holdings,
- ✓ personalisation and uploading of electronic questionnaires before the census (data was verified by respondents during the survey),
- ✓ uploading the records after the census operation,
- ✓ analysis of results.

In case of topics concerning organic farming and support for rural development, data were not received from the respondents, but downloaded from administrative sources (using of administrative data in this scope is permitted by Article 4 of the Regulation (EC) 1166/2008). The data were downloaded from the administrative sources described below and after controlling and confirming their good quality, they were uploaded onto the OMB containing data collected from respondents during the census.

Organic farming

The source of data was the organic farm database run by Agricultural and Food Quality Inspection.

This base contains data of all agricultural holdings, which were registered in the system of organic farming. These units possess a certificate of organic farming or are under conversion to organic farming production methods.

The legal basis for this system is constituted by:

- ✓ Council Regulation (EC) No. 834/2007 of June 2007 on organic production and the labelling of organic products and repealing Regulation (EEC) No. 2029/91,
- ✓ Law of June 25, 2009 on organic farming (Journal of Laws No. 116, item 975).

The agricultural holding is identified in the register of organic farms by the number of the producer in the Agency for the Restructuring and Modernisation of Agriculture, which enables connection with the other registers and the census data.

The file provided by the Agricultural and Food Quality Inspection was controlled and found minor errors were sent to the Inspection for correction. Data from the corrected file were uploaded onto the OMB using algorithm for field mapping (different grouping of crops and animals in the organic farm register then required in FSS).

The file provided by the Agricultural and Food Quality Inspection for 2010 (updated as of 31 December 2010) contained data on approx. 20 thousand agricultural holdings with certificates and under conversion. In the census, over 17 thousand organic farms were surveyed.

The difference resulted mainly from:

- ✓ different reference periods for file used in the process of building the farm list for the census (31 December 2009) and records containing data used for the direct uploading of OMB (31 December 2010),
- ✓ different reference period for census (30 June 2010) and administrative source,
- ✓ the fact that due to differences in definition one farm could correspond with two or more organic producers included in the Inspection's database.

Below, the list of characteristics acquired from the Agricultural and Food Quality Inspection was presented:

- ✓ Farming system – Organic farming certified (A_3_2_1),
- ✓ Farming system - Conversion to organic farming (A_3_2_2),
- ✓ Farming system - Conversion to organic farming or certified (A_3_2_3),
- ✓ Organic farming - cereals (A_3_2_3_1),
- ✓ Organic farming – dried pulses (A_3_2_3_2),
- ✓ Organic farming – potatoes (A_3_2_3_3),
- ✓ Organic farming – sugar beet (A_3_2_3_4),
- ✓ Organic farming – oil crops (A_3_2_3_5),
- ✓ Organic farming – fresh vegetables, melons, strawberries (A_3_2_3_6),
- ✓ Organic farming - pasture and meadow, excl. rough grazing (A_3_2_3_7),
- ✓ Organic farming – fruit and berry (A_3_2_3_8),

- ✓ Organic farming – vineyards (A_3_2_3_11),
- ✓ Organic farming - other crops (A_3_2_3_99),
- ✓ Organic farming – bovine animals (A_3_2_4_1),
- ✓ Organic farming – pigs (A_3_2_4_2),
- ✓ Organic farming - sheep and goats (A_3_2_4_3),
- ✓ Organic farming – poultry (A_3_2_4_4),
- ✓ Organic farming – other animals (A_3_2_4_5).

Support for rural development

The source of data was the records from the information system of the Agency for Restructuring and Modernisation of Agriculture (ARMA) concerning agricultural producers benefitting from support in respect of the Rural Development Programme 2007-2013 and the proceeding activities (programme 2004-2006) within the last three years (since 01 January 2008 to 31 December 2010).

The legal basis of the system is constituted by:

- ✓ Regulation of the Council (EC) No. 1698/2005 of 20 September 2005 concerning supporting rural development by the European Agricultural Fund for Rural Development.
- ✓ Polish legal acts:
  - Law of 7 March 2007 on supporting rural development with the resources of the European Agricultural Fund for Rural Development,
  - Executive regulations for each of the actions of the Rural Development Programme 2007-2013 (Minister of Agriculture and Rural Development) - concerning detailed conditions and the method of granting financial support regarding the actions (...) embraced by the Rural Development Programme 2007-2013.

Records containing data about the beneficiaries of the Rural Development Programme were controlled and afterwards the information involving individual measures was ascribed to all farms from the ARMA found in the census base. The connection of administrative data and census data was performed through the number of the agricultural producer connected with the PESEL number of the holder.

The records of the ARMA indicated about 146 thousand farms benefitting from the support for rural development (as of 31 December 2010), while the census indicated about 132 thousand of them.

Differences in the number of farms benefitting from the support for rural development result from:

- ✓ different reference periods,
- ✓ the fact that administrative data entail a three-year period and not all agricultural holdings benefitting from support ran agricultural activity on 30 June 2010,
- ✓ differences in the definition between the holder and the beneficiary (among the members of the holder's household there could have been two or more beneficiaries).

The list below presents the characteristics which were acquired from the Agency for Restructuring and Modernisation of Agriculture:

- ✓ Rural development support: advisory services (G_1_1),
- ✓ Rural development support: modernisation (G_1_2),
- ✓ Rural development support: adding value to products (G_1_3),
- ✓ Rural development support: food quality scheme (G_1_5),
- ✓ Rural development support: Natura 2000 payments (G_1_6),
- ✓ Rural development support: agri-environment payments (G_1_8),
- ✓ Rural development support: agri-environment payments for organic farming (G_1_8_1),
- ✓ Rural development support: diversification into non-agricultural activities (G_1_10).

2.8 Specific topics

2.8.1 Common Land

In Poland this characteristic has minor meaning. Thus, the 2010 census as well as the previous farm structure surveys did not collect information about the area of common land.

The area of common land is included however in the total area of agricultural land. If holders of the surveyed agricultural holdings use the common land than this area is included in the leased land of these holdings.

2.8.2 - Geographical reference of the holding

In order to determine the location of address points of the seat of the agricultural holding, and the seat of the holder, spatial data was acquired from state agencies: orthophotomap for the entire area of Poland, the National Register of Borders and Areas of Territorial Division of the Country, cadastral data, Land Parcel Identification System, the National Register of Geographical Names, the Topographical Data Base. Furthermore,

various materials maintained and updated by Polish official statistics were used while establishing the database: statistical maps with boundaries of statistical regions and census areas, as well as situation sketches with household locations. Address point databases were created in line with descriptive address data from the National Official Register of Territorial Division of the Country (TERYT).

Based on the aforementioned sources, digital maps were developed, comprising the following elements:

- ✓ orthophotomap and administrative division (boundaries of voivodships, powiats and gminas) from the national mapping agency,
- ✓ statistical division (boundaries of statistical regions and census areas), established by the CSO,
- ✓ streets, established by the CSO,
- ✓ statistical address points, established by the CSO,
- ✓ cadastral parcels obtained from the Agency for Restructuring and Modernisation of Agriculture.

Each point in the statistical address points database was described with the following set of attributes: voivodship ID, powiat ID, gmina ID, locality ID, street ID, address number, statistical region ID and census area ID. The IDs of voivodships, powiats, gminas, streets, statistical regions and census areas are defined in TERYT.

Address points, which were prepared according to the above mentioned method, were further used to determine the geo-location of the agricultural holding identified in the list established for the purpose of the agricultural census.

The geographical location of a farm defined in the census list as the location of the seat of the farm and holder, was obtained by matching the corresponding address features from the census list with records from the statistical address points database. The spatial location was, then, assigned to each address of the headquarter of the farm and the holder, upon confirming the consistency of the following address IDs and features: voivodship ID, powiat ID, gmina ID, locality ID, street ID and address number.

For holdings, for which it was not possible to indicate the address features in the list prepared for the census, a georeference to the location (x, y coordinates of the parcel centroid) of the land parcel with buildings or the largest parcel being a part of the holding was taken.

Such a set of georeference data was used in the:

- ✓ gmina update process,
- ✓ pre-census round,
- ✓ census itself.

Updating the spatial location of farms as part of the gmina update process

The gmina update of the census list process, conducted by the gmina office staff, entailed:

- ✓ checking and correcting/supplementing the address data of the farm,
- ✓ verifying, whether the spatial location of address points included in the list of farms in the gmina, is correct; the verification involved addresses of the headquarter of agricultural holdings and holders.

For purposes of the gmina update process, CSO has set up an Internet map service with address point locations for the whole of Poland. The gmina authorities were obliged to verify/correct the location of the headquarters of holdings and holders on the gmina terrain. This could be realised by printing out a map fragment, containing an erroneous location and indicating correction on paper. Upon completion of the gmina update process, the map printouts were sent to regional statistical offices, which could introduce suitable changes in their spatial address base.

Updating the spatial location as part of the pre-census round

In the pre-census round, each enumerator was requested to verify the location of all address points of the headquarter of agricultural holdings and holders. Firstly, the enumerator's task was to verify the address of the holding, and then the address of the holder. If the latter turned out to be located outside his/her activity area, it was submitted for verification by the enumerator assigned to the respective census area.

Census enumerators were obliged to verify the following data, using mobile terminals containing a census application and a digital map:

- ✓ the address of the headquarter of the agricultural holding,
- ✓ the address of the seat of the holder,
- ✓ the spatial location of the address of the seat of the agricultural holding,
- ✓ the spatial location of the address of the seat of the holder,
- ✓ the contact address and phone number of the holder.

While verifying the spatial location of address points, the mobile application required that the enumerator's position (each time determined through GPS indications) be in the close vicinity of the point being verified (the location of the headquarter of the farm or holder).

Upon indicating the position of the holding or the seat of the holder on the map in the census application, the coordinates were automatically modified. Then the coordinates of the verified farm (the address of the headquarter of the farm or holder)

were submitted to the management application on the voivodship level for final acceptance.

Such prepared farm location data was used in the census itself. Using the orthophotomaps available on the mobile terminal, census enumerators could spot all the address points to be interviewed. As a result, they could easily locate the holding, and plan their subsequent visits in order to efficiently move from one place to another (interviewing the farms located close to each other, so that moving between them would take a relatively small amount of time).

Census controllers, who were in charge of monitoring and supervising the work of enumerators also had access to the digital map, through the management application that showed the location of the headquarters of the farms and holders. This functionality was indispensable for verifying the changes made by enumerators that could be either accepted or rejected by census controllers. Only acceptance of a given change by the census controller resulted with over-writing it in the census list.

Preparation of agricultural holding coordinates for Eurofarm

Since precise coordinates of each holding were used in the census, there was a need to process them in order to maintain statistical data confidentiality. In order to prepare the FSS coordinates according to Regulation EC No 1166/2008 we created a 5' geographical grid. For all farms we possess coordinates for both: headquarter of the agricultural holding and the seat of the holder. For Eurofarm purposes farm location coordinates were used in all cases (hence there was no need to validate the threshold of 5 km distance from the address of the farmer to the farm).

All holdings located in a single cell of the 5'x5' grid were given the coordinates of that cell's centroid. In cases where coordinates applied in the previous step were located in a NUTS3 region different than supplied in the descriptive data for the holding, the holding was given the coordinates of a nearest grid centroid located in a matching NUTS3 region. In cases where one grid cell contained a single holding, such holding has been attributed to the nearest grid cell with at least one more holding.

2.8.3 The volume of water used for irrigation

Data on the volume of water used was collected from respondents in the survey on agricultural production methods. The volume of water used for kitchen gardens and crops under cover was excluded.

2.8.4 Other issues

In the 2nd half of May and at the beginning of June of 2010, Poland experienced one of the largest floods in its history. This natural disaster affected all voivodships, though the southern regions were the ones that suffered most.

The losses in agricultural and horticultural production, as well as, extensive damages to permanent grassland were recorded in many agricultural farms. According to the CSO experts, the area of wholly or partly flooded agricultural land reached approximately 580 thousand ha. The highest losses occurred in podkarpackie, małopolskie, opolskie, świętokrzyskie and śląskie voivodships.

As a result of the 2010 flood, the area of agricultural land that was no longer intended for agricultural production increased. This phenomenon may be either permanent, in case the land has been permanently downgraded (e.g. due to landslides), or temporary, provided that its agricultural use will recommence upon reclamation or drainage.

Some of the farms that suffered from floods no longer conducted their agricultural activity in 2010 or were subject to liquidation. Many respondents were forced to abandon their places of residence, as a result of which they could not be contacted. In some gminas, enumerators also found it impossible to reach the severely flooded areas.

2.9 Response-burden policy

A number of measures were taken in order to reduce the non-response rate. A major issue was to disseminate census information among farmers, including its objectives and significance, as well as the obligatory nature. In accordance with the Law on Agricultural Census, respondents were obliged to provide reliable responses to all questions included in the questionnaire.

During the pre-census round, enumerators distributed to all respondents the Letter of the President of the CSO, requesting them to participate in the census and assuring that any data collected will be subject to strict statistical confidentiality.

An important role was played by the Call Centre, through which the respondents could obtain detailed information or clarify any doubts by phone. This application also allowed for setting a suitable date of the enumerator's visit in the farm.

A proper training of enumerators and interviewers, who were able not only to effectively motivate the users to participate in the survey, but also to deal with troublesome respondents, also led to a lower number of refusals. In the case of absence of an holder, the enumerator/interviewer could conduct an interview with any other adult member of the holder's household.

The work performed by census enumerators was monitored by central and voivodship controllers and by gmina leaders.

In case of partly fulfilled questionnaires during the self-enumeration, interviewer called to the respondent or enumerator visited him to complete the questionnaire.

The electronic questionnaire did not allow omitting certain questions, or leaving them unanswered. Due to this feature, item non-response for particular questions was marginal.

3. ACCURACY AND RELIABILITY OF THE DATA COLLECTED

3.1 Data processing, analysis and estimation

3.1.1 Estimation and sampling errors – for SAPM

The estimation method applied comprised the following elements:

- weights resulting from the sampling process,
- non-responses,
- holdings untypical for a certain strata (i.e. *outliers*).

Basic weights were corrected using the formulas presented below.

The principal parameter estimated in the survey was the sum of the value of variable *X*, e.g. the livestock or area of agricultural land.

This parameter for a given w-th voivodship (NUTS 2) took the following form:

(1) $\hat{X}_w = \sum_h \sum_i M1_{whi} * x_{whi}$, (i = 1, 2, ... , n_{wh}; *h* = 1, 2, ... , max*h*)

where:

x_{whi} – the value of variable *X* in i-th holding sampled from h-th stratum in w-th voivodship,

$M1_{whi}$ – the weight assigned to i-th holding sampled from h-th stratum in w-th voivodship,

n_{wh} – the number of holdings sampled from h-th stratum in w-th voivodship,

max*h* – the maximum number of strata in the sample for a given voivodship.

The estimation of the sum of variable *X* for Poland is the sum of values estimated for all voivodships, i.e.:

(2) $\hat{X} = \sum_w \hat{X}_w$,

Weights $M1_{whi}$ equal the reciprocal of the sampling fraction in h-th stratum in w-th voivodship, i.e.

(3) $$M1_{whi} = \frac{N_{wh}}{n_{wh}},$$

where:

N_{wh} – the number of farms in h-th stratum in w-th voivodship.

Considering the occurrence of non-response cases (refusal, lack of contact with the farm sampled, or liquidation of the holding), the initial weights resulting from the sampling process were corrected accordingly.

The weight for i-th holding in h-th stratum in w-th voivodship was adjusted using the correction factor r_{whi}, which was calculated in the following way:

(4) $$r_{whi} = \frac{\hat{n}_{1wh} + \hat{n}_{2wh}}{\hat{n}_{1wh}},$$

where:

$\hat{n}_{1wh}$ - the generalised number of the sample surveyed in h-th stratum in w-th voivodship,

$\hat{n}_{2wh}$ - the generalised number of holdings that refused to participate in the survey in h-th stratum in w-th voivodship.

The above values were estimated using a set of weights calculated in accordance with formula (3), following which the corrected weights $M2_{whi}$ were calculated according to:

(5) $$M2_{whi} = r_{whi} * M1_{whi},$$

The correction factor r_{whi} represented the estimation of the proportion of the number of units that should have been surveyed against the number of actually surveyed units in a given stratum. The former comprised all cases of refusals.

The weight calculated using formula (5) was corrected in the case that the farm sampled was considered an outlier. This concerned those farms for which relatively small values of the areas of agricultural land or livestock were recorded in the sampling frame, and which in fact turned out large in terms of these two variables. Maintaining weights (5) for such holdings would lead to a considerable overestimation of the area of agricultural land, or the number of pigs or bovine animals. As a result, weight $M3_{whi}$ was introduced, taking the following values:

(6) $M3_{whi} = 1$ for untypical holdings (outliers),

(7) $M3_{whi} = M2_{whi} \dfrac{\sum_i M2_{whi} - n^*_{1wh}}{\sum_{i:typowe} M2_{whi}}$, for other (typical) holdings.

where:

n^*_{1wh} - the number of outliers in h-th stratum in w-th voivodship.

Weights $M1_{whi}$, indicated in formula (1), were finally replaced with weights $M3_{whi}$.

The weights correction triggered the necessity to modify the standard variance estimation method. The values of relative standard errors, estimated for selected variables, were included in the tables presented below.

The precision of the sum of the value of variable *X* was estimated in the following way:

(8) $\hat{N}_{wh} = \sum_i M3_{whi}$, ($i = 1, 2, \ldots, n^1_{1wh}$)

(9) $s^2_{wh}(x) = \dfrac{1}{n^1_{1wh} - 1}\left[\sum_i x^2_{whi} - \dfrac{1}{n^1_{wh}}\left(\sum_i x_{whi}\right)^2\right]$

(10) $d^2(\hat{x}_w) = \sum_h \hat{N}^2_{wh}\left(\dfrac{1}{n^1_{1wh}} - \dfrac{1}{\hat{N}_{wh}}\right) s^2_{wh}(x)$

where:

n^1_{1wh} – the number of farms with weight $M3_{whi} > 1$,

$\hat{N}_{wh}$ - an estimated number of farms (excluding outliers) in h-th stratum in w-th voivodship.

(11) $cv(\hat{x}_w) = \dfrac{\sqrt{d^2(\hat{x}_w)}}{\hat{x}_w} 100$.

Value $cv(\hat{x}_w)$ represents the relative standard error of the estimated sum of the value of variable *X* in w-th voivodship, while for Poland the following formula is applicable:

(12) $cv(\hat{x}) = \dfrac{\sqrt{\sum_w d^2(\hat{x}_w)}}{\hat{x}} 100.$

The relative standard error for the basic crop and animal characteristics on the national level was as follows:

Table 4. The precision of crop and animal characteristics at the national level

Characteristics	Relative standard errors (%)
UAA in ha	0.1
Area of cereals in ha	0.2
Area of potatoes and sugar beet in ha	0.6
Area of oilseed crops in ha	0.5
Area of permanent outdoor crops in ha	1.8
Area of fresh vegetables, strawberries, flowers in ha	2.0
Area of temporary grass and permanent grassland in ha	0.3
Number of bovine animals in LSU	0.2
Number of sheep and goats in LSU	2.5
Number of pigs in LSU	0.4
Number of poultry in LSU	0.2

The tables presented below illustrate the relative standard error for the required characteristics of crop and animal production by voivodships (NUTS 2).

Table 5. Crop precision at the NUTS2 level

Relative standard errors (%)	NUTS2 regions							
	PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
UAA in the NUTS2 region, in ha	0,5	0,5	0,5	0,9	0,5	0,6	0,5	0,5
Area of cereals in the NUTS2 region, in ha	0,6	0,7	0,9	1,1	0,6	0,9	0,7	0,7
Area of potatoes and sugar beet in the NUTS2 region, in ha	2,5	2,5	1,5	3,9	1,9	1,8	2,0	4,2
Area of oilseed crops in the NUTS2 region, in ha	3,3	3,1	3,3	2,0	2,2	2,3	4,6	5,5
Area of permanent outdoor crops in the NUTS2 region, in ha	5,5	4,4	5,2	13,7	3,4	4,6	4,3	15,7
Area of fresh vegetables, strawberries, flowers in the NUTS2 region, in ha	5,4	5,9	5,3	16,6	5,2	6,3	4,2	12,5

Table 5. Crop precision at the NUTS2 level

Relative standard errors (%)	NUTS2 regions							
	PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
Area of temporary grass and permanent grassland in the NUTS2 region, in ha	1,3	1,0	1,0	2,4	1,1	1,1	1,3	0,7

Table 5. Crop precision at the NUTS2 level /cont./

Relative standard errors (%)	NUTS2 regions							
	PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
UAA in the NUTS2 region, in ha	0,4	0,8	1,2	0,7	0,7	0,4	0,5	0,6
Area of cereals in the NUTS2 region, in ha	0,5	1,0	1,5	0,8	0,8	0,5	0,7	0,8
Area of potatoes and sugar beet in the NUTS2 region, in ha	1,6	3,5	5,2	2,6	2,3	1,4	3,5	2,4
Area of oilseed crops in the NUTS2 region, in ha	1,1	1,4	3,8	1,4	1,2	1,0	1,1	1,2
Area of permanent outdoor crops in the NUTS2 region, in ha	6,8	5,2	8,2	10,9	19,4	7,8	7,4	9,5
Area of fresh vegetables, strawberries, flowers in the NUTS2 region, in ha	5,1	28,4	10,4	8,9	17,2	4,8	10,4	10,8
Area of temporary grass and permanent grassland in the NUTS2 region, in ha	1,0	1,8	2,1	2,1	2,3	1,1	0,9	1,6

The value of the relative standard error at the voivodship level exceeded 10% in the case of rare plants in Poland, with a small crop area, i.e. permanent outdoor crops (in 4 voivodships), as well as fresh vegetables, strawberries and flowers (in 7 voivodships).

Table 6. Livestock precision at the NUTS2 level

Relative standard errors (%)	NUTS2 regions							
	PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
Number of bovine animals in the NUTS2 region, in LSU	0,5	0,5	0,8	1,1	0,5	0,9	0,7	0,5

Table 6. Livestock precision at the NUTS2 level

Relative standard errors (%)	NUTS2 regions							
	PL11	PL12	PL21	PL22	PL31	PL32	PL33	PL34
Number of sheep and goats in the NUTS2 region, in LSU	8,8	25,2	5,4	15,0	8,9	6,9	10,0	6,2
Number of pigs in the NUTS2 region, in LSU	1,3	1,3	1,3	1,9	1,2	1,4	1,3	1,1
Number of poultry in the NUTS2 region, in LSU	0,8	0,7	0,9	1,3	1,5	1,3	1,5	0,3

Table 6. Livestock precision at the NUTS2 level /cont./

Relative standard errors (%)	NUTS2 regions							
	PL41	PL42	PL43	PL51	PL52	PL61	PL62	PL63
Number of bovine animals in the NUTS2 region, in LSU	0,4	1,0	1,3	0,9	1,1	0,5	0,6	0,8
Number of sheep and goats in the NUTS2 region, in LSU	5,5	10,9	16,8	15,2	18,9	4,6	5,7	6,1
Number of pigs in the NUTS2 region, in LSU	0,9	1,4	1,9	1,4	1,8	0,9	1,4	1,2
Number of poultry in the NUTS2 region, in LSU	0,3	0,7	1,9	1,0	1,3	0,5	0,3	0,8

In the case of animal production, similarly as with crop production, the value of the relative standard error at the voivodship level exceeded 10% for the rare and low-significance characteristics in Poland, i.e. for the number of sheep and goats (in 6 voivodships).

3.1.2 Non sampling errors

The major non-sampling errors identified in the census included coverage errors (under-coverage, over-coverage) and non-response.

As a result of the lack of updated data for all agricultural holdings, combined with the changes occurring between the census list preparation and the census commencement, not all farms that belonged to the target population were effectively included in the census frame, which at the same time, comprised certain units that did not actually belong to the aforesaid population. In order to reduce such errors, pre-

census round was conducted, as part of which the list of agricultural holdings to be used in the operation was updated to the highest extent possible.

Eventually more than 24 thousand agricultural farms (new and omitted) were added during the census. At the same time, the survey revealed that the frame contained liquidated farms, units which were not agricultural holdings and doubled farms (a total of approx. 170 thousand units).

It also turned out that:

- the census comprised approx. 190 thousand units, falling below the threshold adopted in the full-scope survey. These farms were removed from the set of units obtained in the census to the set surveyed only for domestic purposes,
- the sample survey conducted for domestic purposes, covered approx. 17 thousand agricultural farms, which met thresholds for full-scale survey. These farms were included in the census data set.

Under-coverage error involved 2.5% of the target population and over-coverage errors – 18%.

As a result of refusal or lack of contact, approx. 80 thousand agricultural holdings were not surveyed during the census. The imputation performed in the case of approx. 68 thousand farms, for which ARMA data on the area of agricultural land was available, was based on the "closest-neighbour" method. Specific records were established for each of the non-enumerated holdings (referred to as recipient farms), including the following data:

- the holding identifier (based on the census list),
- address characteristics, i.e. the voivodship, powiat and gmina symbol of the seat of the holder (based on the ARMA data sets),
- the area of agricultural land kept in a good agricultural and environmental condition (based on the ARMA data sets).

In each gmina of the recipient farm, the most similar enumerated agricultural farms (referred to as donor farms) were selected on the basis of certain criteria, which delivered the data required.

A donor farm had to satisfy the following criteria:

- ✓ the same gmina as the headquarter of the holding,
- ✓ conducting of agricultural activity,
- ✓ the area of agricultural land above 1 ha,
- ✓ the area of agricultural land kept in a good agricultural and environmental condition above 0, and possibly the closest to the area of the recipient farm,

- ✓ completed fields regarding the age, sex and labour input of the holder, his/her spouse and other family members (if any), and the labour input of hired employees (if any).

Having selected the donor farm, specific census data was transferred to the corresponding fields in the recipient farm's record.

Upon imputation, the non-response units accounted for 0.7% of the surveyed holdings that satisfied the thresholds adopted in the full-scope survey.

In the sample survey on agricultural production methods, the non-response rate reached 2.6%. Weights adjustment was performed in order to eliminate the reference error (using the method described in Point 3.1.1).

But for a few isolated cases, the CAPI and CATI method resulted in fully-completed questionnaires. Incomplete questionnaires were the most frequent in the case of the self-enumeration via Iinternet, and the missing data was meant to be completed by of interviewers or enumerators. For technical reasons, a slightly higher rate of item non-response (0.1%) was recorded for the characteristics of persons working in an agricultural holding.

With a view to minimising the number of errors made by enumerators and interviewers, a number of training courses were conducted at the central and regional level. A set of very detailed questionnaire completion guidelines was also developed. The use of an electronic questionnaire was extremely helpful, as it contained the necessary definitions and clarifications that could be used by both enumerators and respondents in the questionnaire completion process. It guided the response process, contained useful dictionaries, reported errors and suggested how they could be eliminated, calculated some of the data, and automatically transferred the recurrent values, as well as, preventing omissions.

An important role was played by gmina leaders, who were acquainted with the local conditions and survey respondents. They provided assistance to census enumerators in the case of interview refusals, together with a substantive support. The Gmina Census Office was obliged to assist the enumerators in any situations that could lead to an incomplete census conduction or incompleteness of data.

In order to eliminate any errors connected with misunderstanding or misinterpretation of methodological principles or definitions, or with any extraordinary circumstances, enumerators could report any problems to gmina leaders. Depending on their complexity, such problems could be then solved at the gmina, voivodship or central level. In order to ensure an efficient exchange of information and communication, a special Notification System was released to foster an ongoing communication between the gmina and voivodship census bureaux, and the Central Census Bureau. It comprised

all questions and responses regarding the census organisation, the methodology of the census and the survey on agricultural production methods, as well as the use of census applications.

3.1.3 Methods for handling missing or incorrect data items

Most of the questionnaires obtained in the AC and SAPM were complete, due to the verification conducted at the data collection stage and by voivodship and central controllers. In the questionnaire completion process, the data completeness and quality control was supported through a specially-designed application, used in the census-support systems based on CAPI, CATI and CAII.

Missing data were infrequent, and it could be usually completed on the basis of other information collected through the questionnaire.

Special automatic accounting and logical adjustment principles elaborated by experts were employed with a view to completing the missing data and adjusting the inaccurate ones. Where necessary, the said principles were verified or supplemented on the basis of data control reports. Data adjustment was performed on the questionnaire modules (sections) in a specified order.

In special cases, where the automatic corrections failed to work, individual records were analysed and adjusted by experts, based on the data obtained in AC and SAPM as well as data concerning a given farm, which came from other statistical surveys. This mostly concerned the cases of a large area of agricultural land, a large crop area, or a large number of certain animal species. In such cases, it was verified whether other data in the analysed records confirmed the occurrence of such a high value of certain characteristics, and whether a similar phenomenon scale was also reflected in specialised crop and animal surveys.

Data imputation was performed in the case of those agricultural holdings for which the labour force section (description in Point 3.1.2) was not completed. Data was taken from those farms which were fully enumerated and which satisfied the following criteria:

- ✓ the same gmina of the headquarter of the holding,
- ✓ the same legal personality,
- ✓ the same record in the field concerning special branches of agricultural activity,
- ✓ the most similar area of agricultural land and the number of individual animal species.

3.1.4 Control of the data

The questionnaires completed using the CAII method were verified in terms of data completeness and quality, and then accepted by the Voivodship Census Management Centre. Unaccepted questionnaires, depending on the degree of completion and error significance, were intended to be completed using the CATI method (in the Voivodship Call Centre) or the CAPI one (by the enumerator indicated by the relevant controller).

All census enumerators and interviewers completed an electronic questionnaire, the application of which contained a set of accounting and logical control algorithms. At the same time, it prevented the omission of any questions, the completion of which was required on certain interview "paths".

Upon uploading to OMB the data obtained from the accepted CAPI, CATI and CAII questionnaires, and from administrative sources, as well as the data imputed for unit's non-responses, the central set was covered by an automatic logical and accounting control and it was verified in terms of the scope. The control algorithms also contained the principles of validation required by Eurostat (Manual for data suppliers, survey 2010, rev. 7.). However, considering the changes in the area of agricultural land, it was acceptable for "the average utilised agricultural area of the farm which has been irrigated during the last 3 years" (M_8_1_1) to be inconsistent with "utilised agricultural area „ (A_3_1) in the reference year.

Internal control principles were established for each module (section) of the questionnaire. Additionally, the control comprised verifying the internal relations and cohesion within the section. The modules were further verified in a specified order. Having controlled and possibly adjusted a given module, a subsequent module was verified. The control principles in individual modules were also applied in a certain order. In case, an error was detected, the application performed an automatic adjustment.

Upon completion of the control process, a report was generated, containing information on the validation principles applied, errors identified and the adjustments performed. The erroneous records, which failed to be adjusted automatically, were analysed by experts who, based on their specialised knowledge and information available, identified the errors and decided how they should be treated (accepted or corrected and the way of correction).

The aggregated data was compared with the results of the 2002 agricultural census, the 2007 farm structure survey, and ongoing surveys on crop and animal production.

3.2. Evaluation of results

The table below presents the results of the analysis of completeness of the census and survey on agricultural production methods.

Table7. The number of agricultural holdings in AC and SAPM

Specification	Survey	
	FSS (full survey)	SAPM (sample survey)
Initial list of units	1 838 136	1 838 136
Initial sample	NA	201 365
Number of holdings with completed questionnaires (incl. imputed questionnaires):	1 692 865	187 228
number of units under the threshold applied*	186 245	2 521
Holdings with ceased activities**	171 040	6 650
Unit non-response:	78 890	4966
not corrected	10 866	NA
imputed/rewigthting)	68 024	36
Number of records transferred to Eurostat	1 506 620	187 228

** farms that fail to meet the thresholds for a full-scale survey; they were removed to the set of farms surveyed for domestic purposes.*
*** liquidated farms, not meeting the definition criteria, doubled.*

The comparison of the 2010 agricultural census results with the results of ongoing statistical surveys regarding land use, crop production and animal production, with the survey on the structure of agricultural farms in 2007, and with administrative data, indicated coherence between the observed and expected trends for major characteristics.

The differences between the data obtained in the 2010 census and in the survey on the structure of agricultural farms in 2007 resulted especially from:

- changes in the Polish agriculture, caused by the influence of the national and EU agricultural policies and by the business tendencies in agriculture, as well as by agro-weather conditions (floods),
- changes in the agricultural surveys frame. In connection with the outdatedness of the frame established after the 2002 agricultural census, a new frame was established for the purposes of the 2010 census, applying a different methodology (an object-based approach) and making more extensive use of administrative sources,
- using a different survey method. In 2007 this was a sample survey.

Table 8. Comparing the basic data for 2007 and 2010

Specification	FSS 2007*	FSS 2010	Difference in %
Number of holdings	1 792 892	1 506 620	-16,0
UAA (A_3_1), ha	15 245 829	14 447 293	-5,2
Arable land, ha	11 629 532	10 797 425	-7,2
Permanent grassland (B_3), ha	3 210 857	3 229 197	+0,6
Permanent crops (B_4), ha	360 536	389 674	+8,1
Wooded area (B_5_2), ha	1 150 307	1 162 824	+1,1
Unutilised Agricultural Area (B_5_1), ha	360 023	411 749	+14,4
Fallow land (B_1_12_1 + B_1_12_2), ha	420 303	431 572	+2,7
Livestock, LSU	1 0990 979	1 0377 223	-5,6
Cattle (C_2), head	5 827 282	5 742 010	-1,5
Family labour force, persons	4 026 456	4 449 348	+10,5
Family labour force, AWU	1 970 859	1 875 575	-4,8
Non family labour force, persons	61 059	89 221	+46,1
Non family labour force, AWU	121 377	102 479	-15,6

**data for agricultural holdings meeting the thresholds adopted for FSS 2010*

As compared to 2007, a 16% decrease in the number of agricultural farms in AC was noted. This results from changes in the structure of agricultural holdings. The share and number of the smallest farms (with the area of 1 - 5 ha of agricultural land), which at the same time constitute the largest group, was declining. In comparison with 2007, their number dropped by approx. 1/5 and their land stopped to be used for agricultural purposes or took over by a bigger farms. The number of the largest farms (above 50 ha) grew by over 10%, though their share in the total number of farms has remained insignificant (approx. 1.5%).

In the reference period, the unutilised agricultural area grew by 14.4%. As a result of a multi-annual lack of the use of agricultural land (abandoning agricultural production, among other things, for economic reasons), such land enters the category of land not kept in a good agricultural and environmental condition. In 2010, Poland

experienced extensive flooding of agricultural land, in consequence of which the area of agricultural land not kept in a good agricultural and environmental condition increased.

Considerable differences recorded in respect to the labour force resulted mainly from methodological changes. In 2010, the family labour force additionally included family members not residing with the farm holder, and the time they worked on the agricultural farm was counted as well. The question about the time worked was also different in both surveys. In 2007, an average number of hours worked per week was given, together with the number of weeks in 4 seasons. In 2010, the bands of working time per year were given.

Regarding the non-family labour force, in both surveys the number of permanent paid employees was given together with the paid managing staff. In 2007, paid employees were enumerated by name, which might have led to the respondents' reluctance to indicate the full number of the employed, particularly in case of oral agreements. In 2010, permanent paid employees (with the exception of paid managers) were enumerated jointly (by gender). Additionally, the number of large farms employing workers outside their family labour force increased, and so did the interest in permanent paid work, even on a part-time basis. In both surveys, the number of working units for permanent and temporary employees was indicated. The question about the time worked by permanent paid employees was also different in both surveys. In 2007 an average number of hours worked per week was given, together with the number of weeks in 4 seasons, whereas in 2010 only the bands of working time per year were given.

3.3. Data Revision Policy

As in the case of other statistical surveys related to agriculture, neither the census nor the survey on agricultural production methods made use of the revision policy.

4. ACCESSIBILITY AND PUNCTUALITY

4.1 Publications

The preliminary results of the agricultural census were published in the signalling note presented at the press conference in February 2011 (basic data at the national level), and then in July 2011 in the publication entitled "Report on the Results of the 2010 Agricultural Census" (in a broader thematic scope and at NUTS 2).

Until March 2012, the following publications have been released, containing the final results of the census and the survey on agricultural production methods:

- Land use (November 2011),
- Livestock and selected elements of animal production methods (December 2011),
- Agricultural crops and selected elements of plant production methods (January 2012),
- Means of production in agriculture (January 2012),
- Horticultural crops (February 2012),

The following publications are planned to be released in 2012:

- Characteristics of agricultural holdings (April 2012),
- Labour force in agricultural holdings (October 2012),
- 16 voivodship publications entitled Characteristics of agricultural holdings in ... voivodship (June 2012).

All publications contain methodological information, together with basic definitions, and basic result analyses, as well as tables and figures presenting numerical data.

It is also planned that a series of analytical publications will be released in cooperation with scientific institutions.

The reference publications are released in paper form, and are available on-line (on www.stat.gov.pl) and on CD's.

The results of AC and SAPM will be also available in the following formats:

- in the Local Database – a database available on the CSO website, containing a basic collection of statistical information (including on agriculture) at all NUTS levels,
- published together with other statistical data in comprehensive CSO publications (e.g. in the Statistical Yearbook of the Republic of Poland and in the Statistical Yearbook of Agriculture),
- through the External User Application (Polish acronym: AUZ) described below.

The External User Application was installed to ensure the provision of AC and SAPM data in an efficient way, tailored to the needs of diversified users. External users may view the products created in AMB using the AUZ application. Any user willing be familiarised with the results of the census and the survey on agricultural production methods can activate the AUZ application through a search engine and browse through the public AMB products. If a searched product is not on the list of publicised reports and

analyses, the external user may submit a request for a new product through AUZ. The application provides for several request submission models, such as:

- a simple mode,
- an advanced mode,
- an additional annex (where necessary).

Within the simple mode, the user describes their expectations in relation to the new analysis or report. In the advanced mode the provider chooses among the available measures and dimensions the relevant information, defining their distribution in the report. In both modes, the user may add an annex illustrating the demand. After defining the needs, the provider waits for the CSO's reply. In the case of a positive settlement of the user's request, the product will be prepared and made available in the private or public mode.

The external user may view their private and public products. Two basic types of products are distinguished:

- static,
- dynamic (based on multidimensional objects).

Static products can have various formats, e.g. pdf or xls, however, they do not allow changes in the prepared report.

Dynamic reports are based on multidimensional objects so that the external user may freely choose and delete available dimensions and measures. After preparing the required report, the user saves the results on a local computer.

4.2 Timeliness and Punctuality

The basic preliminary results of the census (the number of farms, land use, the sown area, livestock at the national level) were published 3 months after the end of collection of census data.

The preliminary results, supplemented with data on agricultural tractors and machines and persons working in agricultural farms, together with data at the voivodship level were published 9 months after the census.

The time lag for publishing the final results of the census and the survey on agricultural production methods for particular groups of characteristics is as follows:

- land use - 12 months,
- livestock, livestock production methods -13 months,

- sown area, crop production methods, tractors, machines and fertiliser use, - 14 months,
- horticultural crops – 15 months,
- other characteristics – 16 months.

Table 9. Punctuality of issuing the publication

Publication title	The planned publication date	The actual publication date	Time lag in days
Report on the results of the 2010 Agricultural Census	July 2011	July 2011	0
Land use	October 2011	November 2011	30
Livestock and selected elements of animal production methods	December 2011	December 2011	0
Agricultural crops and selected elements of plant production methods	December 2011	January 2011	15
Means of production in agriculture	December 2011	January 2012	15
Horticultural crops	December 2011	February 2012	45

5. CONFIDENTIALITY AND SECURITY

Similar as in the case of all statistical surveys conducted by the CSO, also in the course of collecting, storing, processing and disseminating data from the census and the survey on agricultural production methods, the provisions of the Law on official statistics, which were also referred to in the Law on agricultural census 2010, were strictly complied.

The act on official statistics provides for the confidentiality and safety of statistical data in the articles cited below:

Article 10.

The collected and gathered in the statistical surveys of official statistics individual and personal data shall be confidential and subject to particular protection; the data shall be used exclusively for statistical calculations, compilations and

analyses and for the creation by the statistical services of official statistics sampling frames for statistical surveys conducted by those services; providing or use of individual and personal data for other than specified above purposes shall be prohibited (statistical confidentiality).

Article 12.
The staff of the official statistical services, the census enumerators, statistical interviewers and other persons performing activities in the name and on the behalf of official statistics, having direct access to individual and personal data shall be obliged to observe without exceptions the statistical confidentiality and shall be allowed to perform those activities only after delivering an oath in a written form, at a statistical office or other units of official statistical services, of the following contents:

"I hereby take summons that I shall perform my tasks on the behalf of the official statistics dutifully, in accordance with the professional ethics of a statistician and that I shall keep secret from the third parties the individual data known to me during performing those tasks."

Article 38.

1. *It shall not be allowed to publish or disseminate individual data obtained in the statistical services of official statistics.*
2. *It shall not be allowed to publish or disseminate obtained in statistical surveys of official statistics statistical information which can be linked or can identify natural persons or individual data characterising business entities, especially if the aggregated data consist of less than three entities or the share of one entity in the compilation is higher than the three-fourths of the total.*
3. *The President of the Council of Ministers shall specify, by means of a regulation, the procedures and forms of publishing and dissemination of the results of statistical surveys.*

Article 39.
The President of the Central Statistical Office shall ensure that the storing of collected statistical data guarantees observing the principles of statistical confidentiality.

Acting in accordance with the provision of the Law on the agricultural census 2010, the collected individual data were collected, stored and validated in the Operational

Microdata Base (OMB). In the light of the provision of the Law on agricultural census 2010 (Article 11 par. 2) the data collected in AC 2010, the data concerning the name and surname, PESEL number and address will be permanently removed from the OMB not later than after 2 years after the end of the census, i.e. 31 October 2012.

For the purposes of analysis and dissemination, depersonalised individual data were extracted to the Analytical Microdata Base (AMB). The tables containing results calculated for publication purposes or carrying out individual orders by experts (statistical staff), responsible for enforcing statistical confidentiality according to the above mentioned rules.

In order to make it possible for the scientific community to carry out scientific analyses on the basis of depersonalised individual data, a Team for the preparation of analytical publications containing the results of agricultural census 2010 was established.

The Team consists of representatives of the CSO and scientific institutions who jointly prepared the thematic scope of the planned analyses and publications. The scientists cooperating with the CSO, when working on depersonalised data, will be obliged to sign an oath on maintaining statistical confidentiality.

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ANNEX

The questionnaire for the agricultural census and the survey on agricultural production methods 2010

Questionnaire

on agricultural census and survey on agricultural production methods 2010

SECTION 0. IDENTYFING CHARACTERISTICS

1. Identification number of agricultural holding
2. Legal status
3. Holder's first name and surname or name
4. PESEL (personal identification number)
5. REGON (business register number)

Address of the holder

6. Voivodship
7. Powiat
8. Gmina
9. Town
10. Street
11. House number, flat number
12. Mobile phone number
13. Phone number

Address of the holding

14. Voivodship
15. Powiat
16. Gmina
17. Town
18. Street
19. House number, flat number
20. Phone number

Contact address

21. Voivodship
22. Powiat
23. Gmina
24. Town
25. Street
26. House number, flat number

SECTION I. LAND USE (UG)

NOTE: Data as of 30 June 2010.

Question 1 (UG1)
Did the agricultural holding use the land?
- **UG1 –** Yes -> **UG2**
- **UG1 –** No -> **DG1**

Question 2 (UG2)
What was the total area of land in the agricultural holding? [ha, a]
- **UG2a –** in total
  of which
  - **UG2b –** forests and forest land
  - **UG2c –** other land
  - **UG2d –** agricultural land in total

Question 3 (UG3)
The total area of the agricultural land amounted to: [ha, a]
- **UG3p –** in total
  of which
  - **UG3a –** other agricultural land (not maintained in good agricultural and environmental condition)
  - **UG3b –** agricultural land in good agricultural and environmental condition

Question 4 (UG4)
The area of agricultural land in good agricultural condition amounted to: [ha, a]
- **UG4p –** in total
  of which
  - **UG4a –** permanent meadows
  - **UG4b –** permanent pastures
  - **UG4c –** orchards (plantation of fruit trees and bushes and their nurseries)
  - **UG4d –** kitchen gardens
  - **UG4e –** fallow land
  - **UG4f –** sown area

Question 5 (UG 5)
The total area of agricultural land amounted to: [ha, a]
- **UG5p –** in total
  of which
  - **UG5a –** own land excluding land leased out to third parties (including marital and family co-ownership)
  - **UG5b –** land leased from other persons excluding land leased out to third parties
  - **UG5c –** land used jointly and other types of use (in the part of the user) excluding the land leased out to third parties

Question 6 (UG6)
What was the total area of agricultural land in the holding in conversion hectares? [ha, a]
- **UG6a –** own land excluding land leased out to third parties (including joint property of spouses and family)
- **UG6b –** land leased from other persons excluding land leased out to third parties
- **UG6c –** land used jointly and other types of use (in the part of the user) excluding the land leased out to third parties

Question 7 (UG 7)
The area of the agricultural land in good agricultural and environmental condition in physical hectares amounted to: [ha, a]

- **UG7p –** in total
  of which
  - **UG7a –** own land excluding land leased out to third parties (including marital and family co-ownership)
  - **UG7b –** land leased from other persons excluding land leased out to third parties
  - **UG7c –** land used jointly and other types of use (in the part of the user) excluding the land leased out to third parties

Question 8 (UG 8)
How many parcels (separate parts) did the area of agricultural land consist of?

Question 9 (UG9)
What was the distance from the holding seat to the most outlying parcel being the part of the agricultural land of the holding? [km]

Question 10 (UG10)
The area of forests and forest land amounted to: [ha, a]

- **UG10p –** in total
  of which
  - **UG10a –** plantation of fast-growing trees and bushes
    including:
    - **UG10b –** used for production of renevable energy
      of which
      - **UG10c –** salix
      - **UG10d –** poplar
      - **UG10e –** false acacia

Question 11 (UG11)
The area of permanent meadows amounted to: [ha, a]

- **UG11p –** in total
  of which
  - **UG11a –** out of production

Question 12 (UG12)
The area of permanent pastures amounted to: [ha, a]

- **UG12p –** in total
  of which
  - **UG12a –** rough grazing
  - **UG12b –** out of production

Question 13 (UG13)
The area of orchards amounted to: [ha, a]

- **UG13p –** in total
  of which
  - **UG13a –** nurseries of fruit trees and bushes
  - **UG13b –** plantations of fruit trees
  - **UG13c –** plantations of fruit bushes and plantations of berries (excluding
  - strawberries and wild strawberries)

Question 14 (UG14)
The area of plantations of fruit trees amounted to: [ha, a]

- **UG14p –** in total
  of which
  - **UG14a –** apple trees
  - **UG14b –** pear trees
  - **UG14c –** plum trees
  - **UG14d –** cherry trees
  - **UG14e –** sweet cherry trees
  - **UG14f –** walnut trees
  - **UG14g –** other trees

Question 15 (UG15)
The area of plantations of fruit bushes and plantations of berries (excluding strawberries and wild strawberries) amounted to: [ha, a]

- **UG15p –** in total
  of which
  - **UG15a –** gooseberries
  - **UG15b –** currants
  - **UG15c –** raspberries
  - **UG15d –** grapevine
  - **UG15e –** hazel
  - **UG15f –** other crops
    of which
    - **UG15g –** high blueberries
    - **UG15h –** chokeberries

Question 16 (UG16)
The cultivated area in kitchen gardens amounted to: [ha, a]

- **UG16p –** in total
  of which
  - **UG16a –** potatoes
  - **UG16b –** vegetables
  - **UG16c –** strawberries (including wild strawberries)
  - **UG16d –** other crops

Question 17 (UG17)
The area of fallow land amounted to: [ha, a]

- **UG17p –** in total
  of which
  - **UG17a –** subject to single area payment

SECTION II. ECONOMIC ACTIVITY (DG)

NOTE: Data concerns the period from 1 July 2009 to 30 June 2010 unless stated otherwise.

Question 1 (DG1)
Has the holding been involved in agricultural activities on 30 June 2010?

- **DG1 –** Yes -> **DG2**
- **DG1 –** No -> **end of the interview**

Question 2 (DG2)
Has the holding been engaged in other gainful activities directly related to the holding?
- **DG2a –** agro-tourism
- **DG2b –** handicrafts
- **DG2c –** processing of agricultural products
- **DG2d –** production of renewable energy for sale
- **DG2e –** processing of raw wood in the agricultural holding
- **DG2f –** aquaculture
- **DG2g –** agricultural contractual works using production means of the holding
- **DG2h –** non-agricultural contractual works using production means of the holding
- **DG2i –** forestry
- **DG2j –** other
- **DG2k –** no activity

Question 3 (DG3)
What was the share in the revenues from the sales of products and services from other gainful activity directly related to the holding in the final output?
- **1 –** up to 10%
- **2 –** 11%-50%
- **3 –** over 50%

Question 4 (DG4)
Does the farm holder plan to retire or become a pensioner (including a structural pension) up to 2013?
- **DG4 –** Yes -> further part of questions
- **DG4 –** No -> **SD1**

Question 5 (DG5)
Who will be the successor to the farm holder?
- **1 –** member of the family
- **2 –** person from outside the family
- **3 –** I do not know

SECTION III. INCOME STRUCTURE (SD)

NOTE: Data concerns the period from 1 July 2009 to 30 June 2010.

Question 1 (SD1)
What part of the total income of the holder's household make income from: [%]
- **SD1a –** conducting agricultural activity
- **SD1b –** conducting non-agricultural economic activity
- **SD1c –** hired work
- **SD1d –** pensions and disability pensions
- **SD1e –** other non-gainful income sources apart from pension and disability pension

Question 2 (SD2)
What part of the final production was allocated to the needs of the holder's household?
- **1 –** 0%
- **2 –** 1%-25%
- **3 –** 26%-50%
- **4 –** 51%-75%
- **5 –** 76%-99%
- **6 –** 100%

Question 3 (SD3)
What was the share of the direct sales to final consumers (i.e. in market places, in own shops, sales among neighbours) in the total sales of the holding?

- **1 –** 0%
- **2 –** 1%-25%
- **3 –** 26%–50%
- **4 –** 51%-75%
- **5 –** over 75%

SECTION IV. SOWN AND OTHER AREA (PZ)

NOTE: Data as of 30 June 2010 unless stated otherwise.

Question 1 (PZ1)
Sown area (including permanent crops other than orchards) [ha, a]

Question 2 (PZ2)
Did the holding farm cultivate cereals?

- **PZ2 –** Yes -> **PZ3**
- **PZ2 –** No -> **PZ4**

Question 3 (PZ3)
What was the area of cereals (for grain)? [ha, a]

- **PZ3a –** winter wheat
- **PZ3b –** spring wheat
- **PZ3c –** rye
- **PZ3d –** winter barley
- **PZ3e –** spring barley
- **PZ3f –** oats
- **PZ3g –** winter triticale
- **PZ3h –** spring triticale
- **PZ3i –** winter cereal mixed
- **PZ3j –** spring cereal mixed
- **PZ3k –** maize for grain
- **PZ3l –** buckwheat
- **PZ3m –** millet
- **PZ3n –** other cereals (sorghum, amaranth, canary grass, etc.)

- **PZ3o –** total

Question 4 (PZ4)
What was the area of potatoes? [ha, a]

Question 5 (PZ5)
What was the area of sugar beet? [ha, a]

Question 6 (PZ6)
Did the holding cultivate oilseeds for grain?

- **PZ6 –** Yes -> **PZ7**
- **PZ6 –** No -> **PZ8**

Question 7 (PZ7)
What was the area of oilseeds for grain? [ha, a]
- **PZ7a –** winter rape and turnip rape
- **PZ7b –** spring rape and turnip rape
- **PZ7c –** sunflower for grain
- **PZ7d –** soya
- **PZ7e –** oilseed flax
- **PZ7f –** other oilseeds (e.g. mustard, oilseed pumpkin, linseed dodder, oilseed turnip)

➢ **PZ7g –** total

Question 8 (PZ8)
What was the area of edible pulses for dry grain? [ha, a]
- **PZ8a –** peas
- **PZ8b –** beans
- **PZ8c –** broad beans
- **PZ8d –** other pulses (lentil, chickpea, soya, etc., designated for grain consumption)

➢ **PZ8e –** total

Question 9 (PZ9)
What was the area of mixed winter cereal and pulses for grain? [ha, a]

Question 10 (PZ10)
What was the area of mixed spring cereal and pulses for grain? [ha, a]

Question 11 (PZ11)
Did the holding cultivate fodder pulses for grain?
➢ **PZ11 –** Yes -> **PZ12**
➢ **PZ11 –** No -> **PZ13**

Question 12 (PZ12)
What was the area of fodder pulses for grain? [ha, a]
- **PZ12a –** field peas
- **PZ12b –** vetch
- **PZ12c –** field beans
- **PZ12d –** sweet lupine
- **PZ12e –** other fodder pulses

➢ **PZ12f –** total

Question 13 (PZ13)
What was the area of fodder pulses for green forage? [ha, a]

Question 14 (PZ14)
What was the area of maize for green forage? [ha, a]

Question 15 (PZ15)
What was the area of papilionaceus crops for forage? [ha, a]

Question 16 (PZ16)
What was the area of temporary grasses for forage? [ha, a]

Question 17 (PZ17)
What was the area of other pulses for forage? [ha, a]

Question 18 (PZ18)
Did the holding cultivate plants intended for ploughing as major crops?
➢ **PZ18 –** Yes -> **PZ19**
➢ **PZ18 –** No -> **PZ20**

Question 19 (PZ19)
What was the area of plants intended for ploughing, cultivated as major crops? [ha, a]

- **PZ19a –** bitter lupine
- **PZ19b –** fodder pulses (field peas, vetch, broad beans, sweet lupine, mixed pulses and cereal pulses, as well as other feed crops)
- **PZ19c –** fodder legumes (clover, lucerne, sainfoin, ornithopus, anthyllis, lotus and sweet clover, purely sown or mixed, etc.)
- **PZ19d –** field grasses (purely sown or mixed)
- **PZ19e –** other crops for ploughing (e.g. cereals)

➢ **PZ19f –** total

Question 20 (PZ20)
What was the area of fodder plants? [ha, a]

- **PZ20a –** fodder beets
- **PZ20b –** other fodder plants

➢ **PZ20c –** total

Question 21 (PZ21)
What was the area of fibrous flax? [ha, a]

Question 22 (PZ22)
What was the area of hemp? [ha, a]

Question 23 (PZ23)
What was the area of tobacco? [ha, a]

Question 24 (PZ24)
What was the area of hops? [ha, a]

Question 25 (PZ25)
What was the area of herbs and culinary plants? [ha, a]

Question 26 (PZ26)
What was the area of chicory? [ha, a]

Question 27 (PZ27)
What was the area of other industrial crops? [ha, a]

Question 28 (PZ28)
What was the area of field vegetables? [ha, a]

Question 29 (PZ29)
What was the area of field strawberries and wild strawberries? [ha, a]

Question 30 (PZ30)
Did the holding cultivate crops under covers?

- **PZ30 –** Yes -> **PZ31**
- **PZ30 –** No -> **PZ32**

Question 31 (PZ31)
What was the area of crops cultivated under covers? [ha, a]

- **PZ31a** – vegetables
- **PZ31b –** flowers and ornamental plants
- **PZ31c –** strawberries and wild strawberries
- **PZ31d –** permanent crops
- **PZ31e –** other crops

➢ **PZ31f –** total

Question 32 (PZ32)
What was the area of field flowers and ornamental plants? [ha, a]

Question 33 (PZ33)
What was the area of crops for seeds? [ha, a]
- **PZ33a –** papiloionaceus crops for fodder
- **PZ33b –** field grasses and other fodder crops
- **PZ33c –** other seed crops

➢ **PZ33d –** total

Question 34 (PZ34)
What was the area of nurseries of ornamental trees and bushes? [ha, a]

Question 35 (PZ35)
What was the area of forest trees nurseries for commercial purposes? [ha, a]

Question 36 (PZ36)
What was the area of fast-growing trees and bushes cultivated on agricultural land? [ha, a]

➢ **PZ36a – total**

of which
- **PZ36b –** used for energy purposes

including
- **PZ36c –** willow
- **PZ36d –** poplar
- **PZ36e –** false acacia

Question 37 (PZ37)
What was the area of osier? [ha, a]

Question 38 (PZ38)
What was the area of fruit-bearing trees grown outside plantations? [ha, a]

Question 39 (PZ39)
What was the area of fruit-bearing bushes grown outside plantations? [ha, a]

Question 40 (PZ40)
What was the area of other permanent crops? [ha, a]

Question 41 (PZ41)
What was the area of other crops? [ha, a]

Question 42 (PZ42)
The area of field vegetables amounted to... [ha, a]

of which
- **PZ42a –** cabbage
- **PZ42b –** cauliflower
- **PZ42c –** onion
- **PZ42d –** edible carrot
- **PZ42e –** red beets
- **PZ42f –** tomatoes
- **PZ42g –** cucumbers
- **PZ42h –** other

Question 43 (PZ43)
The area of fresh vegetables amounted to... [ha, a]

of which
- **PZ43a –** as part of crop rotation with agricultural crops
- **PZ43b –** as part of crop rotation with horticultural crops

Question 44 (PZ44)
The area of field strawberries and wild strawberries amounted to... [ha, a]
of which
- **PZ44a –** as part of crop rotation with agricultural crops
- **PZ44b –** as part of crop rotation with horticultural crops

Question 45 (PZ45)
The area of vegetables cultivated under covers amounted to... [ha, a]
of which
- **PZ45a –** tomatoes
- **PZ45b –** cucumbers
- **PZ45c –** sweet peppers
- **PZ45d –** other

Question 46 (PZ46)
What was the area of successive secondary crops? [ha, a]
- **PZ46a –** spring
- **PZ46b –** winter
- **PZ46c –** total

Question 47 (PZ47)
What was the largest cultivation area of mushrooms in the period from 1 July 2009 to 30 June 2010? [m^2]

Question 48 (PZ48)
Did the holding have any area of crops cultivated on arable land for energy purposes (bio-fuels or renewable energy)?
- **PZ48 –** Yes -> continue this question
- **PZ48 –** No -> **PZ49**

one-year crops [ha, a]
- **PZ48a –** total cereals (except maize)
- **PZ48b –** maize
- **PZ48c –** rape and turnip rape
- **PZ48d –** sugar beets
- **PZ48e –** other crops
- **PZ48f –** total

perennial crops [ha, a]
- **PZ48g –** multiflora rose
- **PZ48h –** Virginia fanpetals
- **PZ48i –** Miscanthus giganteus
- **PZ48j –** Jerusalem artichoke
- **PZ48k –** Sakhalin knotweed
- **PZ48l –** reed canary grass
- **PZ48m –** other crops (except fast-growing trees and shrubs cultivated on agricultural land)
- **PZ48n –** total

- **PZ48o –** total

Question 49 (PZ49)
What was the area of agricultural land that could been irrigated in the period from 1 July 2009 to 30 June 2010 using the existing water resources, as well as irrigating equipment available on the holding? [ha, a]

Question 50 (PZ50)
What was the area irrigated at least once in the period from 1 July 2009 to 30 June 2010? [ha, a]

SECTION V. LIVESTOCK (ZW)

NOTE: Data as of 30 June 2010.

Question 1 (ZW1)
Did the holding deal with livestock breeding (cattle, pigs, sheep, goats, horses, poultry, rabbits, fur-bearing-animals, bees and other animals)?

- **ZW1 –** Yes -> **ZW2**
- **ZW1 –** No -> **MA1**

Question 2 (ZW2)
Did the holding breed cattle?

- **ZW2 –** Yes -> **ZW3**
- **ZW2 –** No -> **ZW4**

Question 3 (ZW3)
Number of cattle: [heads]

- **ZW3a –** male under 1 year
- **ZW3b –** female under 1 year,
  of which
  - **ZW3c –**females belonging to a meat breed or crossbreed
- **ZW3d –** male one but less than two years old
- **ZW3e –** female one but less than two years old
  of which
  - **ZW3f –** females belonging to a meat breed or crossbreed
- **ZW3g –** male cattle aged 2 years or more
- **ZW3h –** heifers aged 2 years or more,
  of which
  - **ZW3i –** heifers belonging to a meat breed or crossbreed
- **ZW3j –** dairy cows
- **ZW3k –** suckling cows

- **ZW3w –** total

Question 4 (ZW4)
Did the holding deal with pig breeding?

- **ZW4 –** Yes -> **ZW5**
- **ZW4 –** No -> **ZW6**

Question 5 (ZW5)
Number of pigs: [heads]

- **ZW5a –** piglets up to 20 kg
- **ZW5b –** young pigs from 20 to 50 kg
- **ZW5c –** boars and weaners of 50 kg or more
  of which
  - **ZW5d –** breeding boars
- **ZW5e –** sows in pig of 50 kg or more
  of which
  - **ZW5f –** sows in pig for the first time
- **ZW5g –** other sows of 50 kg or more
  of which
  - **ZW5h –** sows not mated yet
- **ZW5i –** pigs for slaughter of 50 kg or more for fattening

- **ZW5w –** total

Question 6 (ZW6)
Did the holding deal with sheep breeding?
- **ZW6 –** Yes -> **ZW7**
- **ZW6 –** No -> **ZW8**

Question 7 (ZW7)
Number of sheep**:** [heads]
- **ZW7a –** lambs
- **ZW7b –** dairy ewes
- **ZW7c –** other ewes
- **ZW7d –** other adult sheep

ZW7w – total

Question 8 (ZW8)
Did the holding deal with goat breeding?
- **ZW8 –** Yes -> **ZW9**
- **ZW8 –** No -> **ZW10**

Question 9 (ZW9)
Number of goats: [heads]
- **ZW9a –** female aged 1 year or more
  of which
  - **ZW9b –** female mated for the first time
- **ZW9c –** other goats

ZW9w – total

Question 10 (ZW10)
Did the holding deal with horse breeding?
- **ZW10 –** Yes -> **ZW11**
- **ZW10 –** No -> **ZW12**

Question 11 (ZW11)
Number of horses: [heads]

ZW11 – total
of which
- **ZW11a –** aged 3 years or more

Question 12 (ZW12)
Did the holding deal with breeding poultry aged more than 2 weeks?
- **ZW12 –** Yes -> **ZW13**
- **ZW12 –** No -> **ZW14**

Question 13 (ZW13)
Number of poultry aged more than 2 weeks: [heads]
- **ZW13a –** broilers
- **ZW13b –** adult hens and cocks for slaughter
- **ZW13c –** laying hens producing table eggs
- **ZW13d –** laying hens producing hatching eggs
- **ZW13e –** turkeys
  of which
  - **ZW13f –** turkey hens producing hatching eggs
- **ZW13g –** geese
- **ZW13h –** ducks
- **ZW13i –** other poultry
  of which
  - **ZW13j – ostriches**

ZW13w – total

Question 14 (ZW14)
Number of rabbits, breeding females ` [heads]

Question 15 (ZW15)
Number of beehives

Question 16 (ZW16)
Number of fur animals breeding females [heads]

Question 17 (ZW17)
Number of other livestock, not mentioned elsewhere [heads]

SECTION VI. TRACTORS, MACHINES AND EQUIPMENT (MA)

NOTE: Data as of 30 June 2010 unless stated otherwise

Question 1 (MA1)
Did the holding have at its disposal any agricultural tractors, whether double-axis wheeled or tracked, owned or co-owned, technically efficient, under repair or intended for repair?

- **MA1 –** Yes -> **MA2**
- **MA1 –** No -> **MA3**

Question 2_1 (MA2_1)
How many tractors were owned by the holding? [number]

- **MA2a_1 –** up to 14.99 kW (up to 20.4 KM)
- **MA2b_1 –** from 15 to 24.99 kW (from 20.4 to 34 KM
- **MA2c_1 –** from 25 to 39.99 kW (from 34 to 54.4 KM)
- **MA2d_1 –** from 40 to 59.99 kW (from 54.4 to 81.6 KM)
- **MA2e_1 –** from 60 to 99.99 kW (from 81.6 to 136 KM)
- **MA2f_1 –** 100 kW or more (136 KM or more)

- **MA2w_1 –** total

Question 2_2 (MA2_2)
How many tractors were co-owned by the farm? [number]

- **MA2a_2 –** up to 14.99 kW (up to 20.4 KM)
- **MA2b_2 –** from 15 to 24.99 kW (from 20.4 to 34 KM)
- **MA2c_2 –** from 25 to 39.99 kW (from 34 to 54.4 KM)
- **MA2d_2 –** from 40 to 59.99 kW (from 54.4 to 81.6 KM)
- **MA2e_2 –** from 60 to 99.99 kW (from 81.6 to 136 KM)
- **MA2f_2 –** 100 kW or more (136 KM or more)

- **MA2w_2 –** total

Question 3 (MA3)
Did the holding have at its disposal any trucks or trailers, whether owned or co-owned, technically efficient, under repair or intended for repair?

- **MA3 –** Yes -> **MA4**
- **MA3 –** No -> **MA5**

Question 4 (MA4)

How many trucks or trailers were on the farm? [number]

- **MA4a –** trucks and road tractors with semi-trailers? (if there are more semi-trailers, they should be indicated under the heading "trailers")
  of which
  - **MA4b –** with loading capacity of up to 2 tonnes
- **MA4c** – trailers (single- or multi-axis dump tractors and trucks, as well as semi-trailers with loading capacity exceeding 1 tonne),
  of which
  - **MA4d** – tractor trailers

Question 5 (MA5)

Did the holding have at its disposal any agricultural machinery and equipment, whether owned or co-owned, technically efficient, under repair or intended for repair?

- **MA5 –** Yes -> **MA6**
- **MA5 –** No -> **MA7**

Question 6 (MA6)

How many machines were on the farm? [number]

- **MA6a –** tillage machines
- **MA6b –** combine harvesters
- **MA6c –** forage harvesters
  of which
  - **MA6d –** self-propelled forage harvesters
- **MA6e –** tractor mowers
- **MA6f –** self-loading trailers
- **MA6g –** loaders
- **MA6h –** gripping and frontal trucks
- **MA6i –** other green forage and grain harvesters
- **MA6j –** potato harvesters
- **MA6k –** sugar-beet harvesters
- **MA6l –** potato diggers
- **MA6m –** other root diggers
- **MA6n –** fertiliser and lime spreaders
- **MA6o –** manure spreaders
- **MA6p –** potato planters
- **MA6q –** cultivation units
- **MA6r –** tractor-mounted field sprayers
- **MA6s –** tractor-mounted orchard sprayers
- **MA6t –** can milker
- **MA6u –** pipeline milker
- **MA6w –** can milk coolers
- **MA6x –** tank milk coolers

Question 7 (MA7)

Did the holding use any renewable energy generators in the period from 1 July 2009 to 30 June 2010?

- **MA7 –** Yes -> continue this question
- **MA7 –** No -> **NA1**

  using
  - **MA7a –** wind
  - **MA7b –** biomass
    of which:
    - **MA7c –** bio-methane
  - **MA7d –** solar energy
  - **MA7e –** water energy
  - **MA7f –** other renewable energy sources

SECTION VII. USE OF FERTILSERS (NA)

NOTE: Data concerns the period from 1 July 2009 to 30 June 2010.

Question 1 (NA1)
Did the holding use any mineral, lime or organic fertilisers of animal origin?
- **NA1 –** Yes -> **NA2**
- **NA1 –** No -> **AE**

Question 2 (NA2)
Did the holding use any nitrogen fertilisers?
- **NA2 –** Yes -> **NA3**
- **NA2 –** No -> **NA4**

Question 3 (NA3)
What amount of nitrogen fertilisers was used on the agricultural land? [dt]
- **NA3a –** urea (46% N)
- **NA3b –** ammonium nitrate (34% N)
- **NA3c –** urea-ammonium nitrate solution (30% N) (in liquid fertilisers it should be assumed that 100l=1.3dt, i.e. 130 kg)
- **NA3d –** nitro-chalk, salmag (28% N)
- **NA3e –** ammonium sulphate (21% N)
- **NA3f –** potassium nitrate (14% N)

Question 4 (NA4)
Did the farm use any phosphorus fertilisers?
- **NA4 –** Yes -> **NA5**
- **NA4 –** No -> **NA6**

Question 5 (NA5)
What amount of phosphorus fertilisers was used on the agricultural land? [dt]
- **NA5a –** triple superphosphate (46% P_2O_5)
- **NA5b –** boron superphosphate (20% P_2O_5)
- **NA5c –** powder and granular superphosphate (19% P_2O_5)
- **NA5d –** phosmag (15% P_2O_5)
- **NA5e –** magnesium superphosphate (14% P_2O_5)

Question 6 (NA6)
Did the holding use any potassium fertilisers?
- **NA6 –** Yes -> **NA7**
- **NA6 –** No -> **NA8**

Question 7 (NA7)
What amount of potassium fertilisers was used on the agricultural land? [dt]
- **NA7a –** potassium salt (58-60% K_2O)
- **NA7b –** potassium sulphate (52% K_2O)
- **NA7c –** Kamex (40% K_2O)
- **NA7d –** kainite (14% K_2O)
- **NA7e –** Kalimagnezja (30% K_2O)

Question 8 (NA8)
Did the farm use any multi-component fertilisers?
- **NA8 –** Yes -> **NA9**
- **NA8 –** No -> **NA10**

Question 9 (NA9)

What amount of multi-component fertilisers was used on the agricultural land? [dt]

- **NA9a –** ammonium phosphate (18% N, 46% P_2O_5)
- **NA9b –** Polifoska (8% N, 24% P_2O_5, 24% K_2O)
- **NA9c –** Polymag 306 (6% N, 19% P_2O_5, 19% K_2O)
- **NA9d –** Agrafoska(21% P_2O_5,32% K_2O)
- **NA9e –** fertilizer PKMg (12% P_2O_5,18% K_2O)
- **NA9f –** fertilizer NPKMgO – Lubofoska (4% N, 12% P_2O_5,12% K_2O)
- **NA9g –** Florovit (3% N, 0,7% P_2O_5, 2,4% K_2O)
- **NA9h –** Azofoska (13,6% N, 6,4% P_2O_5, 19,1% K_2O)
- **NA9i –** Vitaflor-1 (9,5% N, 14,5% P_2O_5, 28,5% K_2O)
- **NA9j –** Mikroflor-1 (19,5% N, 19,5% K_2O)
- **NA9k –** Flora (8,2% N, 12,4% P_2O_5, 23,1% K_2O)
- **NA9l –** Vitaflor-2 (13,5% N, 16,5% P_2O_5, 34% K_2O)
- **NA9m –** Mikroflor-2 (23% N, 23% K_2O)
- **NA9n –** fertilizer NPKMg (12%N, 5% P_2O_5, 5% K_2O)
- **NA9o –** Polymag 309 (9% N, 17% P_2O_5, 12% K_2O)

Question 10 (NA10)

Did the farm use any lime fertilisers?

- **NA10 –** Yes -> **NA11**
- **NA10 –** No -> **NA12**

Question 11 (NA11)

What amount of lime fertilisers was used on the agricultural land? [dt]

- **NA11a –** calcium-oxide (75% CaO)
- **NA11b –** calcium-carbonate (40% CaO)
- **NA11c –** calcium-magnesium (50% CaO)
- **NA11d –** dolovite (30% CaO)

Question 12 (NA12)

Did the holding use any organic fertilisers of animal origin?

- **NA12 –** Yes -> **NA13**
- **NA12 –** No -> **AE**

Question 13 (NA13)

What amount of manure solid, liquid manure and slurry was used on the agricultural land?

- **NA13a** – solid manure [dt]
- **NA13b** – liquid manure [$m^{3]}$
- **NA13c** – slurry [$m^{3]}$

SECTION VIII. LABOUR FORCE (AE)

NOTE: Data on permanent activity concerns the period from 01.07.2009 to 30.06.2010.
Data on current activity concerns the week from 24 to 30 June 2010.

Holder

Question 1 (AE1)
Please provide data on the holder
- PESEL
- first name and surname
- gender
  - male
  - female
- year of birth

Question 2 (AE2)
In the week from 24 to 30 June did the holder:
a) perform for at least 1 hour ~~of~~ any work providing earnings or income, or help without any contractual remuneration, in the family-owned economic activity (including agricultural one)?
- **1–** Yes -> **AE 3**
- **2–** No -> continue this question

b) have a job but did not temporarily perform it (e.g. due to sickness, holiday, etc.)?
- **1–** Yes -> **AE 3**
- **2–** No -> **AE 5**

Question 3 (AE3)
Did the holder work or have a job on his/her own (family) holding in the week from 24 to 30 June?
- **1 –** Yes, exclusively
- **2 –** Yes, mainly
- **3 –** Yes, additionally
- **4 –** No

Question 4 (AE4)
Did the holder perform work or have any job other than agricultural production conducted in his/her own (family) holding in the week from 24 to 30 June?
- **1–** Yes -> **AE 7a**
- **2–** No -> **AE 7a**

Question 5 (AE5)
Was the holder actively looking for a job in the period from 1 to 30 June?
- **1 –** Yes -> **AE 6**
- **2 –** No, he/she had already arranged for a job and was waiting for it to start within 3 months (i.e. from July to September) -> **AE 6**
- **3 –** No**,** he/she had already arranged for a job and was waiting for it to start after 3 months (i.e. from October) -> **AE 7a**
- **4 –** No -> **AE 7a**

Question 6 (AE6)
In the period from 1 to 14 July was the holder ready to take up a job?
- **1–** Yes -> **AE 7a**
- **2–** No -> **AE 7a**

Question 7 (AE7)
Within 12 months preceding the survey, i.e. from 1 July 2009 to 30 June 2010?
a) did the holder work on his/her own (family) holding dealing with agricultural production?
- **1–** Yes -> continue this question ->**AE 7b**

- **2–** No -> **AE 10**

b) what was annual working time?
- **1 –** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
- **2 –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
- **3 –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
- **4 –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
- **5 –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)

Question 8 (AE8)
Did the holder perform any other gainful activity (other than agricultural production on his/her own farm) from 1 July 2009 to 30 June 2010?
- **1–** Yes -> **AE 9a**
- **2–** No -> **AE 10**

Question 9 (AE9)
a) Was the work performed within other gainful activity:
- **1–** main -> **AE 9b**
- **2 –** additional -> **AE 9b**

b) Was it directly related to the holding?
- **1–** Yes -> **AE 10**
- **2–** No -> **AE 10**

Question 10 (AE10)
Did the holder have a spouse (partner) on 30 June 2010?
- **1–** Yes -> **AE 11**
- **2–** No ->**AE 21a**

Question 11 (AE11)
Was the spouse (partner) living with the holder?
- **1–** Yes
- **2–** No

<u>Spouse (partner) of the holder</u>

Question 12 (AE12)
Please provide data on the spouse
- PESEL
- first name and surname
- gender
  - male
  - female
- year of birth

Question 13 (AE13)
In the week from 24 to 30 June:
a) did the spouse perform any job for at least 1 hour generating earnings or income or help without any contractual remuneration in the family business (including agriculture)?
   - **1–** Yes -> **AE 14**
   - **2–** No -> continue this question

b) did the spouse have a job but did not temporarily perform it (e.g. due to sickness, holiday, etc.)?
   - **1–** Yes -> **AE 14**
   - **2–** No -> **AE 16**

Question 14 (AE14)
In the week from 24 to 30 June did the spouse work or have a job on his/her own (family) holding?

- **1 –** Yes, exclusively
- **2 –** Yes, mainly
- **3 –** Yes, additionally
- **4 –** No

Question 15 (AE15)
In the week from 24 to 30 June did the spouse perform or have any job other than agricultural production conducted on his/her own (family) holding?

- **1–** Yes -> **AE 18a**
- **2–** No -> **AE 18a**

Question 16 (AE16)
In the period from 1 to 30 June did the spouse actively look for a job?

- **1 –** Yes -> **AE 17**
- **2 –** No, he/she had already arranged for a job and was waiting for it to start within 3 months (i.e. from July to September) -> **AE 17**
- **3 –** No**,** he/she had already arranged for a job and was waiting for it to start after 3 months (i.e. from October) -> **AE 18a**
- **4 –** No -> **AE 18a**

Question 17 (AE17)
In the period from 1 to 14 July was the spouse ready to take up a job?

- **1–** Yes -> **AE18a**
- **2–** No -> **AE18a**

Question 18 (AE18)
Within 12 months preceding the survey, i.e. from 1 July 2009 to 30 June 2010
a) did the spouse work on his/her own (family) holding?

- **1–** Yes -> continue this question
- **2–** No -> **AE 21a**

b) what was annual working time?

- **1 –** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
- **2 –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
- **3 –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
- **4 –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
- **5 –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)

Question 19 (AE19)
In the period from 1 July 2009 to 30 June 2010 did the spouse perform any other activity than agricultural production on his/her own farm?

- **1–** Yes -> **AE20**
- **2–** No -> **AE21a**

Question 20 (AE20)
Was the work performed (other than agricultural production on his/her farm)
a) treated as:

- **1–** main -> **AE 20b**
- **2–** additional-> **AE 20b**

b) was it directly related to the holding?

- **1–** Yes -> **AE 21a**
- **2–** No -> **AE 21a**

Question 21 (AE21)
a) Were other family members aged 15 years or more residing together with the farm holder on 30 June?

- **1–** Yes -> **AE 21b**

- **2–** No -> **AE 31a**

b) Please provide the number of people aged 15 years or more (except the holder's spouse) who were residing together with the farm holder

<u>For each person (residing together with the holder) specified in AE 21b questions AE 22 - AE 30 are to be completed</u>

Question 22 (AE22)

Please provide data on the reference person

a) did the person form a household with the holder on 30 June?
   - Yes-> **AE24**
   - No **->** **AE23** continue this question

b) PESEL

c) first name and surname

e) gender
   1. male
   2. female

f) year of birth

Question 23 (AE23)

a) did the person perform for at least 1 hour any work providing earnings or income, or help without any contractual remuneration in the family-owned economic activity (including agricultural) in the week from 24 to 30 June?
   - Yes -> **AE24**
   - No -> continue this question

b) did the person have a job but did not temporarily perform it (e.g. due to sickness, holiday, etc.)?
   - Yes -> **AE24**
   - No -> **AE26**

Question 24 (AE24)

Did the person work or have a job on his/her own (family) holding in the week from 24 to 30 June?

- **1 –** Yes, exclusively
- **2 –** Yes, mainly
- **3 –** Yes, additionally
- **4 –** No

Question 25 (AE25)

Did the person perform or have any job other than agricultural production conducted on his/her own (family) holding in the week from 24 to 30 June?

- Yes -> **AE28a**
- No -> **AE28a**

Question 26 (AE26)

Was the person actively looking for a job in the period from 1 to 30 June?

- **1 –** Yes -> **AE27**
- **2 –** No, he/she had already arranged for a job and was waiting for it to start within 3 months (i.e. from July to September) -> **AE27**
- **3 –** No**,** he/she had already arranged for a job and was waiting for it to start after 3 months (i.e. from October) -> **AE28a**
- **4 –** No -> **AE28a**

Question 27 (AE27)

Would the person be willing to take up a job in the period from 1 to 14 July?

- **1–** Yes -> **AE28a**
- **2–** No -> **AE28a**

Question 28 (AE28)

a) Did the person work on his/her own (family) holding from 1 July 2009 to 30 June 2010?
   - **1.** Yes
   - **2.** No **->** **AE22a** (proceed to another person)
     -> **AE31a** (in case all relevant persons have been enumerated)

b) What was annual working time?
   - **1 –** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
   - **2 –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
   - **3 –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
   - **4 –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
   - **5 –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)

Question 29 (AE29)

Did the person perform any other activity providing earnings (other than agricultural production on his/her own farm) from 1 July 2009 to 30 June 2010?
   - **1**. Yes **->** **AE22a** (proceed to another person)
   - **2.** No **->** **AE31a** (in case all relevant persons have been enumerated)

Question 30 (AE30)

a) Was the work performed as a part of other activity providing earnings treated as:
   - **1–** main -> **AE30b**
   - **2–** additional -> **AE30b**

b) Was it directly related to the holding?
   - **1.** Yes **->** **AE31a**
   - **2.** No **->** **AE22a** (proceed to another person)
     -> **AE31a** (in case all relevant persons have been enumerated)

Question 31 (AE31)

a) Did any other family members not residing together with the holder perform work on the holding from 1 July 2009 to 30 June 2010?
   - **1–** Yes -> **AE31b**
   - **2–** No -> **AE36**

b) Please specify the number of family members aged 15 years or more not residing together with the holder of the holding, but who performed work in this farm

<u>For each person (working on the holder's farm) specified in AE 21b, questions AE32-AE35 are to be completed.</u>

Question 32 (AE32)

Please give the data of the person:
   - PESEL
   - first name and surname
   - gender
     - male
     - female
   - year of birth

Question 33. (AE33)

What was the annul working time of the person involved in agricultural production from 1 July 2009 to 30 June 2010?
   - **1–** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
   - **2 –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
   - **3 –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
   - **4 –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
   - **5 –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)

Question 34 (AE34)
Did the person perform other activity providing earnings (other than agricultural production on his/her own farm) from 1 July 2009 to 30 June 2010?

- **1–** Yes ->**AE35**
- **2–** No -> **AE32a** (proceed to another person)
  -> **AE36** (in case all relevant persons have been enumerated)

Question 35 (AE35)
a) Was the work performed as a part of other activity providing earnings treated as:

- main?
- additional?

b) Was it directly related to the holding?

- Yes
- No -> **AE32a** (proceed to another person)
  -> **AE36** (in case all relevant persons have been enumerated)

Question 36 (AE36)
Who managed the holding on 30 June 2010?

- **1 –** holder -> **AE 38a**
- **2 –** other family member (including the spouse) -> **AE 37_1**
- **3 –** paid employee -> **AE 37_2**

Question 37_1 (AE 37_1) (in case of other family member AE36 2)
Please, indicate the person managing the holding

Question 37_2 (AE 37_2) (in case of a paid employee AE36 3)
Please provide data of the person managing the holding:

- PESEL
- first name and surname
- gender
  - male
  - female
- year of birth

Question 38 (AE38)
What is the education level of the person managing the holding?

- **AE 38 a –** general
  - 1 – tertiary
  - 2 – post-secondary
  - 3 – vocational secondary
  - 4 – general secondary
  - 5 – basic vocational
  - 6 – primary, lower secondary
  - 7 – primary incomplete or no education
- **AE 38b –** agricultural
  - 1 – tertiary
  - 2 – post-secondary agricultural
  - 3 – agricultural vocational secondary
  - 4 – basic vocational agricultural
  - 5 – agricultural course
  - 6 – no agricultural education

Question 39 (AE39)
Did the managing person participate in additional training courses from 1 July 2009 to 30 June 2010?

- **1 –** Yes
- **2 –** No

Question 40 (AE40)
How many years the manager had been running the holding?

Question 41 (AE41) (in case of paid employee AE36 3)
What was the annual working time of the manager involved in the agricultural production from 1 July 2009 to 30 June 2010?

- **1 –** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
- **2 –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
- **3 –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
- **4 –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
- **5 –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)

Question 42 (AE42) (in case of paid employee AE36 3)
a) Did the manager perform any other gainful activity directly related to the holding?

- **1 –** Yes -> **AE42b**
- **2 –** No -> **AE43**

b) Was this activity treated as:

- **1 –** main **->** **AE43**
- **2 –** additional **->** **AE43**

<u>Employees</u>

Question 43 (AE43)
In the period from 1 July 2009 to 30 June 2010 did any paid employees or not family members work in agricultural production? (does not concern paid manager)

- **1 –** Yes -> **AE44**
- **2 –** No -> **MP1**

Question 44 (AE44)
In the period from 1 July 2009 to 30 June 2010 did the following persons work in agricultural production? (does not concern paid manager)**:**

- **a –** permanent employees -> **AE45**
- **b –** seasonal employees -> **AE49**
- **c –** contractual employees -> **AE49**
- **d –** neighbour assistance -> **AE49** (concerns natural persons' holdings only)
- **e –** other persons working on the farms run by legal persons (concerns legal persons' holdings only)

Question 45 (AE45)
What was the total number of permanent employees involved in agricultural production on the farm?

- **AE 45_1 –** men
- **AE 45_2 –** women

Question 46_1 (AE 46_1) – men; Question 46_2 (AE 46_2) - women
What was the number of permanent employees involved in agricultural production on the holding?

- **a –** less than 0.25 of a full-time job (0-530 hours, i.e. 0-66 days)
- **b –** from 0.25 to less than 0.5 of a full-time job (531-1060 hours, i.e. 67-132 days)
- **c –** from 0.5 to less than 0.75 of a full-time job (1061-1590 hours, i.e. 133-198 days)
- **d –** from 0.75 to less than 1 of a full-time job (1591-2119 hours, i.e. 199-264 days)
- **e –** 1 full-time or more (2120 hours or more, i.e. 265 days or more)
- **f –** total

Question 47 (AE47)
Did the permanent employees involved in agricultural production on the farm also perform any other gainful activity directly related to the holding?

- **1–** Yes -> **AE48**

- **2–** No -> **AE49**

Question 48_1 (AE 48_1) – men; Question 48_2 (AE 48_2) - women
What was the number of permanent employees dealing with agricultural production on the farm who also performed any other gainful activity directly related to the holding,
treated as:
  - **a –** main
  - **b –** additional
- **c –** total

Question 49_1 (AE 49_1) – men; Question 49_2 (AE 49_2) - women
What was the number of working days worked on the holding connected with agricultural production in the period from 1 July 2009 to 30 June 2010 by:
- **a–** employees hired on a temporary basis
- **b–** contractual employees
- **c–** as part of neighbour assistance (concerns natural persons' holdings only)
- **d–** other persons working on the farms run by legal entities (concerns legal persons' holdings only)

Section IX. AGRICULTURAL PRODUCTION METHODS (MP)

NOTE: Data concerns the period from 1 July 2009 to 30 June 2010 unless otherwise specified.

Question 1 (MP1)
On what area of arable land were the following methods used: [ha, a]
- **MP1a –** ploughing with a mouldboard or rotary plough
- **MP1b –** conservation tillage (low tillage)
- **MP1c –** non-ploughing tillage (direct seeding)

Question 2 (MP2)
What area of arable land in the winter season was covered with: [ha, a]
- **MP2a –** winter crops
- **MP2b –** cover crops or after-crops
- **MP2c –** plant residues
- **MP2d –** bare soil

Question 3a (MP3a)
Was the entire arable land on the holding covered with crop rotation?
- **MP3a –** Yes -> **MP4**
- **MP3a –** No -> **MP3b**

Question 3b (MP3b)
What part of the arable land of the holding was excluded from crop rotation?
(no crop rotation – the same crop for at least 3 years)
- **MP3b_1 –** from 1% to 24%
- **MP3b_2 –** from 25% to 49%
- **MP3b_3 –** from 50% to 74%
- **MP3b_4 –** 75% or more

Question 4 (MP4)
Were any linear elements of landscape present and cultivated on the holding within the open agricultural landscape in the last 3 years?
hedges:
- **MP4a –** Yes -> **MP4b**
- **MP4a –** No -> **MP4b**

tree lines:

- **MP4b –** Yes -> **MP5**
- **MP4b –** No -> **MP5**

Question 5 (MP5)
Has any linear elements of landscape been established during the last 3 years?
hedges:
- **MP5a –** Yes -> **MP5b**
- **MP5a –** No -> **MP5b**

tree lines:
- **MP5b –** Yes -> **MP6**
- **MP5b –** No -> **MP6**

Question 6 (MP6)
Was animal grazing conducted on pastures?
- **MP6 –** Yes -> **MP7**
- **MP6 –** No -> **MP13**

Question 7 (MP7)
Was animal grazing conducted on holding's land?
- **MP7 –** Yes -> **MP8**
- **MP7 –** No -> **MP10**

Question 8 (MP8)
What was the area intended for grazing on the holding? [ha, a]

Question 9 (MP9)
How long (in months per year) does the grazing season usually last on the holding?

Question 10 (MP10)
Was animal grazing conducted on any common land?
- **MP10** – Yes -> **MP11**
- **MP10 –** No -> **MP13**

Question 11 (MP11)
What was the number of animals grazed on common land? [heads]

Question 12 (MP12)
Amount of time (in months per year) when animals were grazing on common land

Question 13 (MP13)
Did the holding have the following animal housing: cattle barns, pigsties and poultry houses?
- **MP13 –** Yes -> **MP14**
- **MP13 –** No -> **MP23**

Question 14 (MP14)
Did the farm have any cattle barns?
- **MP14 –** Yes -> **MP15**
- **MP14 –** No -> **MP16**

Question 15 (MP15)
Number of places for cattle:
- **MP15a –** in stanchion-tied stable - with solid dung and liquid manure
- **MP15b –** in stanchion-tied stable - with slurry
- **MP15c –** in loose housing - with solid dung and liquid manure
- **MP15d –** in loose housing - with slurry
- **MP15e –** other types not specified above

Question 16 (MP16)
Did the farm have any pigsties?
- **MP16 –** Yes -> **MP17**
- **MP16 –** No -> **MP18**

Question 17 (MP17)
Number of places for pigs:
- **MP17a –** on partially slatted floors
- **MP17b –** on completely slatted floors
- **MP17c –** on straw beds
- **MP17d –** other types not specified above

Question 18 (MP18)
Did the holding have any poultry houses for laying hens?
- **MP18 –** Yes -> **MP19**
- **MP18 –** No -> **MP23**

Question 19 (MP19)
Number of places for laying hens on straw beds (deep litter-loose housing)

Question 20 (MP20)
Did the holding have any battery cages for laying hens?
- **MP20** – Yes -> **MP21**
- **MP20 –** No -> **MP22**

Question 21 (MP21)
Number of places for laying hens in the battery cages:
- **MP21a** – in battery cages with manure belt
- **MP21b** – in battery cages with deep pit
- **MP21c** – in battery cages with stilt house

Question 22 (MP22)
Number of places for laying hens poultry houses of other type

Question 23 (MP23)
What part of agricultural land maintained in good agricultural and environmental condition was fertilised?
a) solid manure
   - **MP23a_1** – 0%
   - **MP23a_2 –** 1%-24%
   - **MP23a_3 –** 25%-49%
   - **MP23a_4 –** 50%-74%
   - **MP23a_5 –** 75% or more
b) solid manure with immediate incorporation
   - **MP23b_1** – 0%
   - **MP23b_2 –** 1%-24%
   - **MP23b_3 –** 25%-49%
   - **MP23b_4 –** 50%-74%
   - **MP23b_5 –** 75% or more
c) liquid manure/slurry:
   - **MP23c_1** – 0%
   - **MP23c_2** – 1%-24%
   - **MP23c_3** – 25%-49%
   - **MP23c_4** – 50%-74%
   - **MP23c_5** – 75% or more
d) liquid manure/slurry with immediate incorporation or injection
   - **MP23d_1** – 0%
   - **MP23d_2** – 1%-24%

- **MP23d_3** – 25%-49%
- **MP23d_4** – 50%-74%
- **MP23d_5** – 75% or more

Question 24 (MP24)
What part of produced manure and slurry exported from the holding?
- **MP24_1** – 0%
- **MP24_2** – 1%-24%
- **MP24_3** – 25%-49%
- **MP24_4** – 50%-74%
- **MP24_5** – 75% or more

Question 25 (MP25)
Did the holding have any solid dung storage facilities?
- **MP25 –** Yes -> **MP26**
- **MP25 –** No -> **MP28**

Question 26 (MP26)
Were the solid dung storage facilities covered?
- **MP26 –** Yes -> **MP27**
- **MP26 –** No -> **MP27**

Question 27 (MP27)
What was the area of solid dung covers ? [m^2]

Question 28 (MP28)
Did the holding have any slurry storage facilities?
- **MP28 –** Yes -> **MP29**
- **MP28 –** No -> **MP31**

Question 29 (MP29)
Were the slurry storage facilities covered?
- **MP29 –** Yes -> **MP30**
- **MP29 –** No -> **MP30**

Question 30 (MP30)
What was the capacity of slurry tanks? [m^3]

Question 31 (MP31)
Did the holding use following slurry storage facilities?

a) tanks:
- **MP31a –** Yes -> **MP31b**
- **MP31a –** No -> **MP31b**

b) lagoons:
- **MP31b –** Yes -> **MP32**
- **MP31b –** No -> **MP32**

Question 32 (MP32)
Were the slurry storage facilities covered?

a) tanks
- **MP32a –** Yes -> **MP32b**
- **MP32a –** No -> **MP32b**

b) lagoons
- **MP32b –** Yes -> **MP33**
- **MP32b –** No -> **MP33**

Question 33 (MP33)
What was the total capacity of tanks and lagoons? [m^3]

Question 34 (MP34)
Did the holding use pesticides?

- **MP34 –** Yes -> continue this question
- **MP34 –** No -> **MP35**

  - **MP34a –** insecticides
  - **MP34b –** fungicides and seed treatment
  - **MP34c –** herbicides
  - **MP34d –** rodenticides
  - **MP34e –** other

Question 35 (MP35)
What was the average area of agricultural land irrigated in the last 3 years? [ha, a]

Question 36 (MP36)
Area of crops irrigated at least once: [ha, a]

- **MP36p –** total
  - **MP36a –** cereals for grain (except maize)
  - **MP36b –** maize for grain and green forage
  - **MP36c –** legumes
  - **MP36d –** potatoes
  - **MP36e –** sugar beets
  - **MP36f –** rape and turnip rape
  - **MP36g –** sunflower
  - **MP36h –** fibrous plants (flax, hemp)
  - **MP36i –** field vegetables and strawberries as part of crop rotation with agricultural crops
  - **MP36j –** field grasses for green forage
  - **MP36k –** other crops including fallow land
  - **MP36l –** plantations of fruit-bearing trees and bushes including area of fruit-bearing trees and shrubs grown outside plantations,
    of which
    - **MP36m –** grapevine
  - **MP36n –** permanent grass land (except permanent meadows and pastures excluded from production, as well as non-cultivated grazing land)

Question 37 (MP37)
What irrigation methods were applied on the holding?

- **MP37a –** surface irrigation
- **MP37b –** sprinkler irrigation
- **MP37c –** drop irrigation

Question 38 (MP38)
What was the main source of water used for irrigation on the holding?

- **MP38a –** ground water
- **MP38a –** on-farm water (ponds or dams)
- **MP38a –** off-farm surface water (lakes, rivers, watercourses)
- **MP38a –** off-farm water from common water supply systems
- **MP38a –** other sources

Question 39 (MP39)
How many water has been used on the holding for irrigation? [m^3]